## Promoting Conservation in the Luangwa Valley, Zambia

## THE LUPANDE DEVELOPMENT WORKSHOP

and rhinos are free from the immediate threat of poaching and the ultimate threat of habitat destruction. Despite the immense area of Luangwa Valley's parks and wildlife management areas, which collectively total over 50,000km<sup>2</sup>, these threats are becoming increasingly real for the future survival of Luangwa's elephants and black rhinos.

Recent research has shown that conserving Luangwa's elephants will require managing the population as one that reqularly leaves the park for preferred forage outside. Such movements are well established from many years of seasonal traversing. These movements, however, are resulting in a high incidence of crop damage by elephants, related possibly to an increased frequency of farm plots. The conflict between man and wildlife is rarely more dramatic than elephants feeding on a village garden of maize or sorghum, a sight that is symbolic of how restricted elephant range has become in recent years. The Luangwa Valley, however, is relatively young in its progression of land change; but the early indicators suggest that Luangwa Valley is following the route so commonly practised elsewhere: more maize fields and less elephant range. This, of course, is an over-simplification of what is happening to Africa's wildlife, It does, however, underline the basic problems facing wildlife in Luangwa Valley: how to integrate rural development with wildlife conservation.

With so much sustainable potential from wildlife resources in the Luangwa Valley, one wonders why the need to conserve wildlife is not self evident. The bitter irony, however, is that wildlife has been poorly developed and offers little to local residents who live on much of the same lands as the valley's wildlife. This, of course, jeopardizes the long-term conservation of wildlife. The survival options of rural villagers are few. Traditionally it has been largely slash and farm. With the higher costs of living, the options now include illegal killing of wildlife for commercial profits, with greatest profits earned from elephants and rhinos. Another worrisome trend that will weaken the development potential of Luangwa's wildlife is the bias in international development aid toward agriculture, which is introducing more advanced farming methods. Undoubtedly, such methods will increase the rate of land clearing in Luangwa Valley.

Such chains of events are well known elsewhere in Africa. The scenario often results in the eventual deterioration of land productivity and land quality. This is especially true when extension services and governing bodies are unable to monitor and regulate environmental stresses in the ecosystem, as is usually the case in developing African nations. No one can put a price tag on what it will cost to rehabilitate land before the damage has been done, but for countries with low income earnings, it is unlikely such costs can or ever will be met. To avoid such unnecessary penalties of poor land-use planning in the Luangwa Valley, a government level conference was convened in the Luangwa Valley on the shady banks of the Luangwa River at a remote wildlife camp called Nyamaluma. Its purpose was to discuss and endorse recommendations for land-use planning and wildlife conservation in the Luangwa Valley. From 19-22 September, over 35 delegates attended the conference and brought with them their expertise in resource management, government land-use

policies and rural development.

The conference was called the Lupande Development Workshop, since discussions were largely based on studies dealing with land-use development problems in Lupande Wildlife Management Area (see Fig. 1). Considered representative for much of the Luangwa Valley, the Lupande offered a model for understanding land-use problems of the whole Luangwa Catchment.

The workshop was not just a gathering of wildlife protectionists but was a balanced assembly of people representing many aspects of land development from agricultural aid organizations to rural economists. It provided 4 days of data presentations, discussions and debates on the issues and problems most relevant to the future development of the Luangwa Valley and its wildlife resources. By the final day the delegates were expected to produce a set of resolutions that would launch a definitive campaign to manage and better utilize the Valley's great wealth of natural resources while assuring their long-term conservation.

Under the effective chairmanship of Chief Research Officer of Zambia's National Parks and Wildlife Service, Mr Gilson Kaweche, the workshop achieved its goals with a level of importance that has made this workshop an important first step in achieving a lasting wildlife future for Luangwa Valley. Together with a preamble, the delegates endorsed the following resolutions to serve as a broad course of action in guiding all future initiatives of resource management in the Luangwa Valley:

"The Luangwa Valley is an asset of national and global importance. This asset is seriously endangered by poaching and lack of proper wildlife and land management. In the long term, rapid population growth in the Valley and the adjoining areas will aggravate the situation.

"The workshop identified the urgent need for integrated long-term regional planning, resource conservation and landuse rationalization in the Luangwa Catchment. It is necessary to start a self-sustaining management of natural resources to support balanced development of both human and wildlife populations.

"The workshop therefore recommended that:

1) A Luangwa Development Project (LDP) be established to develop the Luangwa Catchment as a model for efficient management and utilization of wildlife and other resources. 2) Significant funds should be mobilized from domestic and international resources to establish and support the LDP in its initial stages. Toward this end, it is essential that Luangwa Catchment's special significance be acknowledged and supported both within Zambia and gobaJly. Zambia, therefore, should seriously consider becoming a signatory to the UNESCO World Heritage Convention and action should be taken immediately to declare the Luangwa Valley as a World Heritage Site.

3) Substantially increased funding and staff be immediately allocated to all organizations engaged in combating poaching. Without such action, all other initiatives to develop the Catchment's resources will be abortive.

Whereas the ecology of the savanna elephant has been in-

4) The people of the Luangwa Valley's Wildlife Management Areas must participate in the development and management of the Catchment and benefit from the yields from those resources.

5) Extensive research pertaining to the management and development of the Luangwa Catchment is required and hat a Luangwa Research and Education Institute should be established.

6) An interim planning group, based within the Provincial Planning Unit in Chipata, be established to prepare project designs and budgets to support development of the LDP within one month."

The real significance of this workshop will be judged as the Government of Zambia studies these resolutions and the specific management proposals that the Interim Group has already presented. Zambians and friends of Zambia await anxiously for a new course that will lead the development of Luangwa Valley, the jewel of Zambia's natural resources, to a future where both man and wildlife can coexist. The Lupande Development Workshop is clearly seen as the first step in the right direction. The beneficiary will be more than the endangered rhino arid elephant populations or the rural villagers who share their lands with these species of wildlife. The beneficiary will be a major ecosystem in southern Africa with a heritage and resource potential of monumental importance to this continent.



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Luangwa Catchment Area including national parks and game management areas

## Ecology of The Forest Elephant in Tai National Park, Ivory Coast

vestigated in numerous studies, research on the ecology of the forest elephant in Africa began only a couple of years ago. This is mainly because of its habitat, the tropical rain forest.

In the tropical rain forest direct observations are almost impossible because of the dense vegetation. The thick forest canopy cuts out nearly all the sunlight.

In Tai National Park, Ivory Coast, an attempt was made to gain some knowledge about the hidden life of the forest elephant. Tai National Park covers 340,000 ha which consist mainly of primary rain forest. This offers possibilities for studying larger rain forest mammals, particularly elephants.

The methods used were mainly based on indirect observations. Signs of the elephants such as footprints, trails, droppings, browsing patterns etc. were noted. This was done along fixed transects characterizing different vegetation types of the Tai National Park (Fig. 1). Transects 2, 3 and 4 were covered by primary rain forest, transects 1 and 5 primary and secondary vegetation change and transects 6 and 7 were characterized by secondary forest and bush vegetation. All these transects are strip transects with a width of 3m each and a length of 8km ( $h_2$ ,  $h_3$ ,  $h_6$ ), 7km ( $h_5$ ), 5,5km ( $h_1$ ,  $h_7$ ) and 4,5km ( $h_4$ ). Over three years, patrols were carried out in a 39day cycle, on average.

The forest elephant is well adapted to its environment. In comparison with the savanna elephant, its body size is smaller, and its ears are relatively small and round. Its head is bent forward, with thin, slightly curved tusks going down to the ground.

Like many species of mammals living in the rain forest, the elephant forms only small groups of about three to four animals on average (Fig. 2). The formation of larger herds, as known in savanna areas, was not observed. Only in swamp forests are aggregations of 20 to 40 animals possible.

In the tropical rain forest there is enough food and water all the year round, so the elephant is not forced to travel great distances to meet those demands. During the rainy season, however, the elephant shows a higher mobility than in the dry season. During the hours of daylight the elephant moves about 5km on average; its annual home range is estimated to be about 150 to 200km<sup>2</sup>.

The primary rain forest is the original habitat of the forest elephant, a habitat now declining on a huge scale because of forestry and agriculture. In the Ivory Coast, statistics show that between 1956 and 1966 approximately 280,000 ha of rain forest were exploited per annum. Between 1966 and 1974 this figure rose to 450,000 ha. In 1982 only about 12% of the area which was still covered by primary rain forest in 1956 remained, i.e. more than 90% of the country's original rain forest has been transformed into man-made landscapes or has been ecologically modified.

If the ecology of the forest is only slightly changed, e.g. in selective logging, the forest elephant can adapt itself to this new environment. The clearing of the rain forest could even be attractive to the elephant, depending on the extent and