

## THE STATUS OF WILDLIFE AND WILDERNESS AREAS IN EAST AFRICA

GEORGE A. PETRIDES, PH.D., *Professor, Department of Fisheries  
and Wildlife, Michigan State University,*

and

WENDELL G. SWANK, PH.D., *Assistant Director, Arizona Depart-  
ment of Game and Fish, Phoenix, Arizona ; U.S.A.*

In 1953–54 the senior author worked with the Royal National Parks of Kenya in making ecological studies and in surveying the position of the wildlife resource and the national parks in that country (Petrides, 1955, 1956). In 1956–57 both of us undertook similar work in a neighbouring territory Uganda, under the sponsorship of the Uganda National Parks and the Uganda Game Department (Petrides and Swank, 1958). These studies were under Fulbright research awards of the United States government. In addition, visits *en route* were made to all major countries, from Capetown to Cairo, in the eastern half of Africa. Most important national parks and game areas were seen.

Upon last returning to the United States, the senior author reported to the American Committee for Wildlife Protection, meeting in New York on 10th January, 1958. At that time, it was hoped that conditions for wildlife might improve considerably in East Africa, because the great economic value of the wildlife resource and the biological problems connected with its preservation seemed to be more widely understood than formerly. Because of this hope our report was not then published.

But the content of the New Game Policy for Kenya (Colony and Protectorate of Kenya, 1959), is one of several evidences which indicate that governmental action is discouragingly limited, even in an otherwise progressive part of East Africa.

After the senior author's 1953–54 experience in Kenya, his report (Petrides, 1955), predicted that unless policies were changed, most of the spectacular herds of hoofed animals would be exterminated along with their predators within 25 years. Five of these years have now gone by and there seems to be no basis for greater optimism than there was then.

There have been several progressive steps taken, to be sure. The Kenya and Tanganyika Wild Life Societies have been organized and, supplementing official agencies, these groups

(the first one directed by N. M. Simon) are vigorously promoting wildlife preservation. The conception of the Galana river scheme for wildlife management and controlled game harvests on a limited area of tribal lands (Simon and Treichel, 1959)—previously called the Waliangulu scheme—has great merit and the idea, if supported adequately, could set a significant precedent. Dr. F. Fraser Darling has completed his survey of the Mara region of Kenya and it can be hoped, at least, that his sensible suggestions for preservation of this outstandingly valuable area will be accepted. The additional American Fulbright Scholars, Drs. H. K. Buechner, William Longhurst, Irvén Buss, Horace Quick, and Harold Heady, and National Science Foundation Fellows John Emlen and Lee M. Talbot, along with Conservation Foundation Fellow George Treichel and North American Wildlife Foundation Grantee Bruce Wright, have undertaken researches into native faunas and habitats.

In the Kenya national parks, Mr. M. H. Cowie and his staff, with the co-operation of former Game Warden Hale and his workers, have undertaken all out poaching control efforts and have overpowered organized game destruction. This pressure against poachers evidently is being continued. Furthermore, in the Uganda National Parks, Chairman of Trustees R. L. E. Dreschfield, former Director R. M. Bere, and their colleagues have acted courageously in taking necessary action to maintain a natural relationship between large animals and their habitats in the two wild areas in which hippopotami and elephants are making their last stands in the country. The Uganda Game Department, directed by Major B. G. Kinloch, has established a new game reserve and has procured the services of East Africa's first game biologist, Allan Brooks. And faunal research under governmental sponsorship is planned for Kenya, albeit also on too small a scale.

But it should be noted that no new land areas have been dedicated for the preservation of East Africa's game herds (the Galana river game management effort in Kenya and the Kidepo Game Reserve in Uganda are not areas devoted to wildlife) and no improvement toward the permanency and adequacy of present areas has been undertaken. The recent readjustments in the boundaries of the Serengeti National Park have not provided for the year-round inclusion of animal populations there, as evidenced by the studies of Grzimek and Grzimek (1960). In Kenya, Northern Frontier areas have been drastically reduced (or proposed for reduction). Yet during the last five years, human populations have increased by at least a

quarter million in Kenya with comparable expansions in numbers and land occupations occurring elsewhere in East Africa (United Nations, 1958). These changes, of course, have caused further pressure on wildlife and wildlife lands throughout these territories.

Talk of progress and scientific recommendations toward progress are becoming more common. But there seems to be little, if any, progress on the land. In fact, it seems doubtful if the wildlife resource is even holding its own in East Africa. There is little to show that it is and much to indicate that it is not.

The Kenya policy report makes a notable step forward in recognizing publicly and officially the economic and cultural values of the wildlife resource. While stating favourable policies, however, the report turns down important recommendations of the Game Policy Committee which implement those policies. Lack of finances was the common reason for rejection of most recommendations, even though the recommendations themselves were generally very modest. (Actually a number of recommendations, especially those affecting the spectacular Northern Frontier and Amboseli regions, were so restrained that the sizes of the areas proposed were entirely too small to serve as permanent displays of wild plants and animals.)

It cannot be overlooked that many years of effort have gone into wildlife preservation in East Africa, by the officials mentioned above and by many other people, resident and non-resident, in government service and outside it. The present national park systems and game management organizations in the several territories are their monuments and what hope there now is for the preservation of East Africa's wildlife heritage is due to their foresight and dedication in establishing and maintaining the integrity of these areas. We do not intend to disparage the excellent work of all these people. Rather, we wish to encourage others to support them.

Combining our periods of residence, we have lived three years in East Africa. We have a strong affection for these territories and their peoples. The many difficulties of administration in East Africa today (as the London Conference progresses) are, it is hoped, rather fully appreciated. Problems in national and world affairs are real and immediate. Under stress, it is understandably easy to defer action on wildlife preservation in the hope that "conditions" will improve. Saving East Africa's magnificent and unique wildlife displays, however, is a matter of international significance and of immediate priority. What is saved now, probably is all that will ever be saved (see Brower, 1959).

It is recognized that public budgets in East Africa are necessarily unpretentious. Financing, however, to a considerable degree, is a matter of priorities. In this case, it involves not so much the spending of money as it does the perpetuation of income.

The spectacular herds of wildlife are cultural treasures far more valuable and irreplaceable than man-made objects. The few remaining truly wild areas, and the African and world communities which would benefit from them, deserve broad and progressive planning for the perpetuation of a unique and useful asset. It is a resource for which future generations of East Africans could give thanks to far-seeing and courageous planners now in responsible positions, if they act in time. Someone, regardless of race, is needed to step forward and become the leader—the Theodore Roosevelt, if you will—of a movement to manage East Africa's natural resources on a sustained, and hence on a sustaining, basis.

In hope of stimulating demand for governmental action, the report of 1958 to the American Committee is offered here as a matter of our summarized observations and beliefs. Apparently the most significant change is the need for even greater urgency. We are grateful, however, for reviews of the present paper by Dr. Harold J. Coolidge of the U.S. National Academy of Sciences, Noel Simon of the Kenya Wildlife Society, Dr. F. Fraser Darling of the Conservation Foundation, and Lt.-Col. C. L. Boyle of the Fauna Preservation Society and for their several helpful suggestions. The present situation, as we see it, which now faces local administrators and game and national park authorities, is given below. It applies primarily in East Africa, but quite widely throughout the African Continent also.

#### THE PRESENT SITUATION

(1) *Wildlife populations are rapidly decreasing in East Africa.*—If present trends continue the thrilling herds still remnant in some areas may not survive the next 10–20 years.

(2) *Wildlife preservation and wilderness preservation are closely linked in East Africa.*—Wildlife cannot exist without its habitat and the habitat without its fascinating large animal inhabitants is a meagre display. Because of their large food requirements and sometimes considerable movements, big game habitats must be on wild lands. From the standpoint of game-viewing, open lands are best. These are scarce naturally, and becoming scarcer. The short-grass plains on which game is most spectacularly displayed are being rapidly overgrazed and eroded.

(3) *Human populations are rapidly expanding.*—Cities are growing through expanding industrialization; cultivation is increasingly intensive and is expanding into new territories wherever rainfall permits; livestock have been freed of diseases and other controls and grazing in many areas is far exceeding proper limits, turning grasslands into semi-deserts and deserts, over wide districts. Fishing industries, irrigation schemes, water power developments, mining concessions, and highway extensions further contribute directly and indirectly to the limitation of lands available to wildlife. Tsetse fly control whether through direct game slaughter, bush clearance, or livestock inoculations, nevertheless ends in a transfer of wild lands to livestock pastures. Forests are scarce and dwindling; wild areas of all kinds are increasingly occupied by man. The United Nations forecast is for a 23 per cent increase in Kenya's population in the next 15 years and other East African nations are increasing similarly.

(4) *Wherever humans occupy the land, hunting follows.*—Low human populations with primitive weapons may not be seriously destructive to game. Nowadays, however, African hunters have increased, steel cables are being used for snares, muzzle-loaders and even modern rifles are becoming frequent. Arrow poison, too, is being distributed more widely in some regions, and the old methods of drop-spears, pits, nets, wheel traps, ring-fires, and hand spears are made more effective through organization, the construction of tremendous thorn fences, and the barricading of water-holes. Former tribal customs which protected certain animal species and areas have largely broken down. And, perhaps most important of all, improved transportation has made organized widespread poaching profitable.

(5) *A great many Africans in East Africa have never seen an elephant or a lion.*—These are Africans of urban and agricultural areas and they are intensely interested in big game, if given an opportunity to see even stuffed animals. On the other hand, in rural districts probably not one in ten thousand Africans has any considered interest in wildlife or wilderness values except as they produce meat. (The words for meat and animal are identical in Swahili and many other African languages.) There is a great need for Africans from both heavily settled and lightly populated districts to be educated in the real values of natural areas. Much encouragement from African leaders and from colonial and international authorities is essential if wild areas are to survive in Africa until the average resident is educated to appreciate them. The trend away from tribal ways and toward greater

political freedom, expanded industrialization, and an improved standard of living cannot be denied. But it would be tragic if national resources and cultural assets are destroyed in the process. Increased educational efforts must bridge the gap between present inclinations and future needs.

(6) *Real efforts toward wildlife preservation are undertaken mostly on lands designated as either game reserves or national parks.*

(a) *Game reserves.*—(Sanctuaries) have been established in some numbers but the protection given wildlife is almost entirely against hunting. Yet this is only one factor affecting the welfare of wild animals. Game reserves ordinarily do not prevent settlement, cultivation, grazing, woodcutting, or similar activities. There has been little legal recognition that habitat protection is needed by wildlife or that native occupation produces any detrimental results other than poaching and (often effective) cries for game control. Some of the areas on which game is most spectacularly presented, as at the foot of Mt. Kilimanjaro, are very seriously threatened by land misuse. Worst of all, game reserves are usually prominently displayed on maps, giving the widespread impression that the animals are adequately cared for, whereas often these lands are over-utilized tribal grazing areas.

Game is not hunted in a game reserve. If game does not increase on a reserve then "obviously" hunting cannot be allowed; if it does increase, then this is interpreted to mean that protection from hunting has been helpful and, therefore, is a policy to be upheld. Where reserve lands are suitable for tourist and other wildlife-viewing functions, prohibition of hunting, perhaps seasonally and where in conflict with visitor attractions, may have some merit. On the other hand, hunting is not only a sport for some tourists but it enhances the values of wildlife-viewing for non-hunters who like to feel that they are not in a "tame" area. On these or other reserves, controlled hunting, available to local Africans, certainly would increase African interest in the maintenance of a wildlife supply. In our opinion the present game reserves should be managed either for game-viewing or for hunting and therefore should be re-designated either as national parks or as public controlled-hunting areas and the appropriate management procedures undertaken. In their present form, they serve neither purpose adequately and have no permanent values.

(b) *National Parks.*—Some few areas have been set aside with plans for permanent preservation of the living fauna and

flora. They are pitifully few in number and in several important cases are too small in size. Cultivation, grazing, fishing villages and other activities and settlements are not yet entirely controlled in these areas, though some of their detrimental effects are recognized. Poaching is a recurring and general problem. In some park areas, such large species as the elephant, rhinoceros, and lion have been reduced to dangerously low levels (Simon and Treichel, 1959).

Large predatory animals, especially the wild dog, also frequently are less common even in national parks than under original natural conditions (Petrides and Swank, 1958). In parts of a few parks, large herbivores have increased or become concentrated to levels which endanger their forage supplies, but just as frequently, even in the few areas remaining for wild animals, original levels of abundance even of herbivores have not been attained.

(c) *Designated Forest Lands.*—To some degree, game is protected on these lands, but they are limited in extent and where conflicts develop between game and forest management, forestry has priority.

#### AN ANALYSIS

(7) *The values of African big game and wilderness areas are international.*—The entire world will be the loser if the unique African big game fauna fails to survive in sample areas, at least, of its special habitats.

(8) *If wild animal populations are to survive and if wild lands and vegetation are to be preserved in Africa, special areas must be set aside for that purpose.* They need not be many in number but they must be properly planned and be permanent. Hoofed and predatory animals cannot compete with land uses which appreciably alter their habitats and neither can cultivation nor grazing succeed where significant damage from large wild animals regularly occurs. Two main types of establishments seem warranted: (1) national parks, and (2) public (or tribal) game production areas.

(9) *National parks are directed primarily for wilderness preservation in all its aspects* (while game management areas are planned for maximum sustained yields of game animals). National parks and similar natural areas, where properly constituted and managed, have real values which have not been sufficiently advertised:

(a) *Cultural.*—These areas serve as living museums, permanently preserving the flora and fauna amidst the display of

natural forces that have moulded them. These are samples of the original wilderness, maintained for the enlightenment and enjoyment of laymen and scientists of present and future generations. Here, in East Africa, the Pleistocene mammals still live.

(b) *Economic*.—Fortunately, national parks are of primary importance to the valuable tourist trade. In Kenya and Uganda tourists are, respectively, the third and fourth most important source of outside income. And this income is to a very large extent assignable to the attractions of wildlife and national parks. The income from natural areas in East Africa probably brings a greater economic return per unit of area than would any other use to which the land could be put. And the income may be considered as profit since the low costs involved generally are more than covered by other benefits. Wildlife and tourism thus should be considered one of these nations' most important "crops", and national parks may be judged as some of East Africa's most productive acres.

(c) *Recreational*.—Natural areas provide enjoyment as well as education for the country's residents. That is beyond the benefits of the promotion of foreign tourism. In natural areas where hunting is maintained as a natural force, this sport may provide relief from the tensions of political activity and increasing civilization, as it does now for residents in most highly developed countries.

(d) *Food*.—In some areas, it may be necessary to substitute for natural conditions (or to return to them) by permitting controlled hunting. This may be desirable especially in areas which are relatively small and isolated units, as a result of lowered predator numbers and fewer humans hunting by primitive means. In such areas and in others where managed hunting is deemed not harmful to other values, a meat crop could be harvested which could well exceed that available from livestock.

(e) *Genetic*.—Important germ plasm resources are preserved which might otherwise be threatened with extinction. Wild strains of domestic grains often are required by plant breeders. New animal species, especially for arid areas, may be available for cross-breeding or perhaps even for domestication. Certainly some new plants may be useful for food or ornament. These organisms may be required in the future and may be available only where widespread overgrazing and other



misuses of the land are not prevalent. (As an example of unforeseen further values of wild animals, the antlers of deer have been found to concentrate strontium 90. In consequence, deer antlers are now being used in studies of atomic fallout to provide comparisons with strontium 90 values for antlers collected in earlier years.)

Poaching must be limited. Yet herbivores cannot be allowed to increase beyond the carrying capacity of their range. Neither can the vegetation be allowed to be over-protected in the sense that all fires, and other natural occurrences which tend to regenerate early successional stages, are excluded. Predator populations must be maintained at natural levels if the total scene is to be preserved. In brief, some management may be required in national parks if these few remaining samples of original wilderness are to be preserved with native plants and animals in their original relationships.

(10) *Areas devoted to game production for meat, recreation, and tourist income through hunting, should be established, in our opinion, to supplement a national park programme.*—Wildlife preservation may be accomplished either through (1) a programme emphasizing wilderness preservation and wildlife-viewing, with scenic, cultural, and other returns as in national parks, or (2) a system of game production areas in which habitat preservation would be a requirement for sustained harvests through either sport or market hunting. National park management emphasizes the maintenance of natural plant and animal communities, while game production units may permit management of any and all factors which control the production of important game species. The latter programme provides for a different stimulus for wildlife preservation and serves, to a degree, as insurance against failure of the national park approach in a politically-uncertain environment. Where national parks permit hunting and where managed game areas strive to maintain natural habitats, and predators as well as prey, the two systems approach each other. It may be feasible in some circumstances to locate game production units on the borders of national parks to reduce excessive park animal populations as they move across park boundaries, if they do make such movements and if hunting can be carefully controlled.

There are now available tsetse districts, some currently forbidden to settlement and some unoccupied by choice. Many of these will very soon be occupied as tribal lands. These are the last truly wild lands in East Africa. Unless some can be set aside

as managed game production areas, they will either be divided for individual ownership or given over to destructive livestock grazing. Some few of these areas should become national parks, but others could well be managed primarily for game production, saving the cost of tsetse clearance and preserving wilderness values. Strong local administrative support, available in some districts at least in 1957, is required. All game harvests should be undertaken only on a selective basis, as determined by professional wildlife ecologists. Financial returns should be made to the local people from the income resulting from both national parks and game-ranching.

(N. M. Simon, in a personal letter, states that the Director of Agriculture recently advised the Kenya Legislative Council that African pastoral areas in that country on the average do not produce over three shillings profit per acre per year. Wildlife production can be expected to exceed that sum by a considerable amount, given the opportunity and reasonable management. And in semi-arid and arid areas especially game can survive where domestic stock cannot.)

(11) *Time is not on the side of wilderness preservation.*—Human population pressures will certainly increase tremendously and political aspirations may well tend to overlook game and wilderness values in favour of industrial development. At present, tsetse-infested districts are available which can be converted from liabilities into wilderness assets through proper planning. Furthermore, much of Africa is arid or semi-arid bush and grassland. Widespread overgrazing is now converting huge districts into thornscrub and desert. Planning for controlled grazing, which takes wildlife into account, is essential. Intelligent national land use planning is necessary. This should include game and wilderness areas as distinct forms of land use. Wildlife and livestock should be considered as separate but similar and competitive resources.

### *Suggestions :*

(12) Authorities in East Africa, including African leaders, should :

(a) Recognize that East Africa is some of the best of Africa from the tourist viewpoint but that much of its character and considerable tourist income will be lost if further wildlife depletion occurs.

(b) Recognize that wildlife preservation depends on habitat preservation as well as on poaching control and that big game preservation requires suitable areas set aside primarily for that purpose.

(c) Recognize that game reserves and national reserves as now constituted do not provide for adequate wildlife habitat protection, and frequently they are detrimental to the cause of wildlife preservation in that they imply such protection.

(d) Recognize that wild animals can be managed and harvested as a permanent resource and that total protection in the wrong situation not only may be unnecessary but may be detrimental to both the animals themselves and their habitats.

(e) Review current land use programmes on a national scale in each country and plan now for national parks and game production units as distinct forms of land use. A few large, scenic, properly-planned, and permanent areas are better than many without these qualities.

(f) Undertake a complete review of the economics and biology of the tsetse control programme in light of the value of tsetse areas to both tourism and game production.

(g) Recognize the widespread prevalence of livestock overgrazing and erosion and its effects on soil, moisture, vegetation and wildlife, and act to establish proper control.

(h) Recognize that only wild-land dwellers in Africa have seen much wild-life. Undertake the education especially of urban Africans, but also of those living near wild areas, in the cultural and economic values of wilderness areas. Make them aware, perhaps through motion pictures as well as other media, that all civilized countries maintain natural areas. Undertake sponsored bus trips to national parks and game areas for urban and farming groups.

(i) Provide for local participation in national park or hunting-area operations and for fair and adequate financial returns within local communities and districts.

(j) Establish (perhaps co-operatively with scientists from other countries) research on wildlife and wilderness preservation on a scale commensurate with the importance of the resource.

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## NOTE

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