

# Garamba National Park

Story and photos by Kes Hillman Smith



Garamba has been a World Heritage Site since 1981.

IT IS EARLY MORNING. THERE IS still a cool, damp tang in the air. The little old aircraft roars into life. We take off and head out over the seemingly endless expanses of rolling savanna grasslands, rivers, and clumps of trees hiding perennial freshwater springs. Groups of elephants and buffalos scatter the landscape. It never ceases to give me a thrill, even after ten years. It is never quite the same. The grass grows, matures, burns and sprouts again. The mosaic patterns of long old grass and fresher green patches change. It is wild, free and unpopulated.

When I first came to the 4,900 kilometre square Garamba National Park in 1980, with the venerable Major Ian Grimwood and his equally venerable Land Rover, it had the appearance of past sophistication and current deterioration. Although it did

not show on the surface, the poaching was rife. In 1976 an aerial count made by the FAO gave estimates of  $490 \pm 270$  rhinos and  $22,670 \pm 11,790$  elephants.<sup>1</sup> By 1984 there were only 15 rhinos, and the elephant numbers dropped as low as 4,500.<sup>2</sup>

But the rhinos are unique. They are the last known wild population of the northern white rhinoceros (*Ceratotherium simum cottoni*), a different sub-species from the white rhinos found south of the Zambezi river (*C. s. simum*). Their populations once ranged from West Nile Province of Uganda, through Southern Sudan and the northern edge of Zaire to the Central African Republic and Chad. They are adapted to the high rainfall, lightly bushed, seasonally long grass savannas of this sudano-guinean savanna belt. Even in 1980, hundreds remained in Sudan. Now there is only a slight possibility that a few may still exist in Southern National Park or elsewhere in Sudan. In captivity there are five in the Czech Republic and four in the USA, down from 12 captive in 1983. Garamba has the only confirmed and conserved wild group.

Our visit in 1980 was part of a survey of rhinos throughout Africa. The rhinos were not only unique, but they represented rich ecosystems and wild and wonderful parts of Africa that were apparently almost forgotten by the international conservation organisations. The conservation of northern white rhinos was given highest priority by the IUCN African Rhino Group.

Garamba has a long established infrastructure, with a staff of some 250 people, though at that time they had received no salaries for six months. There

<sup>1</sup> Savidge, J.M. Woodford M.H. and Croze H. (1976) Report on a mission to Zaire, FAO W/K1593 KEN/71/526 - ZAI/70/001

<sup>2</sup> Hillman Smith K. (1989a) Ecosystem Resource Inventory, Garamba National Park. Internal document. IUCN/WWF/FZS/IZCN.





Left; Buffalo crossing one of the many water courses in the park. An example of Valley Grassland habitat bordered by Edge Savanna Grassland with *Kegelia africana* trees.

Opposite top; Guards on patrol in the early morning.

Credit: Fraser Smith

Opposite bottom; A small mixed group of *Kobus kob* with an approaching rainstorm in the early wet season.

were no vehicles, fuel, equipment, uniforms or rations, and hence no patrolling except to go and shoot your own meat. Poaching was, as could be expected, widespread. So, despite recommendations that the rhinos should be taken into captivity for their safety, it was decided that a project would be funded to rehabilitate this national park and conserve its unique ecosystem. It proved to be the right decision. That project started in March 1984 in cooperation with the Institut Zaïrois pour la Conservation de la Nature (IZCN), the government agency for conservation of protected areas in Zaire. It was funded mainly by WWF, Frankfurt Zoological Society (FZS) and UNESCO, with IUCN as coordinator.

But how do you go about re-building a whole national park from rock bottom, in almost the exact centre of Africa? An immense amount of motivation, effort, patience, tolerance, and the ability to laugh at crazy situations has to go into the practical logistics of anti-poaching, supplies, development, maintenance, information collection, strategy development, monitoring and it all needs the continual support of fund-raising. Everything seems to take several times as long to achieve as it might elsewhere.

The roads are challenging. What was once planned as the great trans-African Route Royale runs past Garamba, but these days it is a series of pot-holes and broken bridges. Along some of the roads in Zaire are pot-holes so deep that a lorry and container driving in may just disappear below the edges of the road. At times there are hold-ups of several weeks while a backlog of trucks take turns at pulling and digging each other through these holes. There are no telephones or public transport and, near Garamba, no shops. All vehicle and

aircraft fuel, 250 drums of it per year, has to be trucked in from Mombasa in Kenya.

Vehicles are essential for the anti-poaching, logistical support, infrastructure development, and for the monitoring and research of the ecosystem. Over time they have been purchased, shipped and driven up. But all spare parts have to be brought in by air or road. Uniforms, boots, tents and equipment for 250 people have to be regularly purchased, transported and issued. The coarse grass wears them away very rapidly. Ten tonnes of rice in husk and four tonnes of beans, plus palm oil and salt have to be bought each year and transported over the local roads, stored and then de-husked in order to maintain the patrolling strategy. The rice, bought from a local market, is painstakingly measured by the cupful or plastic washing-up bowlful. Communication is by radio, mail by the amazing flight network, using Cessna 206s, that the missionaries have developed to serve their widespread missions. The missions and their associated dispensaries, hospitals and schools are one of the few things that continue to work in the currently depressed economy of Zaire; . . . the missions, and Garamba.

There were riots in Zaire in 1991, and evacuations of major government cooperation projects, but Haut Zaire has been relatively calm. WWF maintained its commitment and now supports most of the running of the entire park. The rhino population doubled in eight years from 1983. The elephants (*Loxodonta africana*), which are an intergrade between savanna and forest forms, had increased to  $8,883 \pm 3,109$  in 1993 and the buffalos (*Synceros caffer brachyceros*), which are a mix of the black Cape buffalo type and the red, short-horned forest types, numbered  $31,163 \pm 15,458$ .<sup>3</sup> Garamba

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Garamba is one of the oldest national parks in Africa, created in 1938.



## The northern white rhinos and their survival

*Top left; Two sub-adult female northern white rhinos.*

Credit: Fraser Smith.

*Top right; Part of a group of 600 elephants photographed from the air during the 1993 count.*



Rhino monitoring is based on individual recognition. Each animal is identified by means of horn shapes and ear and tail marks, coupled with age and sex. Nose wrinkles are used at close quarters. Individuals differ considerably in behaviour, temperament and parameters such as reproductive rates.

As the population grew and the ranges, particularly of sub-adults, expanded, we found it was necessary to attach radio collars to aid the monitoring and protection. This enabled us, among other things to ear mark sub-adults who are otherwise difficult to identify once they have left their mothers. It has also helped us to discover an extended family system among the rhinos, whereby the offspring of any one female have loose ties to her own group with her latest calf and all linked groups may make long distance synchronous movements when the female does. The rhino monitoring is a vital part of their protection, as the main form of surveillance in the rhino area, and a check on population dynamics.

The rhinos increased initially at a growth

rate of 9.7% per annum. They compensate for being at low density (0.03/km<sup>2</sup> within their range) by having larger home ranges than those recorded for white rhinos anywhere else in Africa (255 km<sup>2</sup> on average). In this way we have found all fully adult males contributing to the breeding. The finding has also refuted the fear expressed when rhino poaching was at its height in East Africa, that rhinos being such sedentary, range-orientated creatures would have trouble finding mates and therefore cease breeding when reduced to very low numbers.

Might so small a population suffer from inbreeding depression in the future? This question has arisen, though the healthy rate of increase of southern white rhinos after reduction to similar numbers is an encouraging example. To investigate the genetic variability and the paternal contribution we took a series of small skin samples from the rhinos using the remote biopsy dart techniques developed by Dr William Karesh<sup>7</sup>. These are being analysed in a cooperative project with the Department of Molecular Biology at the National Museums of Kenya.

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and surrounding reserves are also the last refuge for giraffes in Zaire, (*Giraffa camelopardalis congoensis*) (346 ± 413). There are Roan antelope, and in total 138 species of mammals.

These numerous mammals include 38 species of bats, according to Verschuren, who studied them in the 1950s. In practical terms this can have its disadvantages, however. While the different species live in different habitat niches, several of them inhabit buildings, in their thousands. Bat guano is very corrosive and the smell is over-powering. Bat proofing a building is a major exercise, that they will manage to circumvent after a while. When we first came the secretary/accountant of the park used to sit at his desk in the main building, with a large colourful umbrella over him and his papers. Now we struggle to protect new-fangled computers from old-fashioned bats!

The picturesque, undulating long grass savannas grow at an enormous rate, and during the late wet season completely engulf people, vehicles and animals to all but the tops of elephants heads. Dominated by *Loudetia arundinacea* and six *Hypparhenia* species, with a scattering of *Urelytrum giganteum*, which is as its name suggests, the grass grows 2-3 metres tall. Roads have been made as strategically necessary throughout the park and over 600 kilometres have to be kept open each year, by three passes each of tractor and mower. Mowers need to be of very heavy duty and require frequent repair. River crossings have been built, both to get into the park across the Dungu River, and to cross some of the perennially flowing rivers that dissect the grasslands.

Aircraft are vital for logistics, anti-poaching and monitoring. FZS continues to maintain a Cessna 206 for the project and a private Piper PA12 does the rhino monitoring and some of the anti-poaching reconnaissance. They also have to be maintained, far from support.

At present the economic state of Zaire is such that even salaries and medical support for the guards cannot be provided nationally. It is all having to be found from international funds, largely at the moment from the International Rhino Foundation. The average monthly wage of the guards throughout the period 1984-1993 has been US \$4, though this is increased by bonuses for results. Through all difficult times, however, the guards have remained loyal to conservation. Ultimately it all depends on people. Medical care means a lot in motivating them, and as well as buying medicines, we sometimes find ourselves flying urgent cases to hospital or delivering babies!

But it is all well worth the effort. This beautiful, faunally rich and historically important expanse of Africa has been rescued from near disaster to its

wildlife populations. The southern section of the park has one of the highest elephant densities in Africa (3.85/km<sup>2</sup>). In the early wet season they still form huge, spectacular aggregations of several hundred elephants. As a flagship species the rhinos in situ conservation as part of an ecosystem has also benefitted all the other animal and plant species, the National Park and the IZCN.

The practical side of conservation and anti-poaching is Fraser's responsibility, and has been those of other colleagues who have run the project. I had to find out how many rhinos still remained alive at the beginning of the project, and was tasked by the Director of the Wildlife Department to establish and maintain ecological and rhino monitoring and guide research projects within established priorities. Some of this early work was supported by the Kenya Rhino Action Group, the Fauna and Flora Preservation Society and the Wildlife Conservation Fund. Later the monitoring and research was supported by WWF with contributions also from US Fish and Wildlife Service and Save the Rhino International.

Systematic aerial sample counts provide regular information on the status of the main mammals, the distribution and condition of vegetation types, and distribution and quantity of human land use and poaching. Species specific counts have been made, for example flying along all the twists and turns of the rivers, counting hippos and working out how many might have been underwater at the time. Detailed information is collected standardly at ground level on vegetation, the effects of fires, large mammals, birds and the climate. Poaching and anti-poaching is monitored through recordings made by the patrols themselves.

The southern half of the park is a sweeping expanse of undulating long grass savanna cut by numerous watercourses all with flowing water throughout the year. They drain into the Garamba, Aka and Dungu rivers that form the central division and western and southern boundaries respectively. Relict gallery forest lines some of the tributaries and clusters around the eternal springs. Towards the peripheries and the north are increasing densities of bush, dominated by *Piliostigma thoningii* and *Combretum collinum*, *Grewia mollis*, *Terminalia*, *Albizia* and *Crossopteryx febrifuga* in differing proportions depending on whether it is in the process of encroaching or retreating. Further north this becomes woodland and the ground rises with rocky hills to the Zaire/Nile watershed.

Sudan forms the northern boundary of the park, while to the east, west and south it is surrounded by three Hunting Reserves, totalling 7,527 kilometres square. The chronic civil war in Sudan has long been a source of arms and poaching and while the project and IZCN together succeeded in

**'The rhinos have proved that they can increase at a rate equal to that recorded for southern white rhinos, given protection'**

<sup>3</sup> Smith K., F. Smith, Mbayma A., Monungu L., J. Watkin, E. de Merode, Amube N., Eza K. (1993) Garamba National Park, General Aerial Count, May 1993. Report to IZCN, WWF, FZS, IUCN, UNESCO.

reducing the bulk of this, minor meat poaching, largely of buffalo continued in the north, and probably continued to have a certain compressing effect on the elephants. The south has been virtually free of poaching and is the refuge for the rhinos and the majority of the elephants. The effect of the elephants combined with regular hot fires fuelled by the high grass biomass has long maintained the south of the park as a grassland, with only sparse tree cover. Our transects have shown widespread woody regrowth from old rootstocks each year throughout the grassland, but research has also shown how the elephants select them. The reserves are more densely wooded than the park, with a mosaic of medium to dense tree-bush savanna,

## 'Immigrant gold miners and, since 1991, an estimated 50,000 Sudanese refugees have increased the poaching pressure'

woodland, gallery forest and open bushed grassland. As the elephant population has increased it has demonstrated marked movements into the reserves at night to use the woody vegetation, especially in the dry season.<sup>4</sup> Associated with this is a certain

amount of crop raiding, which, although limited in extent, is viewed as important by those who suffer from it.

The reserves are a complex mix of habitats needed for full support of some wildlife species, of some human-wildlife conflicts, of natural resources that the local population have the right to use and of those that they use illegally. The people who live in and around the reserves are also the main source of poaching. Subsistence offtake by the local people is tolerable to the system, but the immigrant gold miners and, since 1991, an influx of what has been estimated at as many as 50,000 Sudanese refugees to the area has increased the poaching pressure. Although these people are beyond the reserve boundaries and most are settled as farmers, there are inevitable links to the Sudanese civil war with arms availability and demands from there for meat. There has long been a need for development of the project to involve the human communities in the conservation, both through managing the reserves to enable them to benefit from the controlled use of natural resources and the presence of the park, and through tackling the causes of the poaching problem at source in cooperation with the people. This was curtailed by financial sanctions on Zaire after 1991, but the need is all the more pressing now to support the necessary fortress approach to anti-poaching within the park.

When poaching tactics changed to a more aggressive approach in 1994, cooperative action with the local army was necessary and successful in combatting the effect. Although their direct action is no longer necessary, excellent relations are maintained and they support the IZCN forces with training and back-up as necessary.

But while the challenges increased, due to national economics and poaching in the north, financial support was forced to decrease due to the world recession and loss of donor partners.

Tourism has not so far been a major financial support, partly because one of the beauties of the place, its remote wildness, also means that it is not the easiest place to visit. But the potential is tremendous, as Garamba is also home to the unique Elephant Domestication Centre of Africa. Begun in 1901 at the command of King Leopold of the Belgians, the story of this little known but major undertaking is amazing.<sup>5,6</sup> At times 50 or more elephants were working in transport, agriculture and forestry. Three adult domestic elephants still exist. To operate fully the Centre needs to be the subject of a project in itself, but the existing Garamba Project has demonstrated that it is very feasible to capture and domesticate young elephants using modern methods. While not without its controversy, it is believed that the value of a few domesticated elephants to the conservation of their kin and the rest of the park is worth it. In other areas the same argument is applied to culling and sale of products. To ride an elephant through these wide savannas and to approach close to wild elephants and the last northern white rhinos, is an experience of a lifetime. Immortalised recently in one of Alan Roots' films, this attraction may increase. Already safari operators from Kenya and South Africa have begun bringing specialised groups to Garamba.

The long term support of conservation organisations, particularly WWF to Garamba has been and is wonderful, but the annual budget for the whole park is low compared with other areas and is currently lower than it was in the past, at a time when it is needed more. There is a need to move forward and outward with a more comprehensive approach to the management and monitoring needs, in order to achieve adequate long term conservation of this unique park and the last wild northern white rhinos, northern savanna giraffe and major elephant populations. Long term solutions and partner supporters are being sought, to maintain the value of the investment that has been made in the conservation of this challenging but wonderful National Park and its unique fauna. Garamba has been a real success story. We hope it can continue to be. ❧

<sup>4</sup> Hillman Smith A.K.K., E.de Merode, A.Nicholas, B.Buls, N.Ndey, (1995) Factors affecting elephant distribution and conservation at Garamba National Park and surrounding reserves. *Pachyderm*, in press.

<sup>5</sup> Hillman Smith Kes (1992) The elephant domestication Centre of Africa. 152-154, In *Elephants*, Ed: J.Shoshani, Publ. Weldon Owen/Simon & Schuster.

<sup>6</sup> Watson R. The domestic elephants of Garamba National Park. *Swara*.

<sup>7</sup> Karesh W.B., F.Smith & H.Frazier-Taylor (1987) A remote method for obtaining skin biopsy samples, *Conservation Biology* 1.(3) 261-262.

# Film reviews

## The Impossible Elephants

### River of Fire and Ice

By Alan Root

THE TWO LATEST FILMS TO BE SPUN from the web of Alan Root and Bruce Davidson were previewed at the National Museum of Kenya in May, to the great appreciation of Nairobi's residents who flocked to watch them. We were not disappointed as each revealed a fascinating story, superbly narrated by Brian Cox.

The first film, *The Impossible Elephants*, is set in Garamba, a large national park in north eastern Zaire. This is the only known place in the world where there is a wild population of the northern white rhino (See pages 18-21 of this *Swara* issue) and the only place in Africa (except recently Botswana) where one can ride on an elephant! The idea of domesticating elephants was introduced from India in 1879 with the ambitious march of Indian elephants to Africa. Unfortunately, those that survived the journey itself died within eighteen months anyway. In 1900 the first training of African elephants in Zaire began with the aid of experienced mahouts. Alan Root has made liberal use of black and white footage from this time to show the capture and training of young wild elephants at Gangala, just south of Garamba's park boundary. This gives the viewer a full account of the story of the domestic elephants and Garamba National Park. The quality of the original film is good and emphasizes the contrast between then, when the elephants worked hard but led active and varied lives, and the recent past, when they were not utilized and their numbers were allowed to dwindle to only three.

The film has come just as the park is beginning to promote the elephants for tourism and re-invest in them fully. Today the remaining elephants take visitors through the park for an unnerving close encounter with its wildlife. On elephant back one can see over the tall grasses of Garamba and even reach within one foot of other animals to watch them behave naturally, not under the stressful circumstances induced by vehicles.

Views of the still large wild elephant herds in the park and of the Gangala elephants marching in a line across the horizon of a sunset are images that tell of a very special place where a few members of one species can help conserve the rest.

Overall, *The Impossible Elephants*, is about the history of the park and the role it can play in the future and as such is rather different from the second of the new films.

*River of Fire and Ice* is spectacular for both its consistently startling photography and the almost mystical way in which the ecosystem of the Virunga



National Park is gradually revealed. Virunga National Park was originally called Albert National Park and was the first national park actually gazetted in Africa. Sweeping aerial shots reveal the vastness of the Ituri Forest and Lake Edward; they take in the rugged peaks of the majestic and remote Virunga range and the moving masses of lava that continue to spill sporadically from these mountains. We are led across 100 miles from the southern Rwenzori Mountains to the home of the mountain gorillas in Virunga. Altogether work on the film was spread over seven years and it is clear why from the patience needed to capture some of the scenes; an inquisitive group of gorillas playing together, gently poking a chameleon, a silverback beating his chest to warn a neighbouring dominant male to stay away; a hungry civet cat attempting to eat a reluctant cobra. Other tension-filled scenes reveal a dark secret of the Virungas; on their hillsides there are some hollows where carbon dioxide is released from the volcanic activities below ground. Before the sun and wind can disperse the noxious blanket that forms each day, any creature that enters the area, tempted by the lush grass (mostly ungrazed) and unfortunate carcasses, can be dead within seconds. A monitor lizard's attempts to escape the pit of vapours and his close brush with death keeps the viewer in horrible suspense and wonder at the instinct (or the reasoning power) that enables him to survive.

Once again Alan Root has given us an insight into fascinating yet little known areas of the world we live in, and he has achieved it in his inimitable style that informs, impresses and above all, entertains.

By Louisa Lockwood

*Above; Visitors to Garamba National Park take a ride on Lwiro, one of the domestic elephants, and are able to approach a group of northern white rhinos.*

Credit: Kes and Fraser Smith/WWF