

THE STATUS OF WILDLIFE CONSERVATION IN BOTSWANA

W VON RICHTER

*F A O Wildlife Ecologist
Department of Wildlife, National Parks and Tourism
P O Box 131
Gaberone
Republic of Botswana*

The sparse human population and the general lack of surface water over most parts of the Republic of Botswana, which has hampered rapid expansion of agricultural activities into the less suitable areas in the past, have contributed to the fact that Botswana still supports a varied and rich wildlife population. The long history of hunting by the local populace makes them understand and appreciate the concept of wildlife conservation and utilization and has assisted in general to implement a policy for rational conservation and utilization.

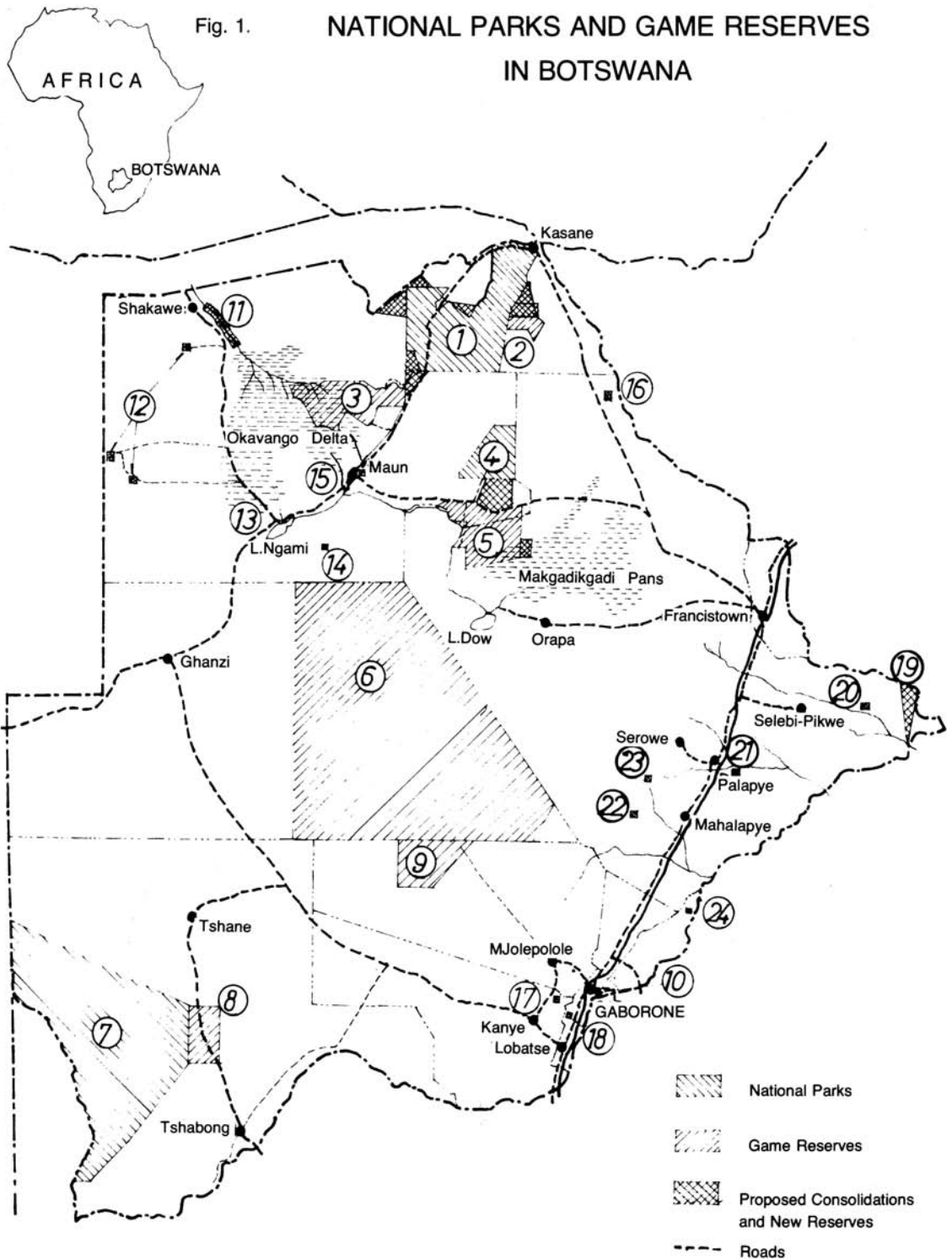
The next decade will be decisive whether this laudable state of affairs will continue or whether the wildlife resource will be depleted and finally restricted only to formal conservation areas as it has happened in many other countries on the African continent. The government is fully aware of the significance of wildlife conservation and utilization and the necessity to integrate it into overall landuse planning.

The environment

Botswana is a flat, landlocked country of approximately 569 800 km², situated in the middle of the dry Southern African Plateau at an average altitude of 1 000 m. The majority of the country belongs to the South West Arid Zone. Approximately two-thirds of the country is covered by a deep layer of Kalahari sands of geologically recent wind blown origin. Surface water is restricted to the Limpopo watershed in the east, the Kwando-Linyanti-Chobe System, which forms part of the Zambezi system, in the north and the Okavango River and Delta in the north west. At one time both the latter have been largely infested by tsetse fly *Glossina morsitans*, which inhibited settlement by man and his cattle; the Okavango Delta is still largely infested by the fly. The Makgadikgadi Pans Complex formed in geological times a huge lake, but is now a salina only filled to a depth of a few centimeters during times of exceptional high local rainfall. The Kalahari covers two-thirds of the country, and is interspersed with numerous pans, round or elliptical depressions, and ancient river beds which emptied in wetter periods into

Fig. 1.

NATIONAL PARKS AND GAME RESERVES IN BOTSWANA



(1) Existing National Parks and Game Reserves

- 1 Chobe National Park (10 800 km²) est. 1961, elevated to National Park 1968.
- 2 Mikaelelo Game Reserve (360 km²) est. 1974.
- 3 Moremi Wildlife Reserve (3 880 km²) est. 1965, enlarged in 1976.
- 4 Nxai Pan National Park (2 100 km²) est. 1971.
- 5 Makgadikgadi Pans Game Reserve (3 900 km²) est. 1970.
- 6 Central Kalahari Game Reserve (52 800 km²) est. 1957.
- 7 Gemsbok National Park (24 800 km²) est. 1932, Enlarged and upgraded.
- 8 Mabuasehube Game Reserve (1 800 km²) est. 1971 to National Park in 1971.
- 9 Khutse Game Reserve (2 500 km²) est. 1971.
- 10 Gaborone Dam National Park (5 km²) est. 1975.
- 15 Maun Educational Game Park (5 km²) est. 1969.

(2) Proposed new conservation areas

- 11 Okavango River Front.
- 12 Tsodilo Hills, Aha Mountains, Kwihabe Hills.
- 13 Waterfowl Sanctuary Lake Ngami.
- 14 Kwebe Hills.
- 16 Tamafupajari Pans Complex.
- 17 Pataletsabe Hills and Mannyelanong Hills.
- 18 Mannyelanong Hill Game Reserve (pending gazettelement).
- 19 Shashe Elephant Reserve.
- 20 Lepokola Hills.
- 21 Tswapong and Mabeleapodi Hills.
- 22 Shoshong Hills.
- 23 Mokwane Hills.
- 24 Notwane – Limpopo Area.

the Makgadikgadi. The soil and vegetation of these pans and river beds are of a different type than the surrounding sandveld and are of vital importance to humans, wildlife and cattle for their survival in this harsh environment. Rainfall is varied and erratic, confined mainly to the summer (November to April), declining from an average of 650 mm in the north east to under 200 mm in the south west. Shrub and tree savanna vegetation types are dominant over most of Botswana.

Human population is low (approximately 1 person/km²); approximately 80% of the population is, however, confined to the areas of better soils and more reliable rainfall in the east, and the fringes of the Okavango Delta, leaving large tracts of the country virtually uninhabited, save the few groups of nomadic bushman. Most people have a history of pastoralism, although the ownership of the national cattle herd is very skewed, i.e. a minority owns the majority of cattle. Subsistence arable agriculture is very small and mostly confined to the more suitable soils.

Wildlife utilization has played and still plays a significant role in the life of the people of Botswana. In times of catastrophic events such as rinderpest, foot and mouth disease or drought, the rural population has turned to wildlife as a means for support. In the rural areas wildlife still is a significant factor for the provision of protein and cash, although there is a noticeable trend away from purely subsistence hunting to commercial exploitation of the resource.

Policy of wildlife conservation

The policy for wildlife conservation in Botswana has to match government's four objectives for development of the country: rapid economic growth, social justice, economic independence and sustained production. Rural development and the raising of the standards of living in the rural areas is and integral part of this policy. Policies for the conservation and utilization of the wildlife resource follows therefore from the above, and they can be summarised as such:

- (i) the establishment of national parks and game reserves to protect and conserve a cross section of all species and habitats occurring in Botswana;
- (ii) complete protection of rare and endangered species;
- (iii) the implementation of rational and realistic conservation measures outside established conservation areas as a condition for optimum utilization;
- (iv) to provide adequate and relatively cheap hunting for the rural population who still depend to a significant degree on wildlife for their day-to-day living;
- (v) to optimise the financial returns from non-resident recreational hunting;
- (vi) to encourage non-hunting photographic tourism to reduce the dependence on non-resident hunting as the major revenue earner; and
- (vii) to educate all strata of society of the value of wildlife conservation, and that its utilization should benefit all.

The status of conservation in Botswana

Currently approximately 17% of Botswana enjoys national park and game reserve status, comprising four national parks and six major game reserves (Fig. 1). The national parks and game reserves system covers adequately all major habitat types in Botswana, although none of these constitute ecological entities. It is the intention of the department to consolidate some of the existing national parks and game reserves to make for better and more meaningful conservation and administration. In addition a number of new sites have been identified (Fig. 1) for inclusion in the national parks and game reserves system, primarily on the grounds of their scientific, cultural or scenic values.

The dichotomy of conserved areas in Botswana is the result of historical and political reasons, i.e. national parks may only be established on stateland or any other land donated or bequeathed for this purpose to the president through an act of parliament. The National Parks Act of 1967 provides total protection to the entire environment of a park. Game reserves are established under the Fauna Conservation Proclamation of 1961 by the President on advice of cabinet after

consultation with the local authorities. In a strict legal sense game reserves provide only protection for vertebrate animals as no mention of any other environmental features are made; in practice, however, they also provide protection for the entire ecosystem.

In 1976 it was decided that the National Parks Act should apply to all game reserves after their elevation to national parks status, regardless whether they are situated on state or tribal land. In this way more permanency in tenure and an uniform approach to management and development of all conserved areas will be achieved. As a number of new sites will not qualify for national park status, the introduction of a new category of reserved areas is contemplated. *Nature Reserves* will be designated those areas which warrant formal conservation status for various reasons, although they do not qualify for national parks status. Certain activities will be permitted as long as they are compatible with the purpose for which the reserve was established.

Recognising the potential conflict between conserving an ecosystem and its development for tourism, all national parks and game reserves are being zoned in the following categories: Wilderness area, low, medium and high density tourist areas; each of the four categories will be managed differently, according to their classification.

The Fauna Conservation Proclamation of 1961 makes provision for the gazetting of rare and endangered species as conserved animals which may not be hunted except in the case of defence of life and property. Table 1 lists all currently conserved animals. The white rhinoceros is the

TABLE 1

Conserved animals in Botswana

Antbear	All Cranes
Aardwolf	All Eagles
Black-footed Cat	All Egrets
Brown Hyena	Fishing Owl
Cheetah	All Flamingoes
Civet	Hammerkop
Giraffe	All Herons
Hippopotamus	All Jacanas
Honey Badger	Kgori Bustard
Klipspringer	All Pelicans
Mountain Rheedbuck	Secretary Bird
Night-Ape	Spoonbill
Oribi	Stanley Bustard
Otter	All Storks
Pangolin	All Vultures
Puku	
Rhinoceros (Black and White)	
Roan Antelope	
Serval	
Vaal Rhebok	
Yellow-spotted Dassie	
Waterbuck	

only species which became exterminated during this century in Botswana and a re-introduction programme is well under way to re-establish the species.

Wildlife utilization in Botswana has two aspects, hunting by residents and non-residents and photographic tourism. Consumptive utilization of wildlife in Botswana can be separated in three categories:

- (i) traditional or subsistence hunting carried out by the local population and accounting for approximately 85% of the legal offtake ($\pm 15\ 000$ animals in 1975). The financial return to local or central government from this type of hunting is small, but the significance has to be seen in the socio-economic context of a rural population;
- (ii) superimposed on traditional hunting is non-resident and resident recreational hunting, which accounts for approximately 83% of all direct revenue accrued from wildlife utilization; and
- (iii) an industry utilising the trophies, hides and skins of wild animals is well established in Botswana and benefits from the hunting activities.

The most recent development is the emergence of non-hunting photographic tourism centred around the national parks and game reserves, primarily in northern Botswana. Currently 31 tourist operators conduct tours in Botswana, ranging from the more luxury type to the "do-it-yourself" arrangements.

For the purpose of recreational hunting, Botswana is subdivided into 40 Controlled Hunting Areas (CHA) of which presently 13 are leased as concession areas to four safari companies. The remainder of the CHA's are open to booking by residents as non-residents are only permitted to hunt through a safari company. Annual quotas are being set by the Department of Wildlife, National Parks and Tourism in consultation with the local authorities for each Controlled Hunting Area.

Residents and non-residents pay C.H.A. booking fee (R10 and R50/week/hunter respectively) while tribesmen or stateland residents hunting in their areas are exempted from paying booking fee. After purchasing a general game licence (R50 for 4 animals for non-resident and R3 for 7 animals for a resident) the hunter may obtain supplementary licences which vary between R1 to R10 for a resident and R5 to R200 for a non-resident. Protected species (lion, leopard, sable and eland) command the same fee both for resident and non-resident (R500, R300, R250, R120 respectively).

Hunting regulations for tribesmen and stateland residents are complicated and the numbers of animals made available on a licence and fees vary considerably from area to area, due to historical and political reasons, introducing a measure of discrimination between citizens of Botswana, depending where they reside. Recognising this fact, the Department is presently drafting regulations to introduce a unified

Hunting System, differentiating basically only between residents/citizens and non-residents.

Recreational hunting, conducted through safari companies, has proved to be the most lucrative and easily to administer form of wildlife utilization in Botswana, and it is the intention of the Department to continue this aspect of hunting, modifying it in such a way as to optimise the returns of the country and make the best possible use of the wildlife resource.

Recognising the need to diversify the utilization of wildlife, encouragement is given to the development of non-hunting photographic tourism. The greatest asset Botswana can offer to the wildlife viewing tourist is the unspoilt wilderness of her national parks and game reserves, and Botswana therefore encourages high price/low volume tourism. No permanent and costly tourism infrastructure is developed in the conserved areas, apart from an essential road network. Development of the more luxury facilities is, however, encouraged through private enterprise outside the national parks and game reserves.

Wildlife utilization contributed R427 144 in direct revenue to local and central government in 1974, while the annual economic contribution of the wildlife based industry amounted to R3,7 million after deduction of all overheads and costs.

A detailed knowledge of the ecology and biology of the habitats and species is a prerequisite for rational conservation and utilization of the wildlife resource, and since its inception the Department has encouraged wildlife research. Owing to the lack of finance and trained manpower in Botswana, most of the research has been financed and carried out by outside research workers and donors. The Department has initiated most of the projects, and co-ordinates and supervises them, in order to obtain the necessary information for the proper conservation and utilization of the wildlife resource. The research projects range from ecological surveys of important wildlife areas, the monitoring of seasonal distribution and abundance of major wildlife species, to more detailed studies of individual species for management and conservation purposes.

Wildlife forms an important asset to Botswana and its integration in the overall development is essential if wildlife is to survive in meaningful population in the country. The recently introduced Tribal Land Grazing Policy calls for a major input into landuse planning on a regional and national scale. Agreement has been reached for the establishing and gazettement of wildlife management areas in which wildlife utilization will take preference over any form of landuse, and detrimental and competing landuses may be prohibited. It is anticipated that some of the areas will eventually be given over to other forms of landuse, but pending detailed assessment and evaluation for their ultimate use, their productivity is conserved. The involvement of the Department in the landuse planning process is assured through the various regional and central landuse planning committees.

The conservation of wildlife in Botswana for posterity will only succeed in the long run if the human population effected by the conservation measures accepts those as valid and reasonable. The education of all strata of the population to the value of wildlife conservation, in terms of financial as well as ethical and aesthetic benefits, is therefore of a paramount importance. The Department has, with the assistance of outside donors, embarked on an education programme, aiming at the various groups of the population, and using all available media, to bring greater awareness of the importance of conservation to the people.

The Department is hampered in the effective execution of its duties and responsibilities by the lack of appropriate funds and trained manpower. The current worldwide financial crisis does not help to alleviate the situation in the near future and it is therefore necessary to continue as best as possible with the available resources. Recognising the need for more appropriate training for the field staff to increase their efficiency and morale, it is hoped to establish in the near future a training centre in Botswana, while medium level staff will continue to receive training at the college for African Wildlife Management in Tanzania.

Future prospects for conservation in Botswana

Botswana is fortunately not as much plagued by overpopulation and scarcity of land as many other African countries. Development during the last decade has been gradual and the ecological impact on the environment has not been too severe as a result. Government is aware of the fragility of most of Botswana's environment and the risks involved in large scale modification to it. Various legislation has been passed in the last few years relating to the conservation and wise use of the natural renewable resources. The Tribal Land Grazing Policy attempts to arrest the uncontrolled spread of low management cattle raising at the expense of the land and introduce forms of mangement assuring sustained production, raising at the same time the standard of living of the rural population. Wildlife has been recognised as a significant factor in the economy of the country, and the necessity of its integration into the overall landuse planning process is accepted. Botswana has at the present stage of the development, still most options open to make rational landuse decisions, insuring that wildlife will not be restricted only to conservation areas, but continue to roam freely in many parts of Botswana in the future. It is not unrealistic to expect that Botswana may be one of the few countries where wildlife conservation and utilization will complement rather than compete with other, more conventional forms of landuse.

Conclusion

During the last 10 years Botswana has developed a viable National Parks and Reserve System, covering 17% of the country and giving conservation to a cross section of all major habitats. A hunting system has been developed where the rural population enjoys cheap and generous licences and still permitting a lucrative non-resident hunting industry based on safari companies. Non-Hunting Photographic Tourism is emerging as an additional form of wildlife utilization, attracted by the wilderness the visitors can experience. There is growing recognition of wildlife as an alternative and complementary form of landuse, and the regional and national landuse planning exercise attempts to integrate wildlife. Considering the limited resources available to Botswana for the conservation of wildlife and its rational utilization, the results of these efforts are remarkable. Botswana has reached a stage of her development, where still many options remain open for continuous and increased efforts to conserve wildlife for future generations, as an integral part of the country's development process.