Elephants Hit by African Arms Race

Recent Factors Affecting Elephant Populations

Recent reports from the field present a mixed picture of elephant status:

- A massacre of elephants has been reported in the Sudan, with an estimated 12,000 killed per year.
- An aerial survey in Garamba National Park, Zaire, has shown that the elephant population has dropped by 64% in six years.
- Zimbabwe's national elephant estimate has increased from around 30,000 to 40,000 and a record cull is planned to control the elephants' population growth, and bring money to the people.
- Elephant poaching has broken out in the Kruger National Park and 137 elephants have been shot by poachers armed with Kalashnikov rifles, in a formerly inviolate sanctuary.
- Ranchers have complained of too many elephants in the Laikipia ranching area in Kenya. Numbers have swelled immensely in the last 10 years, although in the country at large the national elephant population fell by more than half between 1970 and 1977.
  In Ruaha National Park, Tanzania, elephants have increased at a rate of 12% per annum from 1973 to 1977 and pose a danger to the baobab trees.

With reports coming in like this, the general public may be forgiven for feeling a little confused about the real elephant situation in Africa today, Can elephants be overpopulated, and at the same time seriously endangered by poaching? Experts disagree among themselves as to the importance of the ivory trade versus the effects of human population growth.

Because of the danger of polarization of views, there is a need for an overview. Now as more reports come in, and in order to stimulate thought and discussion, I have plotted an index of some of the principal factors affecting elephants, showing the rates of change. These factors include the price of ivory, world inflation, human population growth, and two measures of the arms race: arms imports and men in the armed forces. The by-product of the arms race is poachers armed with automatic weapons.

The ivory price index from 1960 to 1978 in Figure 6 is derived from ivory prices of the leading importing countries, mainly Japan and Hong Kong. The inflation index is for the GDP of the OECD 24 leading industrialized nations including most large ivory importers, and is derived from figures supplied by Morgan Grenfell Bank. Data on the arms race (Figure 7) have been summarised in East Africa from US Arms Control and Disarmament Agency statistics.

It is argued here that the elephant situation in the sixties was radically altered by two main factors: an increase it he price of ivory on the world market, itself a by-product of inflation; and an increase in the availability of automatic weapons in the hands of poachers, a by-product of the arms race, wars and civil strife. East Africa is used as an example here, but the problem is continent wide.

THE 1960's SCENARIO

In the 1960's, the main problem of elephants in East Africa was one of overcrowding within the National Parks, with woodland destruction. Elephant densities were thought to have increased through the alienation of their range as an expanding human population put more land under cultivation around the protected areas. Classic examples were the Murchison Falls National Park in Uganda and the Tsavo National Park in Kenya, but many more abounded. In the sixties, the ivory price kept broadly in line with the rate of inflation for the first eight years. There was only a slight rise in the ivory price from 1960 to 1966, at which point it exceeded inflation by a factor of 1.27, but then dropped back to match inflation by 1968. The arms race had hardly begun.

THE 1970's SCENARIO

In the 1970's the scenario for elephants changed dramatically. The ivory price increased, and African countries entered an explosive arms race, accompanied by civil disturbances, wars, and guerilla campaigns. The importance of these latter aspects on elephant population dynamics has perhaps been hitherto u underestimated.
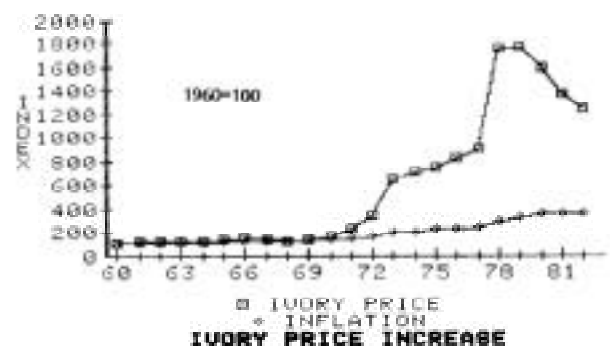

Figure 6

Ivory price

From 1969 to 1978 the ivory price climbed rapidly from $ 5.77 to $ 74.42, at which point it exceeded inflation by a factor of 5.9. Since then it has dropped to $ 52.8 in 1982, but the ivory price index in 1982 still exceeded the inflation index, by a factor of 3.5.

It follows that the price incentives to obtain and sell ivory throughout the seventies up to the present have increased by a similar factor, especially in African countries with an acute shortage of foreign exchange and rapid inflation (Kenya 11%, Zaire 30%, Uganda 28%). Of all the factors considered here the ivory price has increased the most.

The Arms Race

In the decade 1971-1980 Africa registered the largest average annual rate of increase in arms imports as compared to the other regions of the world; a low volume of $ 500 million in 1971 contrasts with a volume of $ 4.5 billion in arms imports in 1980. Military expenditure in Africa during the same period increased on average at a rate of 6.66% annually, in real terms adjusted for inflation. Although these increases do not refer directly to automatic rifles there is no doubt that these rifles were part of the modernization process and multiplied accordingly.

In Eastern Africa, Somalia armed in the early 70's in preparation for the Ogaden war, and the Ethiopians armed in response. Uganda armed at the same time under Amin, Tanzania armed in response, and Kenya followed suit. Sudan also armed in response to Libyan interference.

Armed forces in the region increased as follows:

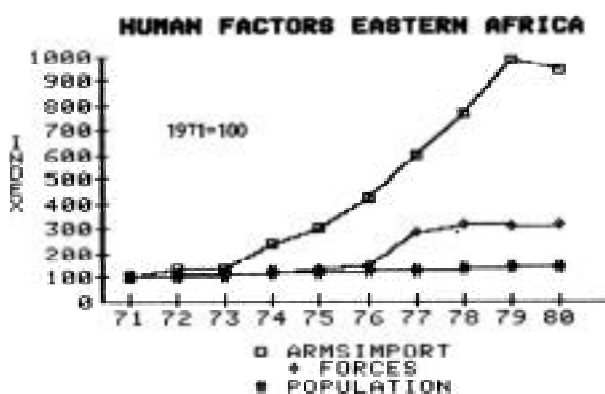|	1971	1980
Ethiopia	45,000	240,000
Kenya	7,000	16,000
Somalia	20,000	54,000
Sudan	35,000	68,000
Tanzania	20,000	57,000
Uganda	14,000	6,000
	141,000	441,000

Figure 7

It would be reasonable to assume that the number of automatic rifles is closely related to the number of personnel in the armed services. During the decade there has been a more than threefold increase in the number of men serving in the armed forces in the region.

The next step to explain is how the arms get into the hands of poachers. In some countries, for example Uganda and Sudan, elements of the military themselves were the main poachers, whom the lightly armed and outnumbered Park Rangers were powerless to oppose. In others, weapons were lost, stolen, taken from defeated soldiers, looted from armouries, issued to people's militias, channelled secretly to guerilla movements, or simply traded by soldiers for money or goods.

Proliferation was also increased by wars and civil strife. For example as Amin's power weakened, the Matheniko clan of the Karamajong tribe attacked and overwhelmed the police barracks at Moroto. In this raid they looted the armoury and carried off 12,500 automatic rifles, 1.5 million rounds of ammunition, and numerous rocket propelled grenades and other munitions. The Jieh clan also participated in this haul.

The Matheniko and the Jieh clans then attacked other clans and accumulated stolen cattle. The market for these cattle and the loose guns spread, When one tribe acquired new weapons the others were under pressure to keep up or suffer defeat So a chain reaction of weapon acquisition was set off. From the Karamajong in Uganda the Toposa acquired rifles and took them to Sudan, the Turkana brought rifles to Kenya. The Pokot acquired them too as they were traded through the tribes. These nomadic peoples, transferred overnight from spears, bows and arrows to automatic weapons.

In 1979 retreating troops of Amin were eager to abandon their weapons and uniforms in order to avoid capture and execution. Where they could they sold their guns to villagers. The result was that the price of an automatic rifle dropped to a very low level. Their retreat back to West Nile Province, from where most of them came, lay through the Murchison Falls National Park. Hundreds of rifles came into the hands of local people in that area, and they began to poach.

Further in the east of the region a similar scenario unfolded. In the sixties and seventies the Somalis built up their army with the policy of extending their boundaries to include the Somali communities living in Ethiopia, French Somaliland and Northern Kenya. Somali "shifta" were responsible from 1970 to 1975 for reducing elephant populations along the Tana River and in the Lamu Garissa region of Kenya.

In the 1977 Ogaden war, a trail developed across Northern Kenya in the Mandera area, used by Somali insurgents on their way to and from the Ogaden. Inevitably some of these guerillas, who were probably not well disciplined, deserted or sold or lent their arms to others. The spin-off was that more loose guns wound up in the hands of the nomads.

It was not until this point that elephant poaching in Somalia itself got under way. Formerly, it had been reported that poaching had been virtually eliminated in the country. Then, Hassan Sheikh Omar of the Wildlife Department, wrote that elephant poaching had suddenly increased with the easy availability of automatic weapons, associated with the war between the Western Somalia Liberation Front and Ethiopia. In the five years previous to 1981, he estimated that over one half of the elephants of the country had been killed, and that in many areas this proportion had been surpassed. There were places, he said, where only one tenth of the elephants recently present now survived, and where the anti-poaching unit had found groups of up to 80 dead elephants lying where they had been fired upon.

To the south of the region, in Tanzania, loose guns have also increased. I found a group of 8 dead elephants in the Tarangire National Park on an aerial survey in 1977, indicating that automatic weapons had probably been used to kill them. In 1980 a survey made in the Arusha region revealed large areas where the only elephants to be seen were dead. In 1981 Tanzanian troops returned from Uganda, a country where the only law in force was the rule of the gun. When they came home some soldiers brought problems of ill discipline, of looting civilians, and of "losing" guns. Recently, unquantitative reports of widespread elephant killing have come from Southern Tanzania, but await confirmation by aerial survey. The next Tanzanian elephant population which arc candidates for collapse arc those living in proximity to poachers armed with automatic rifles.

At the end of the Sudanese civil war in 1972 many of the Southern Sudanese "Anyanya" guerillas were recruited into the army where they were issued with automatic weapons. With the recent civil disturbances in Sudan an anarchical situation exists in which elements of the army, government officials, ex "Anyanyas", and gangs of well-armed horse mounted Arabs have been involved in a free for all, which appears to have decimated every elephant population living in the south.

Although the examples have dealt with the East African region the problem is general within the elephant ranges

of Africa. Automatic rifles have been used to poach elephants in many other national parks: in Niokola Koba in Senegal, in Zakouma in Chad, in Garamba in Zaire, in Bamangui-Bangoran in CAR, in the Luangwa Valley in Zambia, in Wankie in Zimbabwe, in Chobe in Botswana and in the Kruger in South Africa, to name just a few.

Human Population Increase

Human population increase presents the most important long-term issue, through the expansion of agriculture or other intensive land management practices into the elephant range. This may be more rapid than population increase per se. The trend towards urbanization slows down the rate of human increase in the rural areas where the elephant's range is found, but nevertheless is expected to increase by 50% by the year 2000, and will inevitably compete with elephants for space. The rate of increase selected for the graph in Figure 7 is 4%, currently achieved by Kenya, with the fastest growth rate.

Recent elephant decreases, however, have not taken place in areas of high human population density, but in the rural areas of low human population density. Current levels of ivory production cannot therefore be ascribed to the immediate effects of the human population increase, such as competition for land or resources.
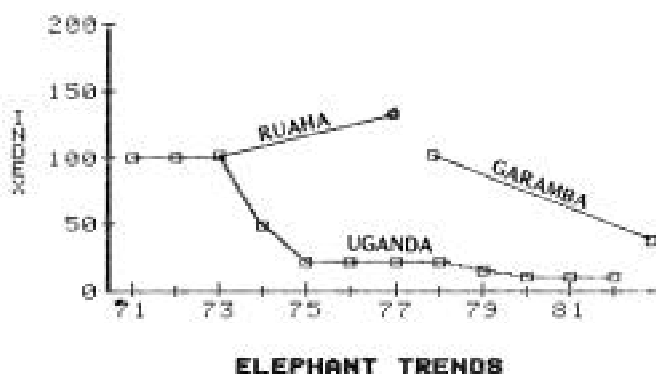

Figure 8

ELEPHANT TRENDS

I have selected only three elephant populations for the graph in Figure & those of the combined Uganda National Parks, and of Ruaha and Garamba National Parks.

The effects of automatic weapons on Uganda's elephants is probably the best documented case history of a catastrophic population collapse caused solely by poaching for ivory. Ironically it was here that it was first demonstrated in the mid sixties by culling teams that mass killing of elephants could be safely and efficiently accomplished using standard NATO automatic weapons. Likewise for the poachers, automatic weapons with their high rate of fire offered the possibility of more effective mass killing. Recent trends have been summarized in the previous newsletter, and have been documented from 1973 to 1976 in the scientific papers of Eltringham and Malpas.

The lowest point was reached in all three national Parks in 1980, and recorded in the WWF Aerial Survey, at approximately one tenth of the 1971 level. Since then, through equipping the rangers with firepower to match that of the poachers and supporting them with an adequate aid programme, the elephant situation has stabilized. Large numbers of automatic rifles continue to be recovered from poachers, especially around the Murchison Falls National Park.

Ruaha is an example of an elephant build up within a park by those factors outlined in the scenario for the 1960's. Southern Tanzania's elephants remained relatively unaffected by the effect of ivory poaching at least until the mid 1970's. Within the Ruaha National Park they built up by 8% per year between 1973 and the 1977 censuses. Barnes attributes this to external human pressures as well as "natural increase", Whether Ruaha has continued to remain immune to the general trend caused by the ivory trade can be resolved by further monitoring. Qualitative reports suggest that there has been a massive increase in elephant poaching in recent years.

Census data of scientific validity are few and far between, and often have followed in the wake of what have been called "unconfirmed reports and speculation"', For example in 1973 hunters alleged massive decreases in the northern districts of Kenya. These were not confirmed by aerial survey until 1977; in 1979 numerous allegations were made of "'elephant massacres" in the north of Zaire, not confirmed until Borner and Hillman made an aerial survey in Garamba in 1983 and found a 64% decrease; in Sudan elephant massacres were reported in the period 1980 to 1982, and these still have not been confirmed widely apart from one survey in Shambe, where high carcass ratios indicated heavy elephant mortality. The protected areas are usually the last to suffer declines. When heavy poaching begins elephant numbers usually increase within the National Parks, as in Ruaha. By the time a collapse is recorded within a park the worst has already happened long ago in the rest of the country.

CONCLUS IONS

In our overview of the factors affecting elephants we can consider their relative rates of change. The ivory price has increased twelve times between 1960 and 1982, whereas inflation has only increased by 3.5. In the decade of 1971 to 1980 arms imports in the East African region increased by 9 times and armed forces by 3 times, whereas human population only increased by 50% in the country of most rapid growth, Kenya.

From the Tsavo and Uganda Parks examples, we know that the apparently secure state, where elephants arc said to be overpopulated, is often fragile and illusory. In the face of automatic weapons, and with the high incentives provided by the high ivory price, a population of "safe" elephants can be brought to the edge of extinction within a few years.

The elephant situation in Africa as a whole contains a few islands of protected elephant populations where "overcrowding" may still be a problem. Otherwise, elephants, like many people in Africa, face an unstable and turbulent future.

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