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African Elephant Ivory Trade Study: Final Report (Excerpts)

Iain Douglas-Hamilton

IUCN/WWF Elephant Survey and Conservation Programme

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Cover Page Footnote
In one year the results we have obtained have only been possible through the work and efforts of many individuals in Africa, Asia, Europe and America, to whom I offer my thanks. The U.S. Fish and Wildlife Service provided funds and freedom of action, and the International Union for the Conservation of Nature and Natural Resources entrusted me with the study's execution and facilitated its administration. In particular I am grateful to Earl Baysinger for his constant support and encouragement. U.S. Embassies gave us a friendly welcome and substantial assistance especially in background information, contacts and communications. The British and French Embassies gave help which at times was of critical importance. Many African leaders in conservation responded to the goals of the mission, and their ministries, wildlife departments and staff gave assistance and information. The World Wildlife Fund and New York Zoological Society have contributed generously by funding the IUCN Elephant Survey and Conservation Programme, from whose results I have freely drawn. I thank my colleague Kes Hillman for the work we have accomplished together. The African wildlife Leadership Foundation has been a constant source of practical aid in the field and in Washington. Peter Sands of the CITES secretariat and John Burton of TRAFFIC provided basic information. Sara Camron has helped greatly in many essential ways. Carol Ann Zito and Nicki Beaumont prepared data; the typing was accomplished by Suzanne Burgener, Suzanne Mead and Hotel Secretaries Ltd. Some of the most valuable information was provided by West African traders, who were frank and forthcoming about how they bought and sold ivory. I am also indebted to La Couronne for the insights they gave me. The Director of the Archives in Dakar and Babacar Camara were exceptionally helpful. There were other confidential sources who will know how grateful I am. I am honored by the late David Sheldrick who entrusted me with twenty-six years of "found" ivory records from the Tsavo National Park, Kenya, and to Hildy Rubin who prepared this data for computer analysis. My wife Oria joined me in my travels, interpreted, encouraged and inspired. We offer our special thanks to those who gave us hospitality often in strange and confusing countries. to John and Judy Heimann in Zaire, Harold Roth in Ivory Coast, David Rawson and Tom and Gail Davis in Senegal, the Governor of Selibaby in Maurentania, Bruno and Bernadette La Marche in Mali, the British Ambassador, Christopher and Metter Macrae in Gabon, Pierre Guizard at Iguele, and U.S. Ambassador William Swing in the Congo. Finally to Ian Parker who carried out the bulk of the research, my thanks, for the benefit of many years experience and a sureness of opinion which is unfailingly stimulating. I am grateful for and in admiration of the massive accumulation of facts and analyses, done in such a short time. I acknowledge my debt to his friends, colleagues, sources and informants who also contributed.

AFRICAN ELEPHANT IVORY TRADE STUDY: FINAL REPORT (Excerpts)*

by **Iain Douglas-Hamilton**

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I. INTRODUCTION

The Elephant Ivory Trade study came into being to fill the gap in our knowledge about the crucial problem of how the ivory trade affects the African elephant's chances of survival.

The idea of banning the import of all ivory into the United States as a measure intended to control the world trade in ivory was proposed by Senator Beilenson in the Bill HR 10083. As a consequence of this bill, hearings were held on December 1977 on the status of the African Elephant as a Potentially Endangered Species.

While the hearings established that the ivory trade was a major threat to elephants in a significant portion of their range in Africa, they left many other questions unanswered. The total volume of the world ivory trade was unknown. Information was lacking on long term changes in the flow of that ivory out of the continent of Africa, against which current trends could be measured. Many other questions could not be answered.

--Were the price increases a consequence of hoarding ivory as a wealth store?

--Was there either the will or the ability within the ivory trade itself for self-regulation?

--Where were the particular points within the trade where control would be practical and effective?

Following the hearings, the United States Fish and Wildlife Service (USFWS) classified the African elephant as a 'threatened' species for the purpose of the Endangered Species Act, and imposed new regulations which prohibited the import of ivory into the United States other than from CITES signatories.

In addition, the FWS commssioned through the International Union for the Conservation of Nature (IUCN), an Elephant Ivory Trade Study designed to answer the critical questions. The terms of reference were as follows:

To quantify the world trade in elephant ivory;

To estimate the world-wide investment in elephant ivory and its products;

To assess the role of elephant ivory as a currency equivalent;

To describe the component links in the economic chain of the ivory trade;

To estimate the impact of the ivory trade on the survival of wild elephant populations;

To recommend means for the regulation of the trade to lessen any adverse impacts.

Having drafted the original proposal from which these terms of reference were composed, I was invited to be responsible for effecting this study. The study was to be independent, but parallel to the IUCN Elephant Survey and Conservation Programme, which I directed under the sponsorship of the World Wildlife Fund (WWF) and the New York Zoological Society (NYZS).

Someone was needed for the Ivory Trade study with a background in wildlife who was well informed in all aspects of trade in ivory. The specific tasks included winning the confidence of leading traders, eliciting both information and their attitudes to the long term future of the business.

I decided to pass the terms of reference in their entirety to Mr. Ian Parker, who is well known for his work on elephants, as co-author with Dr. R.M. Laws of several key scientific papers and the book "Elephants and their Habitats" (Laws et al., 1975). He has also been a Game Warden, a Wildlife Consultant and has been practically involved in game law enforcement and the management of elephants over a period of 23 years. Since 1969 he has made several pioneering studies of the ivory trade for conservation bodies and the trade itself.

His report to me ranges beyond the terms of reference. It is a major landmark, tapping previously neglected or unavailable sources and the author's lifetime experience. It is provocative, will undoubtedly be controversial in parts, and contains a massive amount of material for one year's work. The facts presented should put both conservationists and ivory traders on their mettle and cause both to re-examine their ground.

It is evident that at times Parker has more sympathy for the ivory trade than for conservationists whom he tends to lump under one blanket, and he may consequently lay himself open to a charge of bias. However, it is not difficult to distinguish the facts presented from his informed speculation, and from his opinions.

In my report, I have presented additional data from the IUCN Elephant Survey, by permission of my sponsors, which supplements the information collected by Ian Parker. This includes estimates of how many elephants there are in Africa and how their numbers are declining in response to killing for ivory. A special section is devoted to a three month field study which I made in francophone West and Central Africa to augment our better known anglophone sources. Finally, I discuss all the information and conclusions which can be drawn from our joint endeavors.

My report is followed by Parker's four volumes. The somewhat unusual form of this presentation is due to the fact that it seemed better to gain the

maximum amount of information while the opportunity existed at the expense of analysis and integration. Furthermore, Parker's work (1979) is cohesive, and, even where I do not agree with his conclusions I have not broken up the flow of his report by trying to edit it. It is intact as delivered to me, preceded by my own evaluation and recommendations.

In effect while agreeing well enough on the factual basis, we diverge in our interpretation of the severity of the ivory trade's effect on Africa's elephants. We come together again in how we feel the problems raised should be tackled. Our main recommendations are to reinforce the National Parks archipelago within the elephants' range and to strengthen the operation of the Convention on International Trade in Endandered Species of Wild Fauna and Flora (CITES).

In the end our studies raise up as many questions as they can answer. If the facts and ideas presented here stimulate a burst of research in this new field of history, geography, trade and population ecology, we shall be well rewarded.

II. AFRICA'S ELEPHANT RESOURCE

A. Elephant Densities

The only way to count elephants over large areas is from aeroplanes. Most censuses today are samples in which only a fraction of the elephant's range is counted thoroughly, from which the density of elephants is calculated, and a total population extrapolated.

Since July 1976, I have flown 13 aerial counts for the IUCN Elephant Survey in the three East African countries (Douglas-Hamilton 1977, 1978). The densities we have found have been compared with those of other scientific teams working in the region.

In addition, we have received results of aerial counts made in South Africa, Namibia, Botswana, Zimbabwe, Zaire, Sudan, C.A.E., Ivory Coast, Cameroon, Nigeria, Benin, Upper Volta and Senegal. Despite some inconsistencies in methods between different teams, we now have a fair idea of the range of densities of elephants in the savannahs of Africa. The highest elephant densities of elephants were recorded in Lake Manyara National Park, Tanzania (Douglas-Hamilton, 1978) and the Garamba National Park in Northern Zaire (Savidge et al., 1976) which hold more than five elephants to the square kilometer. Among the sparsest elephant populations were those in the South Kordofan province of Sudan, at 0.001 elephants per square kilometer (Watson et al., 1976).

At present, adequate counts have only covered a fraction of the elephant's range in Africa, and exclude the forest altogether, (see Fig. 1, not included in this excerpt).

B. Elephant Range and Population

The range of elephants has been derived from a network of informants. We have drawn detailed maps of elephant range for the 35 countries where elephants can be found and, by extrapolating likely densities to the total range, have calculated elephant populations for each area and country.

This information together with suggestions extracted from our "Elephant Action Plan" have been recirculated to our original informants for their comments. The information base is in this way gradually improved in a process of progressive approximation. Examples of maps, population tables, action plan and final questionnaire replies for Tanzania and Malawi appear in Appendix 1 (not included here).

C. Biasses

Even aerial censuses only give approximate elephant densities, which in most cases are underestimates. Improved techniques may lead to larger estimates, but even then most aerial counts are thought to be too low.

On the other hand, our estimates of elephant range may at times have included larger areas than they should, when for example our informants have included several isolated pockets of elephant range within the same sweep of the pen.

For this reason, I have tended to choose elephant densities for the uncensused areas which are deliberately on the low side. I hope that this may compensate for any exaggeration of elephant range which may have occurred, and that our continental total is indeed a minimum.

D. Overview

The continental range of the elephant is illustrated in Fig. 2 (not included here; see the Range map in preceeding excerpts, page 50). It can be seen that while the elephant is still widely distributed, it no longer exists in North Africa, or in much of South Africa, and only survives in small scattered ranges in West Africa.

The elephant still occupies a range of over 7 million square kilometers, within which are some 90 existing or proposed National Parks set aside for the protection of this and other species. Of its range about one third is forest and the rest is wooded savannah. Our study spans the years 1976-79 and in that time our minimum estimate of elephant numbers is 1.3 million. This, however, is not a precise figure and should not be used for extrapolating potential yields of ivory from various forms of mortality. This point will be covered in the discussion. The estimates for each country are summarized in the Text Table (see Table I in preceeding excerpts).

III. TRENDS IN ELEPHANT NUMBERS

As the human race expands the elephant has come into competition for the diminishing unused parts of Africa. In Uganda, a country of high human Fall

population growth, the elephant range has been reduced form 70% of the country to around 17% in less than 75 years. In Rwanda, with an even denser human population, the last non-forest herd was eradicated on government order in 1975.

The greatest long term threat to existing elephant populations in Africa is loss of their habitat as agriculture, ranching or forestry take over.

This range loss in some cases causes a paradoxical overcrowding of elephants in protected areas such as Parks and Reserves. This, however, is relatively insignificant and, at worse, can cause a population crash through starvation, as it did in the Tsavo National Park in Kenya in 1971. In theory it could also cause irreversible ecological damage, such as soil erosion, but this has not yet been demonstrated. Elephants, however, push over or otherwise destroy trees and may alter the whole landscape by removal of entire forests, but while there are arguments both in favour and against culling elephants in such special circumstances, in much of East Africa overcrowding has been reduced through massive outbreaks of poaching in recent years (Douglas-Hamilton, 1979, Appendix 2).

The third and most important short-term threat for perhaps a majority of Africa's elephant population is human predation for ivory. Although none of the other threats to elephants should be neglected the subject of this report is occupied with the effect of the ivory trade.

A. Historical Data

In the past, elephant populations have been exterminated by ivory hunters alone. This has been particularly so in North America in the early Middle Ages, in South Africa in the eighteenth and nineteenth centuries (Bryden 1903), in West Africa in the late nineteenth and early twentieth centuries, (Bourgoin, 1936 -- only the 1949 reference is given), and in Northern Somalia in the mid 1950's. The elephants in these regions were all fairly accessible, living for the most part in savannah. In South Africa ox wagons were used to transport the ivory, in the West much travelled down the river to seaports and the movement of ivory became greatly accelerated with the development of better roads, rail and water-borne transport.

For a period in the mid-nineteenth century the movement of ivory across the Sahara by camel became important but receded as the Colonial powers extended their dominion over the full range of the African elephant and suppressed for a period the Hausa ivory traders (Johnson, 1978).

B. Effect of Game Laws

A common feature of these regions where elephants were successfully exterminated was a lack of any conservation law. In South Africa hunters were permitted to take as much ivory as they could, and no laws were established until the elephants had already disappeared, apart from a few isolated ranges. In West Africa commercial hunting of elephants was permitted up until 1936.

At the turn of the century fears were frequently expressed that the elephant in East Africa would follow the path of the South African populations. Such fears led to the drafting of conservation laws specifically intended to prevent such extinctions.

Although these laws failed to achieve 100% success, and were evaded particularly by African hunters (now classified as poachers), they were successful in eliminating for the most part the commercial European ivory hunters with their effective firearms, and consequently avoided the destruction of elephants as it had come about in Southern Africa.

In parts of East Africa elephants may have actually increased, especially in those areas where sleeping sickness had reduced the human populations, for example, the Selous Game Reserve, Tanzania and the Murchison Falls in Uganda.

The demand for ivory slackened between the wars (Parker Ch. 4, Vol 1) which, together with the new more enlightened laws, gave the elephants a stay of execution. In recent years, however, the ivory trade has resumed its former vigour. Parker has examined trade statistics over a period of 100 years and concludes:

> "It seems that after a depression of six decades, the volume of ivory leaving Africa is once again of the same order as it was between 1900 and 1914."

The independent data which I have collected from the archives of the French colonial period now stored in Dakar and from current trade sources support his conclusion.

Since there must be far fewer elephants now, living in far smaller range than there were in 1914, the current levels of exploitation cause concern that an unsustainable yield is being extracted.

C. Recent Trends

The review which follows on regional trends in elephant numbers I have extracted from the information accumulated by the IUCN Elephant Survey. It supplements information on the ivory trade in Parker's Chapter 4, Vol. 1.

1. East Africa

In East Africa the trends in elephant numbers are clearest, because a great deal of census work has been done. The IUCN Survey estimated that between 1970 and 1977 Kenya lost more than half her elephants. This finding has been confirmed independently by Kenya Rangeland Ecological Monitoring Unit (KREMU).

The decline appears to have continued. The latest results of KREMU suggest a further decrease of 25% between 1977 and 1978 of what was left of the elephant population (Stelfox et al., 1979). (In passing one should note that the decline of rhinos was even more severe with the 1978 estimate down to 31% of the 1977 estimate). Since March 1978 the law in Kenya has become stricter.

All private trading in game trophies has been banned, and the anti-poaching units have begun to tackle the formidable Somali poachers. Some consignments of ivory have been seized under the provision of CITES in Germany. The matter is currently under investigation in Kenya, and recently fresh seizures were made at Nairobi Airport (Standard August 24th, 1979; Appendix 3, not included here).

The export of ivory on the order of 400 tons in 1976 (Parker, Vol 4 Table 101) has been reduced. It is still too early to say if these measures will halt the further decline of elephants (and rhino), but there appears to be a new political will to do so.

On the IUCN surveys we count elephant carcasses and use the ratio of dead to live elephants as a rough measure of mortality over the preceding years. Various criteria have been developed for distinguishing the previous year's crop of dead elephants from older carcasses, (Douglas-Hamilton & Hillman, unpublished). While it is difficult to be sure of exact carcass ages a rough rule of thumb indicates that if dead elephants form more than 5-10% of the populations total, then an above average mortality has been experienced in preceding years.

KREMU and other teams have adopted our criteria for recording dead elephants and in their Kenya-wide survey last year saw more dead than live elephants. The ratio of living to dead had decreased from 51:49 in 1977 to 44:56 in 1978.

Our counts made in earlier years in Kenya showed a higher proportion of living elephants but indicated that the mortality in Uganda and Northern Tanzania had been abnormally heavy. This mortality we attribute mainly to poaching. The ratios are shown diagrammatically in Fig. 3.

Only Southern Tanzania, at the time these data were assembled, has escaped heavy poaching, and as the poachers search for new supplies of ivory it is not unlikely that these elephant populations may also soon come under threat. In the meantime, however, the elephant of Tanzania are holding their own, and the national parks and reserves comprise an adequate proportion of the elephants' range for the conservation of the species.

In Uganda a catastrophic decline of elephants took place when Amin's soldiers entered the parks and poached for ivory. In 1976 the Kabalega Falls National Park (formerly Murchison) contained at least 8,500 elephants south of the Nile, (Laws et al., 1975), but in 1976 when Parker and I made a total aerial count, we only counted 1,232. This decline has been independently monitored by Dr. Keith Eltringham and Dr. Robert Malpas working for the Uganda Institute of Ecology, (Eltringham and Malpas, 1976). Similar massive killing was also recorded in the Ruwenzori Park in the same period.

With the transfer of an active warden to the Kabalega Park, the slaughter seemed for a while to have been arrested. However, in 1979, Amin's troops retreated across the Park, sacked the lodges and are alleged to have machine-gunned a number of elephants and other animals, taking the ivory with them into Zaire. The exact extent to which this may have affected the

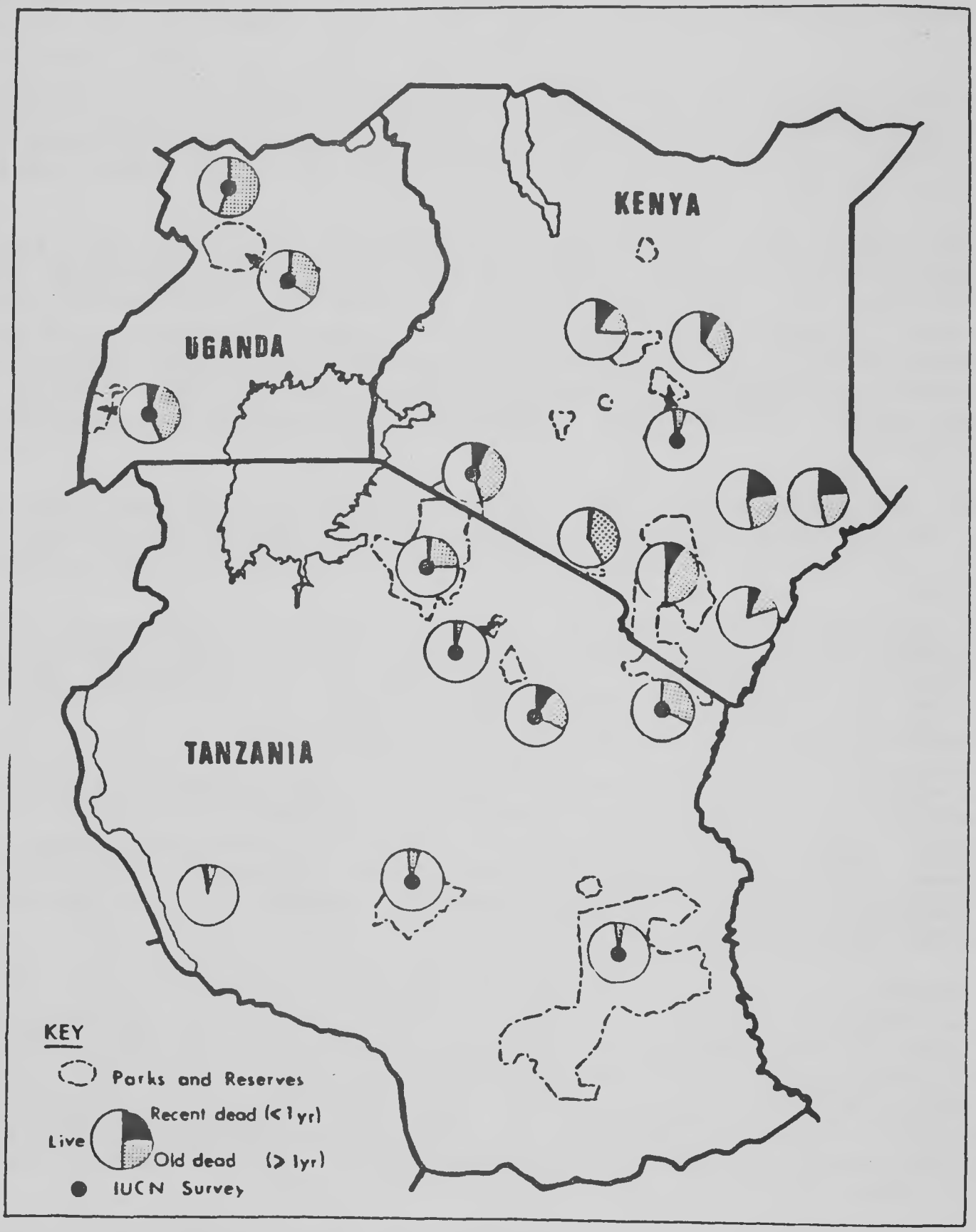

FIG. 3. **RATIOS OF LIVE TO DEAD ELEPHANTS IN EAST AFRICA 1976/8**

survivors of previous massacres is unknown, but guns are widespread and law and order has not yet been re-established. It now appears that Tanzanian troops have been shooting in the Ruwenzori National Park.

In 1967, when I first visited Uganda's National Parks, no one anticipated the events about to happen, of which the slaughter of the animals was but part of Uganda's tragedy. Considering the elephant in isolation it shows that the species' future is only as secure within a part as the general preservation of peace, law and order. The isolation of elephant's range to small 'island' refuges renders it more vulnerable to the turbulence of human affairs.

The decline of elephants in East Africa caused by ivory poachers demonstrates a regional trend involving about 28% of Africa's elephants and can only be shown because of the scientific work which has been carried out.

In Sudan, however, information from which trends can be deduced is not available. Census data suggests that elephants are widespread and not threatened. Very few carcasses were spotted in the Sudan livestock survey of 1975-76 (Watson, et al., pers comm). A low human population density and poor communications are the best safeguards for elephants in this country at present. For the future a series of National Parks are being created. Sudan probably contains some 10% of the continent's elephants.

2. Southern Africa

Aerial census data from which trends can be deduced have also been produced in parts of South Africa, Zimbabwe and Botswana, and show that in association with adequate conservation law and enforcement and motivated wildlife departments there has not been a decline of elephants due to killing for ivory. These elephants, however, amount to only 4% of the continental population.

In Zambia a count we had planned in the Luangwa Valley and Kafue National Parks had to be cancelled at the last minute due to the war. Reports allege that elephant poaching has been heavy in the south where guerillas live off the land, but elsewhere, and particularly in Luangwa, reports are conflicting, some indicating heavy poaching of elephants and others suggesting overall reduction, compression and local habitat destruction by elephants. Until an aerial survey in Zambia is repeated the trend affecting perhaps a further 11-16% of Africa's elephants cannot be determined.

Towards the end of Portugese rule in Angola and Mozambique, heavy killing of elephants for ivory was reported, and large amounts of ivory were taken out of the country by Portuguese refugees. In Angola, ivory is now traded for weapons (by both FNLA and UNITA). There is not quantitative information of ivory exports, but according to Parker, imports of Angolan ivory into South Africa are larger than could be sustained by a population of the size we have provisionally estimated for the country. It would be surprising if the effects of the large price rise were not making themselves felt in these countries, as elsewhere, and causing heavy inroads on the elephant populations. In general, war causes a lack of respect for conservation law, and the presence of armed men in proximity with wildlife, leads to massive poaching. The best hope is

that poor communications will make finding and killing elephants and transporting the ivory too expensive to be carried to the point where they are exterminated.*

3. West Africa

There have been virtually no successive censuses from which trends can be deduced, but the historical ivory exports are revealing.

I have summarized (Fig. 4 and Table 2, not included here) some statistics of ivory exports from francophone West Africa (Afrique Oddicentale Francaise, AOF) for the period 1890 to 1978, including Senegal, Guinea, Ivory Coast, Mali, Upper Volta, Niger and Benin.

The exports show a rapid increase up to 1909, which coincides with the initial stages of colonial expansions and exploitation. This fell off before 1914, and finally dwindled to virtually nothing, apart from a brief spurt in the late 1940's and early 50's, following the Second World war.

This long decline can be attributed to destruction of the elephant resource. According to French sources, elephants were eliminated due to lax hunting laws. Bourgoin (1949), the Director of Game for the whole of the French West Africa, wrote that decrees authorizing commercial hunting were not repealed until 1936 and allowed entrepreneurs to give guns to African hunters and pay them to hunt for trophies and meat. This caused a rapid decrease of elephants. Rhinos were exterminated.

Today, all of West Africa's elephants, including those of anglophone countries, amount to only about 1% of the continental total. They have in some cases been reduced to such small and isolated populations that it is uneconomical for poachers to mount expeditions to obtain ivory. The greatest threat to their survival is elimination of their habitat; even areas intended to be protected, such as Bia in Ghana, Tai in Ivory Coast, and Gourma in Mali are under threat.

4. Central Africa

Central Africa, including Zaire, C.A.E., Congo, Gabon, Cameroon and Tchad harbours about 37% of Africa's elephants. Much of the ivory from these countries is derived from the forest-dwelling elephants, the sub-species Loxodonta africana cyclotis, whose thin, pointed tusks can be easily distinguished from the blunter, more curved savannah ivory. Parker found that about 60% of the ivory he examined in Hong Kong was "Cyclotiform" (that is, forest elephant ivory). It appears from the records that Central Africa has been the world's major producer of ivory for the last 100 years (Parker Vol. 1 Ch. 3).

*At present these elephants probably represent 5% of the continental population.

Detailed customs statistics are available for the former French Equatorial Africa (AEF), which include all Central African countries other than Zaire. There are also statistics for Cameroon for the period before 1914 when it was still under German rule.

Like West Africa, the AEF countries show a surge in ivory exports which coincides with the opening up of the interior. This peaks in 1905 and then swiftly declines before 1914. The same explanation is most probably that easily accessible elephant populations were destroyed, and any locally hoarded ivory was marketed, with the result that ivory became harder to find (Fig. 5; Table 10).

These pre-1914 trends in French West and Equatorial Africa may reflect a classic "over-fishing" syndrome - where exploitation of a renewable resource at first gives greater returns every year, until, despite increased hunting efforts, it yields a decline and continues to do so as offtake exceeds replacement. The demand for ivory remained high and was reflected in the price of ivory which showed a slight increase during that period (Fig. 7, not included here).

The same trend was repeated in French Somaliland, once again accompanied by a rising price (Fig. 6; Table 17, not included here).

Only Zaire (Belgian Congo) maintained a high level of ivory export right up to 1914 (see Table 16a). However, our main source for this is Kunz (1916) whose accuracy requires checking since his figures for the AEF countries do not agree with original customs records.

After 1914, the meticulous recording of ivory exports stopped as the tidy French bureaucracy became a casuality of the First World War. The statistics resumed in summary form in 1919, 1922, and 1925, and thereafter in monthly bulletins. The demand appears to have dropped between the wars (a conclusion supported by Parker and reflected in the ivory exports).

It is not until recent years that the export records have begun to climb once more in response to world demand. The recent figures would be much higher if they reflected true value, but in Fig. 5, I have only used official customs figures. The fact that the range and number of elephants are very much lower implies that current levels of offtake may represent massive over-exploitation.

The next section presents further information of Francophone West and Central Africa, considering the ivory trade and the elephants in each of the countries which I visited in turn in April, May and June.

IV. WEST AND CENTRAL AFRICA IVORY TRADE

Senegal

The surviving 450 or so elephants of Senegal mainly live in the Niokola-Koba National Park. At present, the Parks systems of the country is efficiently managed. However, with such a small population within a limited

FIG. 5 RAW IVORY EXPORTS FROM AEF/UDEAC

1890 - 1977

Countries included:
CAE
Cameroon
Congo
Gabon
Tchad

● Cameroon Exports 1899 - 1905

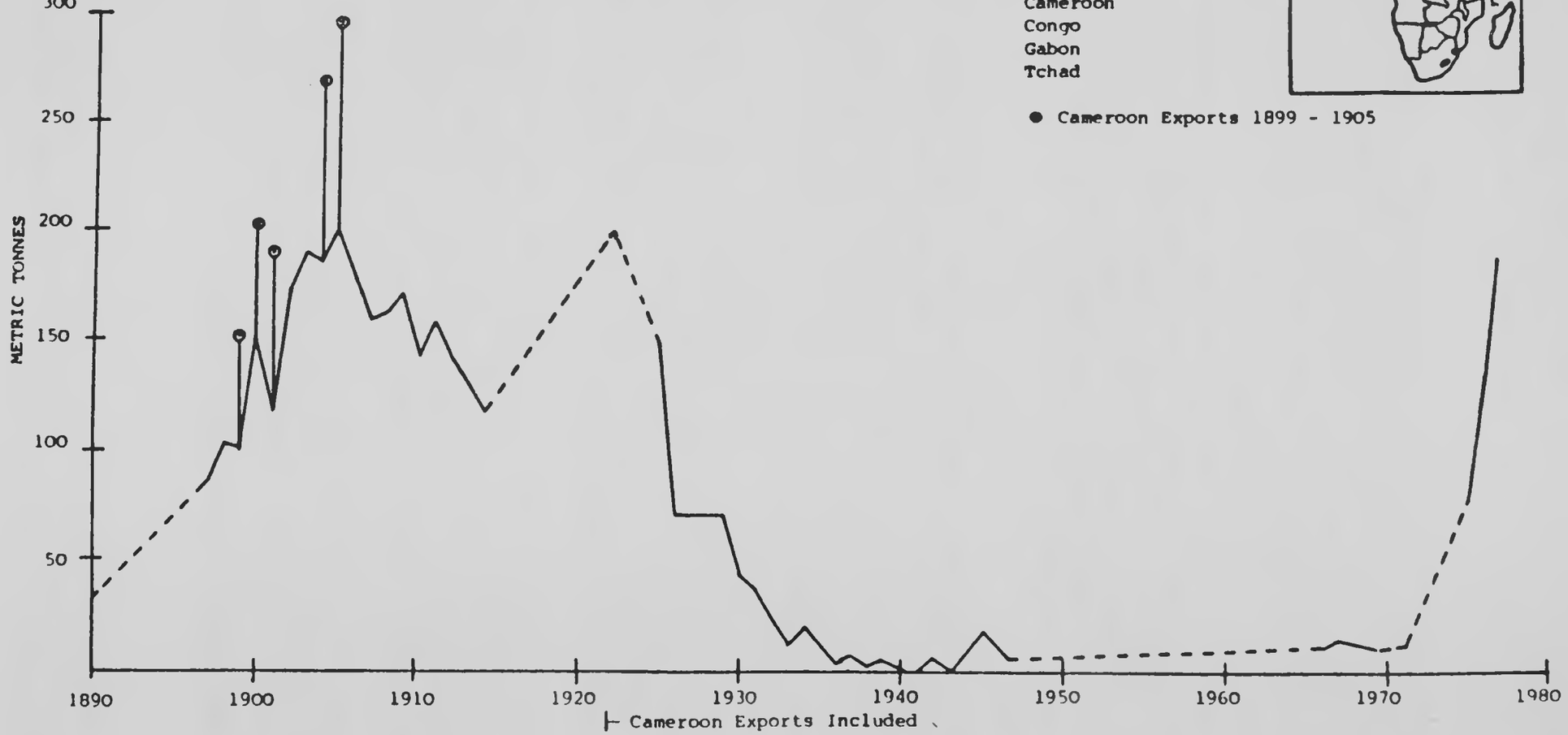

TABLE NO 10 (Cont) AEF Exports

TABLE NO 10 RAW IVORY EXPORTS FROM L'AFRIQUE EQUATORIALE FRANCAISE
COUNTRIES INCLUDED: GABON, CAE (OUBANGUI-CHARI), CONGO (MOYEN CONGO), TCHAD.

Source : STATISTIQUE COLONIALE DU COMMERCE
‡RENSEINGMENT GENERAUX
*FAUNE DE L'EQUATEUR AFRICAIN FRANCAIS : MALBRANT & MACLATCHY (1949)
UDEAC STATISTIQUES GENERALE
(Tabulated by I. Douglas-Hamilton)

YEAR	KILOS	TOT VALUE	FR/KILO	
1891	32,576	562,288	17.62	
1892				
1893				
1894				
1895				
1896				
1897	86,656	1,596,559	18.42	
1898	102,407	1,536,105	15.00	
1899	100,072	1,878,195	18.77	
1900	151,731	2,927,653	19.30	
1901	124,419	2,398,450	19.28	
1902	170,023	3,295,678	19.38	
1903	189,783	3,741,927	19.72	
1904	186,837	3,703,111	19.82	
1905	200,435	4,005,958	19.99	
1906	179,268	3,573,399	19.93	
1907	158,191	3,124,937	19.75	
1908	162,476	3,182,159	19.59	
1909	170,646	3,349,794	19.63	
1910	142,015	2,927,562	20.61	
1911	150,750	3,359,387	22.28	
1912	143,254	3,323,710	23.20	
1913	131,643	3,062,467	23.26	
1914	117,118	2,667,801	22.78	
1915				
1916				
1917				
1918				
1919	177,363	4,049,210	22.83	‡
1920				
1921				
1922	200,094	5,961,635	29.79	‡ incl. Cameroon
1923				
1924				
1925	147,148			‡
1926	71,000			*
1927	71,000			*
1928	71,000			*
1929	71,000			*
1930	42,900			*
1931	36,600			*
1932	24,001			*

TABLE NO 10 (Cont) AEF Exports

YEAR	KILOS	TOT VALUE	FR/KILO	
1933	12,072			*
1934	20,706			*
1935	12,449			*
1936	6,786			*
1937	3,846			*
1938	5,820			*
1939	2,402			*
1940	3,589			*
1941	1,157			*
1942	84			*
1943	6,798			*
1944	1,772			*
1945	8,273		CFA/KILO	*
1946	10,648			*
1947	5,719			*
1966	12,000	40,506,000*		
1967	14,000	11,947,000		
1968	13,000	10,564,000		
1969	9,000	9,376,000	991.33	
1970				
1971	10,000	15,380,000		
1972				
1973				
1974				
1975	82,000	201,258,000		
1976	138,000			
1977	189,000	817,310,000		

N.B. In 1966 CAE, Cameroon, Congo and Gabon formed the Union Douaniere et Economique de l'Afrique Centrale (UDEAC)

* Possible misprint in UDEAC statistics

TABLE NO 16 a. RAW IVORY EXPORTS FROM ZAIRE (BELGIAN CONGO)

Source : * KUNZ (1916) (PARKER TABLE 10)
** FALLON (1944)
+ RAILWAY RECORDS
++ SERVICE DES STATISTIQUE
*+ JEANNIN (1974)
(Tabulated by I Douglas-Hamilton)

YEAR	KILOS		YEAR	KILOS
1888	54,812*		1936	204,000**
1889	113,532*		1937	185,000**
1890	180,605*		1938	125,000**
1891	141,775*		1939	74,000**
1892	186,521*		1940	
1893	185,933*		1941	
1894	252,083*		1942	
1895	292,232*		1943	
1896	191,316*		1944	
1897	245,824*		1945	
1898	215,963*		1946	273,000+
1899	291,731*		1947	
1900	262,665*		1948	
1901			1949	
1902	249,307*		1950	
1903			1951	
1904	166,948*		1952	
1905	211,338*		1953	
1906	178,207*		1954	
1907	203,583*		1955	
1908	228,757*		1956	
1909	243,823*		1957	
1910	236,822*		1958	
1911	226,433*		1959	191,078++
1912	233,675*		1960	171,101++
1913	274,495*		1961	181,090++
1914			1962	42,773++
1915			1963	21,306++
1916			1964	121,473++
1917			1965	122,914++
1918	127,000**		1966	79,337++
1919			1967	452,971++
1920	335,375*+		1968	114,621++
1921	248,946*+		1969	163,485++
1922	295,498*+		1970	125,228++
1923	334,846*+	336,000**	1971	127,102++
1924	296,826*+		1972	89,801++
1925	300,328*+	302,000**	1973	143,839++
1926	231,273*+			
1927	224,807*+			
1928	205,492*+	225,000**		
1929	140,704*+			
1930				
1931				
1932				
1933				
1934				
1935	221,000**			

TABLE NO. 16b ZAIRE RAW IVORY EXPORTED LEGALLY

Source : OFFICE ZAIROIS DE CONTROLE (OZAC)

(Tabulated by I. Douglas-Hamilton)

YEAR	KILOS
1968	83,768
1969	89,841
1970	91,200
1971	52,093
1972	48,440
1973	16,226
1974	26,545
1975	0
1976	1,961
1977	1,840
1978	0

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range, destruction is a possibility. Such populations are susceptible to political upheaval.

Senegal was the first country to be colonized by France in Africa. The ports of St. Louis and the island of Goree changed hands between the French and the English many times but were finally returned to the French after the Napoleonic Wars. Customs records are available from 1821, which I was able to inspect in the archives at Dakar (see Table 2, not included here).

The amount of ivory exported during the 19th century presumably reflected the fortunes of the French trading companies. The maximum amount exported from Senegal was 35 tonnes in 1843, and the minimum was 509 kilos in 1871, at the height of the Franco-Prussian War. With the turn of the century a steady increase in ivory exports up to 23 tonnes in 1908 coincided with penetration of the interior by the French Administration. In 1908 Haut-Senegal (Mali) and Niger's exports were separately calculated from Senegal, but both show a rapid decline before the outbreak of War in 1914. Senegal's raw ivory exports never really recovered and today she exports virtually none.

In the early years of the century elephants still survived in the west of the country, and the last elephant near Dakar was shot at Rufisque in a small patch of forest in 1905. In the north they lived longer near Lac de Guier and were still common in 1925. However, French colonial law permitted commercial hunting, and by 1929 they had all been shot out or had moved into East Senegal.

V. DISCUSSION

In the previous sections, it has been shown that the ivory trade in North Africa, West Africa and South Africa has caused catastrophic reductions to the point where elephants have dwindled to extinction or have become so scarce that they are no longer profitable to hunt. A lucky few are protected in isolated National Parks. The declines in East Africa have been measurable to some extent, over the last decade by aerial census and carcass counts, and amount to the premature and unnecessary decimation of a natural resource. The same destruction is thought to be happening in Central Africa, where the trade has been shown to be out of control and illegal at its roots. Only a small fraction of Africa's ivory which reaches the world market is of legal origin. Yet we have also described some populations of elephants which have remained protected by their isolation, within dense forests far from roads, such as those of Gabon, and perhaps in parts of Zaire, C.A.E. Congo and Cameroon.

We now turn to the four volumes written by Ian Parker. Never has the ivory trade been so thoroughly researched, especially in relation to its effects on elephants. The material will repay much study, but here I shall confine myself to commenting on the facts and conclusions which have direct bearing on the terms of reference and on the recommendations which follow.

A. Ivory as a Wealth Store

Perhaps one of Parker's most original contributions is the identification of ivory as a wealth store and a currency equivalent. As it happens, these ideas have not become firmly established in the conventional wisdom of

conservation journalism; few people realize that the author is Ian Parker, (1973) who in his early reports propounded these ideas, which were later picked up by others.

In the present report, his chapter on "The Role of Ivory" identifies ivory as "The currency which got left behind". Parker's Fig. 29 on page 114 shows how ivory prices increased more slowly than inflation until the spectacular rise in the early 1970's. The reason why investors only suddenly appreciated its value during the financial instability of the 1970's remains a mystery.

It was after 1972 that the price of ivory became a major factor in raising ivory production, and this provided a greatly increased economic incentive to poach. Furthermore, the rewards which became available to the poacher in some countries (such as Kenya) increased even more rapidly than the world price.

In the 1950's and 1960's a poacher or illicit ivory gatherer in Kenya could expect Shs. 3-4/1b ($.79 - 1.05/kg), but by 1975 they were usually receiving Shs. 100/kg ($12.74/kg). In other words, the black market value for the primary producer had increased from about one fifth to one third of the real value. It is interesting to note that today the black market value of tusks in Cameroon and Gabon at 5,000 CFA/kg ($22.94) is also roughly one third of the real value in those countries. So the high rewards associated with poaching are by no means confined to East Africa.

It would appear from the volume of evidence that these sharp price rises were not an isolated East African phenomenon, and were repeated in all the major exporting and importing countries. These rapid price increases certainly cannot be equated with steady inflation (Enright, 1978).

For the future, one may presume on the basis of Parker's work that ivory, now that it has made up for lost ground, will, like gold, continue to rise, with large fluctuations, broadly in line with inflation. This is unless some development occurs which causes investors to lose faith in its value as a wealth store, in which case the price might show a sudden collapse. This is indeed the intention of those who support the imposition of total bans on the import of ivory to the United States (Van Note, 1979).

B. Effect of the Ivory Trade on Elephants from Trade Data

From Parker's exhaustive tabulation of available and historical trade statistics, and with the support of the French West and Central African sources, we can quite confidently assert that the volume of ivory exports has increased with the price, and is now back to pre-1914 levels in the prime elephant ranges of Africa.

We must now turn to the question of how this offtake is affecting Africa's elephant, for it is here that Parker and I part company. I have stated my reasons for thinking that elephants have and are currently suffering a massive decline due to killing for ivory. Parker's position is that "other than at a local level, the allegation that the ivory trade has brought about widespread elephant declines is not substantiated", and the twin bases for this statement are a mathematical model based on extrapolation of information gained from the

commerce in tusks, and the fact that most of the tusks which he examined in Hong Kong were large bull ivory.

I do not believe strongly in mathematical models which try to apply simple assumptions to a vastly complicated and heterogeneous continental problem. However, since they have been used to support positions both in favour and against the application of restrictions on the trade in ivory, they must be discussed.

The question which most of these models set out to answer is "Can the elephant population of Africa sustain the current offtake of ivory?" The model needs answers to these further questions:

1. What is the amount of ivory annually exported from Africa?

2. How many elephants does it represent?

3. What proportion is contributed by natural mortality?

1. Amount of Ivory Exported from Africa

Customs export statistics should give the amount of ivory exported from Africa but they are thought to be unreliable. Parker gives several reasons to account for the shortfall in the ivory exports recorded by the countries of origin when compared to importers records. These range from deliberate political concealment to changes in the weight of ivory during travel as it dries. Furthermore, smuggled ivory is unrecorded and many shipments miss records simply because the computer forms were not correctly filled in. This clerical error is estimated in Zaire to give an underestimate of the order of 30% on all exports.

Parker has relied on the records of importing countries to arrive at a continental export of ivory for the years 1976, 1977 and 1978 (Table 101). In identifying Japanese double counting as a source of inflated estimates, he has revealed the complexity of interpreting trade records. Japanese imports from Hong Kong are recorded by Hong Kong as exports to Japan, but Japan prefers to record the African country of origin rather than Hong Kong. The double counting can be corrected by deduction.

Furthermore, a major ivory consuming country for which we have no records is China, to whom Parker attributes an import of 60 tonnes per year. By correcting the world total ivory imports for these factors, Parker arrives at his estimates in the Stages set out below:

Africa's Raw Ivory Exports

	1976 tonnes	1977 tonnes	1978 tonnes
Summed World Ivory Imports from Africa	1,123	849	808
Deduction of Japan-Hong Kong Double Count	932	768	707
Addition of China's Estimated Imports (60 tonnes)	991	827	766

These final estimates are very minimal. They do not take into account the following factors:

1. Smuggling
2. Imports by small ivory-importing countries
3. Ivory exported from Africa as personal effects
4. Worked Ivory exports
5. Spoiled computer forms
6. A possible underestimate of China's consumption
7. Underestimates for several African countries such as CAE and Congo on Table 101.

As Parker points out,

> "In the ivory trade there is no advantage to overstate exports or imports - all the incentives are the other way round to conceal them."

As he comments, these results need a great deal more analysis, and almost all the biasses lead to under-estimates. Whether one should increase Parker's estimate by 10%, 50% or by whatever fraction* is unknown.

2. How Many Elephants Do the Ivory Exports Represent?

To calculate the number of elephants from quantities of ivory we need a mean tusk weight. This is not simple. There are many different mean tusk weights depending on the age structure of the elephant population, how the ivory is collected and how tusks are selected for the trade. One of the largest pools of accessible data in Africa is the Dar es Salaam Ivory Room of the Tanzania Game Division.

In 1977 Davitz and I conducted an analysis of the Game Division records (Douglas-Hamilton and Davitz, 1978) from which we calculated that during the years 1971-1977, 43,877 tusks entered the ivory room with a mean weight of 4.81 kg. Of these, 43,379 tusks were withdrawn, and 90% went to State companies responsible for exporting ivory and, I believe, were duly exported and entered the International Ivory Trade.

*Amendment made by I. Douglas-Hamilton, February 1980.

On the basis of this work I made the statement to the World Wilderness Congress that:

> "if this average holds true for the rest of Africa, it means that one ton of ivory is equivalent to roughly 100 elephants . . . In all, ivory leaving Africa in 1976 may have come from anything between 100,000 and 400,000 elephants."

In this statement I was setting an upper and lower limit to the number of elephants, which might be involved in ivory exports. The lower limit was a deduced minimum based on the Tanzanians' mean tusk weight and average of 1.8 tusks per elephant, and an assumed minimum continental export of ivory of 1,000 tonnes.

The upper limit was extrapolated from an estimate of Ian Parker. In October 1973 he wrote:

> "It seems probable that the number of tusks leaving Africa annually is in excess of 200,000 (100,000 elephants) and may even be as high as 400,000. The average weight of tusk exported is not yet known. It will almost certainly be in excess of 4.5 kilos and could easily be 9 kilos."

One important key sector of the trade, the Hong Kong ivory imports, had doubled since he had made his estimate, so I doubled Parker's upper limit to obtain a maximum ceiling.

Happily, two new pieces of information have caused me to discard the upper limit. In the first place, the identification of the double counting of Japanese and Hong Kong imports removes the possibility that Africa's ivory exports could be anywhere near 2000 tonnes. Secondly, the average weight of tusk in the trade is probably higher than that handled by the Tanzanian ivory room, though I am not convinced that it is as high as the 9.65 kg assumed by Parker on the basis of his examination of Hong Kong import documents of 22,000 tusks.

There are arguments in favour of either end of the mean tusk weight spectrum. On the one hand Parker (p. 205) argues that only in Hong Kong are "all aspects of the trade represented in proportion to their true abundance: and that the small tusks found in Tanzania represent the filtering off of large tusks along illicit pathways, from the ivory room (p. 189)." The relatively low mean tusk weights of Central African ivory sent to Ivory Coast he dismisses as special selection of small tusks for that market (p. 203).

While these arguments seem quite valid, selectivity may apply equally to the Hong Kong pool of ivory which Parker examined. The Hong Kong market may, if anything, be even less random with respect to tusk weights than Tanzania's ivory room. Why should Hong Kong not now be attracting large ivory in the same way as Europe and America did from Zanzibar in the nineteenth century (Parker p. 204)? Furthermore, the Tanzanian ivory found by Parker in Hong Kong was much heavier with a mean tusk weight of 7.8 kg than the tusks in the ivory room

in Dar es Salaam, with a mean weight of 4.8 kg, which suggests that the more valuable prime tusks are specially selected by Hong Kong, and tne smaller ones remain in Africa or go elsewhere.

Ian Parker has accumulated an array of mean tusk weights which are displayed in his Volume 4 Tables 236-243. These provide great variation for mathematical model makers. For the sake of completeness, I should add in here the figure for one hundred years of records accumulated by the Royal African Company Court of Sales, recently sent to me by Marion Johnson. In total between the years 1675 and 1775, 162,300 tusks were handled with an average weight of 11.9 kilos.

I conclude that the largest pools of current data so far examined are the ivory room records in Tanzania, and the import documents of Hong Kong. With a tusk weight that may be somewhere between 5 and 10 kilos, and a total figure for exports with no satisfactory correction for underestimation, the number of elephants equivalent to current levels of ivory exports from Africa could be anything from Parker's estimate of less than 50,000 to well over 100,000.

3. What Proportion is Contributed to the Trade by Natural Mortality?

It is possible to calculate the theoretical amount of ivory which should be available for picking up, on the basis of likely death rates for the continental estimate of 1.3 million elephants, and as Parker has shown (p. 190), if this ivory could be recovered, it would go a long way towards satisfying present world demand. I do not wish to be drawn into mathematical games to arrive at one figure or another, (though I am surprised that Parker should select a mean tusk weight of 8.06 kilos, as the basis for calculating the production of "natural mortality" ivory, which is higher than any mean tusk weights for ivory actually recovered in the field). It is sufficient to admit that if the ivory could be recovered it would supply much of the world's demand.

Unfortunately, this ivory is not readily available. Even in some of the best run National Parks or Reserves such as Ruaha in Tanzania, Kruger in South Africa, Chirisa in Rhodesia, the finding rates of ivory are extraordinarily low, usually less than 6% of what should be available. In Serengeti, a Park heavily patrolled by road and air, only 1% of available ivory was recovered (Watson, pers. comm.).

Parker argues that outside the Parks and Reserves the finding should be more efficient, because illicit gatherers suffer less harassment at the hands of officialdom and can collect ivory undisturbed. While this is undoubtedly true in areas of very low human population such as South-East Tanzania, Gabon and Eastern C.A.E., I would argue that very much less available ivory is likely to be recovered than in the National Parks.

When we turn to the forest habitats of Loxodonta africana cyclotis, it is unlikely that even 1% of the ivory available from natural mortality is collected. Much of the ivory of elephants which are wounded by poachers, but which die deep in the forest several days or months later, must also be lost.

In these dense habitats there are no vultures to signal the presence of a freshly dead elephants.

An important piece of evidence bearing on this issue are the over 5,000 Hong Kong tusks which Parker viewed, of which he classified 21% as derived from "Natural Mortality". He has developed criteria for distinguishing between tusks which have been hacked out of the skull and those which have been left for several weeks (p. 169).

This is an interesting new interpretation of trade data. Unfortunately, there are two factors which may necessitate revision of his conclusion. First, ivory which is picked up, days or months after the death of the elephant would be better classified as "found" ivory rather than "natural mortality" ivory. As mentioned above, a high proportion of elephants killed by poachers die long after their encounter with the poachers. This applied to more than half the elephants killed in Tsavo National Park according to Mr. David Sheldrick (1976). With the greater availability of firearms in Africa today, it might be thought that wounding rates would come down. Unfortunately, as Parker points out this is not the case.

> "The timourous hunter can shoot at greater distance but correspondingly lower accuracy. Elephants dying of bullet wounds may take months to succumb and when they do, there will be no way to differentiate their tusks from those available from genuine "natural mortality."

Secondly, in much of Central Africa, poachers, after killing an elephant deliberately, leave the ivory in the elephant until the roots have rotted sufficiently for the tusks to be drawn out smoothly. Such ivory will be wiped clean, but it is unlikely that enough marks will be left to distinguish it from "found" ivory. In the forest there are no vultures to give the poachers away, or to allow other parties to locate a dead elephant so they can afford to wait for a few days. For these reasons I do not believe it is correct to accept that 21% of the Hong Kong ivory is derived from "natural mortality". It is likely that much less than 6% of Africa's real "natural mortality" ivory ever gets to the market, but once again for the unresearched areas, outside parks and reserves where the majority of elephants live, we are simply guessing.

On more important piece of evidence needs to be considered. Parker has shown that a high proportion of the ivory coming into the trade, especially from central Africa are large male tusks, and argues that this alone shows that the situation is not critical. However, the high mean tusk weights recorded by the trade do not indicate that young elephants are not being killed, but rather suggest that bulls are being killed at a greater rate. It is also possible that many small tusks tend to be accumulated in boxes and sold in bulk rather than being listed individually, or that they remain in Africa to be locally carved.

Notwithstanding these qualifications, it would seem that as yet the elephants of Central Africa, viewed in total, have not suffered the intensity of human predation which has distorted the age and sex structure of East

African elephants to the point where there are very few large tuskers to be found anywhere.

The key developed by Parker for aging and sexing tusks is an outstanding original contribution to elephant studies, and the preliminary analyses highly stimulating. However, the detail which he has presented in his Volume 2, will be open to numerous analyses and interpretations which are beyond the scope of this discussion.

Given the doubts I have expressed about the mean tusk weight, the estimates of total ivory exported from Africa, and the proportion of "found" ivory which is assumed to be "natural mortality", it follows that I do not accept any of the modelling which leads to the conclusion that ivory trade as such is not responsible for the decline of Africa's elephants. Neither do I accept that the offtakes represent a "sustainable yield", other than in certain specific countries, such as South Africa and Botswana, which are the exception rather than the rule.

Above all these points, the real objection which I have to this sort of modelling is that the ivory trade does not exact a uniform yield from the continental elephant population. Rather, poachers concentrate on the easily accessible elephant populations, which all too often prove to be those within National Parks and Reserves.

The elephants may then be cut down until they reach such a low density that the diminishing returns make it no longer worthwhile for the poacher to mount an expedition. In countries where the minimum basic wage is a few hundred dollars a year, the elephants may have to be few indeed before this point is reached.

Unfortunately, by the time they are that few, one of the good reasons for the maintenance of any part of their territory as a National Park or Reserve has also been removed, and then pressures may mount to have the "protected" land degazetted and handed over to some other form of use. This may well prove to be the fate of parts of the Tsavo National Park.

Thus, while the short term threat may be killing for ivory, in the long term the most serious threat to elephants will be the loss of their habitat. On this Parker and I agree. It follows that the major challenge for conservationists will be to defend the territorial integrity of existing or proposed National Parks and Reserves. The first recommendation of the report is to increase the support for the National Parks of Africa, and specific suggestions follow in the recommendations. For the short term, however, the problem of regulating the adverse effects of the ivory trade remains.

C. On Regulating the Trade

1. Pressure Points

The trade in ivory begins in many hands and progressively moves into fewer hands, especially when it crosses frontiers and finally leaves the continent, after which it gradually passes into commerce among more parties.

The existence of bottlenecks in the trade provides pressure points where controls could be most effective. These controls should be effective from the moment that the ivory leaves the hands of the poacher.

As the late David Sheldrick (former warden of Tsavo National Park in Kenya) remarked at the height of the ivory poaching in 1973:

> "the dealers are the weak link in the whole chain. There are comparatively few of them and they are all well known. Furthermore, they are very vulnerable while collecting and transporting trophies . . . what is needed is an incorruptable, dedicated team of investigators to run these people to earth. If dealers can be eliminated the entire network will be disrupted, and poaching once again would be reduced to manageable proportions."

In 1978, Kenya banned all the trade in ivory, and the government's intention is to destroy all private trade in ivory. Even now the illegal trade continues, but the ban has knocked out the majority of dealers.

Similar trophy trading bans and the abolition of all collectors and buyer permits in other countries such as Cameroon, Zaire, CAE and Congo would be a major step towards bringing the trade under control.

The only way to counter the wide ivory trade is for united international action. The Convention on International Trade in Endangered Species (CITES) provides the framework but, in addition, there is a need for a fully cod police action against the illegal traders. It should mean throwing open all the accounts, documents, and trade secrets of the companies dealing in ivory. Searches made through the documents attached to finance of the trade would be very revealing.

The greatest need is for better exchange of information. A special operative travelling between producing and importing authorities, armed with the necessary authority, could be highly effective in identifying illegal ivory and providing the authorities with leads which would result in more frequent seizures and prosecutions. Illegal exports would be greatly reduced if the signatures authorized to appear on export documents were limited to not more than three, and then circulated to importing countries. Direct feedback to the exporting countries on every consignment of ivory should also be instituted.

2. Self-regulation

The question of whether or not the will or ability exists within the ivory trade for self-regulation was one of the questions which this survey intended to answer. Parker found that the Hong Kong traders themselves were skeptical, on the grounds that some traders would break any common rules, and furthermore, that Japanese traders would be unlikely to cooperate. Nevertheless, Parker recommends that an association could be formed to serve as a channel for communication with producers, law enforcement agencies and conservation people, as well as serving the interests of the traders themselves, and regulating the trade offtake of ivory.

If the traders are genuine, then one of the first acts of the association could be to impose an effective moratorium on all Zaire, Central African and East African ivory which they know to be illegal, and to give information for the apprehension of ivory traffickers. However, after such a draconian action it is doubtful if there would be enough ivory left to sustain their businesses.

The ball is now in the trader's court. Based on the experience of the International Whaling Commission, I doubt the likelihood of meaningful controls. As Parker points out, some of the deals are worth hundreds of thousands or millions of dollars and "wealth of this order will bypass the system if it has to". However, given a director of sufficiently wide knowledge of both conservation and the trade and an integrity beyond question, it might just work.

3. Trade Bans

A unilateral ban on ivory imports by the U.S., in terms of its direct effect on world ivory trade, would be relatively insignificant. Of much greater importance would be the political impact. In my testimony at the Merchant Marine and Fisheries hearing in July 1979 held to discuss a bill to introduce an "Elephant Protection Act", I recommended the need for full consultation with African Governments to explain the intentions of the U.S. Bill.

Parker has raised objections on the grounds that such proposals tend to raise the price of ivory, due to a speculative rush to beat the ban and, secondly, that the intention to devalue a resource of Africa is unethical.

If the price rises are indeed caused by publicizing the plight of the elephant, this is a regrettable consequence which must be faced. The conservationist is in a dilemma: remain silent and avoid increasing the ivory exploitation or expose the overexploitation of elephants and risk an ivory rush. Since ivory rushes are likely to be of short term duration, in my opinion they do not justify the suppression, which is against Western traditions of a free press and would be difficult to execute.

The second point I do not feel holds water. Apart from one country, the CAE, which according to its own account is exploiting the illegal exports of ivory from surrounding countries, there are no countries in Africa (with the possible exception of Tanzania) which depend to any significant extent on the production of ivory. For the main part, ivory is too small a fraction of gross national exports, i.e. less than 1%, even to be listed with other commodities. In any event, the ivory trade bans do not intend to devalue a resource, but rather to ensure the survival in meaningful quantities of the elephants of Africa.

The bill has also been criticized on the grounds that the U.S. leadership was not asked for and therefore should not be offered. On the question of U.S. leadership, I believe that there are many harassed wildlife officials in Africa who would welcome an outside expression of interest. Many are fighting a lonely losing battle against general government indifference, and they look abroad for encouragement and support. If a country such as the U.S. shows an

interest in their field of responsibility, especially if backed by practical ideas of how the U.S. intends to help, the real effect could be immense. The interest of the U.S., if properly explained at a top governmental level, could also help to create a political climate more favourable to the wildlife departments, in which their resources might be more freely employed to intercept contraband ivory without interference from vested interests.

U.S. leadership is also of consequence in objecting to the cruel effects of the trade which leads to untold suffering and misery of these magnificent, intelligent creatures. The long drawn out agony of an elephant whose leg takes weeks to rot after the lodging of a poison arrow should be an unavoidable ethical consideration for those who trade ivory. Typical incidents are shown in Simon Trevor's film "Bloody Ivory" which will soon be released.

Providing the sponsors of "The Elephant Protection Act" seek the advice of African Governments, make reasonable exceptions for legitimate special interests, and introduce meaningful support for the National Parks system of Africa and the CITES, it could prove to be a great positive step in the conservation of Africa's elephants.

From what I have stated, it follows that I do not share Parker's antipathy for the "ignorant and hostile" Western conservationist press. It would appear that they have been far less ignorant of the activities and effects of the ivory trade on elephants than the trade has itself.

Furthermore, I must dissociate myself from the comment that motivations behind efforts to eliminate the U.S. from the world ivory trade are dubious at best. My belief is that, for the main part, these efforts have been made in the best of faith in the belief that they will ultimately help elephant survival, which indeed they may.

Whatever regulations are put into effect, Parker and I would recommend that they should be in harmony with CITES.

In the following section the recommendations I have made have taken into account Parker's suggestions, the U.S. Fish and Wildlife Services comments following the July Hearings, and elements of the IUCN/WWF/NYZS "Elephants and Ecosystems" Action Plan. (See Appendix 1, only excerpts of this Appendix are included, see preceeding article.)

VI. RECOMMENDATIONS

My recommendations for controlling the trade in ivory so as to lessen the adverse effects of the trade on wild elephant populations fall into two parts. First, the protection of elephants and their ecosystems in protected areas, and, secondly, the control of the international trade in ivory.

A. Support Elephants and Ecosystems Programme

1. Develop through USAID National Management Plans centered on National Parks for the elephant and wildlife resources, including direct support for

increased manpower and anti-poaching measures. Technical experts could be provided.

2. Support training of African National Park and Wildlife Personnel at establishments such as the Colleges of Wildlife Management at Garoua, Cameroun, and Mweka, Tanzania. Establish training also in America. Advice on how to do this could be sought from NGO's with experience, such as the African Wildlife Leadership Foundation in Washington.

3. Establish and fund grant programs to send U.S. scientists to Africa to perform research and conservation work identified in the IUCN Elephants and Ecosystems Programme.

4. Carry out essential elephant surveys where urgently needed, e.g. Kabalega Park, Uganda; Gourma, Mali; Zemongo Reserve, Eastern CAE; Southern Cameroon; Northern Zaire; Luangwa Valley, Zambia. The IUCN Elephant Survey and Conservation Programme could lend assistance.

5. Encourage Peace Corps to resume its invaluable role in environmental projects which has recently been curtailed. Peace Corps has helped develop National Parks and gather basic information for management of wildlife and could do the same in helping to monitor CITES.

6. Proposals of a specific nature are identified country by country in the IUCN/WWF/NYZS Elephant and Ecosystems Action Plan, of which specimens for Tanzania and Malawi appear in the Appendix.

B. Regulation of the Ivory Trade Through CITES

The second, and equally important, recommendation is that control of the trade should be strengthened through the application of CITES. (At one level this needs united international action in order to apply the treaty through combined police action, to search through the finances of the ivory trade companies, and to apply police methods to catch illegal traffickers.)

1. Encourage CITES ratification and offer technical and financial assistance (Include funding authorization in the "Elephant Protection Act".). State Department could play a useful role.

2. Provide funding for CITES Secretariat to gather and analyze data on world trade and enforcement problems as a continuation of this study.

3. Underwrite the cost of the CITES expert committee on the harmonization of permit forms and associated enforcement problems. Introduce a simple system of permits specifically for ivory. These should be internationally uniform, and should be difficult to forge. They should be similar to security documents and signatures in each country of origin should be limited to three people. They should identify the real exporters and importer. Pseudonyms and transit warehouses should not be acceptable.

4. Provide travel and other funding for regional meetings, workshops and consultations with foreign governments with the aim of setting up the scientific and management authorities as effective bodies.

5. Introduce an international system of marking ivory following Parker's suggestions, whereby a hole is drilled through the tusk hollow on the inner side of the curve, and a metal disc is then rivetted through the hole with a standard 'pop-rivetter'.

6. Consult with African Governments before banning the import of ivory to the U.S.

7. The U.S. Fish and Wildlife Service should follow up this survey with a report which should consider:

- practicality of enforcement, especially with regard to re-export of ivory products.

- the benefits of restricting trade to CITES parties against the benefits of total bans.

- appropriate exceptions to controls, particularly sport hunting, scientific uses, properly controlled culling or cropping programmes, and the avoidance of loop-hole development for trade purposes.

VII. SUMMARY

The ivory trade study fall into two parts. The first section concerns trends in elephant number, the West and Central African ivory trade, discussion and recommendations. It draws on the second section, containing the bulk of the study in 4 Volumes, written by Ian Parker. Through the endeavours of many writers, researchers, and officials we review the history and trends of the ivory trade.

It appears that after many decades of quiescence the demand for and price of ivory erupted in the early seventies causing a rebirth of the ivory trade and exports from Africa of an order which had not been seen since before the First World War.

Parker has identified the price rise as a new recognition of ivory as a rare and valuable substance, both in its raw form and as a work of art, suitable, like gold, as a wealth store. Also, like gold, its price rise has probably been triggered by world financial instability.

The surge in trade has led to excessive killing of elephants, especially in easily accessible ranges, where there has been a breakdown in law enforcement. Some of East Africa's better known National Parks have been depleted of elephants in this way. Evidence is presented to suggest that the East African declines are matched elsewhere in the continent, especially in Central Africa, where at present the main brunt of the killing involves bulls with large ivory.

While the African elephant as a species is not endangered, it is threatened locally and regionally by the ivory trade. In the long term a greater threat is competition with man for habitat.

The best way of conserving elephants is to build up or reinforce existing or proposed National Parks which lie within their range. United international action is also needed to control the trade in ivory through the wider application of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the stricter application of existing laws.

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