1.2 Investigate the movement of rhino horn within Africa.

1.3 Examine and compare information on the decline of rhino in Africa with information on rhino horn entering the trade.

2. **Ivory.**

2,1 Complete surveys of the ivory trade and ivory carving industries within Africa.

2.2 Complete the computer modelling of ivory yields and harvesting strategies undertaken by Pilgram and Western and add an economic model to the population models.

Since the Botswana meeting there has been progress on some aspects of the action plan. Richard Barnes has started his studies on forest elephant in Gabon. An aerial census of elephant and rhinos in parts of CAR has been completed by lain Douglas Hamilton and the reports indicate greatly depleted elephant populations and an absence of black rhino in areas where they were formerly abundant. Recent reports from Jean-Marc Froment and Clive Spinage suggest that black rhino may very soon be extinct in the CAR. The only other populations of the subspecies **Diceros bicornis longipes** are those in the Cameroun. Aerial surveys in the Luangwa valley have been conducted by Gilson Kaweche and Dale Lewis and these reveal further declines in the elephant populations of the Luangwa valley. On trade issues Esmond Martin has completed his study of the ivory trade in Malawi and has started a study of the ivory trade in Zambia. World Wildlife Fund have allocated funds for a project to alert doctors and pharmacists in the Far East to the plight of the rhino in an attempt to persuade them to stop prescribing rhino horn. This programme will be conducted by Esmond Martin in his capacity as a consultant to WWF.

A major development since the Botswana meeting has been the initiative taken by Governments in Africa Who, in collaboration with the CITES secretariat, have agreed to establish a quota system for the export of ivory. They have also endorsed a proposal to establish a unit within the CITES Secretariat which will monitor all international transactions in ivory. These two major developments follow the consultancy completed by Rowan Martin for CITES and in which many members assisted with information and advice. The new system only comes into operation next year and we have still to see to what extent it will serve to promote the conservation and legitimate utilisation of one of Africa's major wildlife resources as well as curb the continuing elephant poaching and illegal trade in ivory.

The preservation of viable populations of rhino in the wild in Africa remains a dominant challenge. Black rhinos in Africa now probably number less than 9 000. The catastrophic decline of black rhino in the CAR and the recent upsurge in international commercial poaching for rhino horn in Zimbabwe is indicative of the threats that persist. Since the article by Dick Pitman and Glen Tatham was written a month ago the tally has risen to 51 rhino killed by poachers since January this year. White rhino have become extinct in Mocambique for the second time and their numbers in the wild outside South Africa are not showing any great increase. The formulation of National Strategies for the conservation of rhino is more important than ever. Equally important are the studies on illegal trade and the political initiatives proposed by the Wankie (now Hwange) meeting in 1981 some of which have still to be actioned.

David Cumming

The aim of PACHYDERM, the AERSG Newsletter, is to offer members of the group, and those who share its concerns, brief research papers and factual articles on conservation matters of topical interest related to elephant and rhino conservation in Africa. Brief items of news on recent developments in the conservation of elephant and rhino are also welcome.

Readers are reminded that material published in PACHYDERM does not necessarily reflect the views of IUCN, SSC, AERSG, nor those organisations supporting AERSG and the publication of the Newsletter.

We will welcome articles of up to 3 000 words for the next two issues of PACHYDERM. Deadlines for submission will be the 6th December, 1985, and the 16th May, 1986, respectively. We will publish suitable black and white photographs and graphics and may edit articles. Research papers may be refereed.

David Cumming
Editor

The Elephants of Burkina-Faso, West Africa

C.A. Spinage

Project UPV/82/008, c/o UNDP, B.P. 575, Ouagadougou, Burkina-Faso.

Burkina-Faso, formerly Upper Volta, is a country of 274 200 km^2 situated in the centre of western Africa surrounded by Mali, Niger, Togo, Benin, Ghana and the Ivory Coast. Approximately 10% of the country lies in the sahelian zone with a rainfall of 500 to 600 mm per year during normal years; 59% is in the soudanian zone with a rainfall of 600 to 1 000 mm per year, and 31% is in the soudano-guinean zone with a rainfall of 1 000 to 1 200 mm per year. There is a long dry season from October to April. For the most part the country is flat, covered with a woodland vegetation dominated by **Terminalia** species and fire-induced grasses such as **Hyparrhenia** species. The fauna is typically West African, characterised by roan antelope, western hartebeest and Buffon's kob.

There seems to be scanty information on the previous history of elephants in this country. Formerly a French territory comprising part of the A.O.F., or Afrique Occidentale Francaise, the first game law, dated 14.11.1913. provided for the control of elephant hunting, allowing expatriate hunters a maximum of five elephants on licence per year. The next law was not until 1925 when a general hunting and wildlife law was passed, which also made provision for the first parks in the A.O.F. In November1973 elephant hunting was forbidden for five years, the ban being renewed for a further five years in June 1979. This was superseded by a law in December 1980 banning all hunting until further notice. No reference in these laws was made to any ban on trade in ivory or other elephant products.

The elephant is the savanna elephant, the country being outside the tropical forest zone. Those that I have seen appear to be large, but the tusks are always small. This is probably due to a long history of hunting pressure which does not allow the elephants time to mature. The area is in the West African "firearm zone" where firearms and elephant hunting have probably existed since well before colonial times. Roure (1968) states that the elephants in the south-eastern area, in the region of the 'W' National Park, were heavily

hunted until 1947 by bands of Haussa and Djerma armed with home-made guns which fired poisoned arrows; although Urvoy (1929) refers to "some teams of Bariba hunters" hunting along the MÈkrou river (the river which runs through the 'W' National Park) where they had named seven camp sites at which they would be sure to find a herd. This author states that several "much rarer" Peulh and Dendis hunters ventured to the north. At this time the area was well populated with game due to the absence of people resulting from sleeping sickness, onchoceriasis and tribal wars.

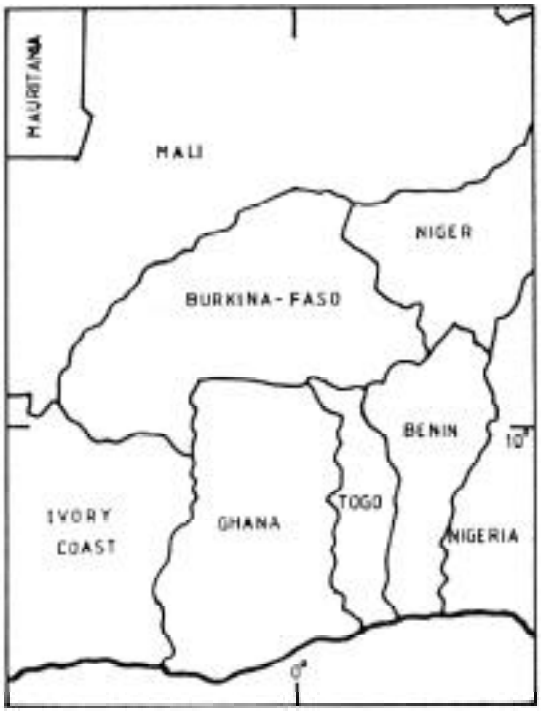

Figure 1. Location map of Burkina-Faso.

Roure refers to tusks reaching only 10 to 12 kg each in 1968, and the largest that I have seen were of the order of 15 to 16 kg found in PÙ National Park in 1976. Of 62 pieces in government custody dating from before 1982, the mean weight is 3,9 kg. A male skull in the Singou area which I estimated, extrapolating from Law's criteria, to be 28 years of age, was calculated at 29 years of age from the diameter of the dry tusk alveolus.

Apart from attempts to estimate numbers in the Deux-BalÈ forest or woodland (Sihvonen 1974) and the PÙ National Park (Heisterberg 1977), the first large-scale attempt was that of an FAO project in 1981-82. This gave an estimate of 2 500 for the whole country, of which 1 700 were estimated to occur in the south-east; 600 in the south-central region, and 200 elsewhere, The total could be a fifty percent underestimate when the small numbers which are scattered in the western part of the country are considered, as well as the seasonal incursions both in the extreme north and in the south-west. The distribution map (Fig. 2) suggests that there may be five groups; one based in the 'W' National Park in the east, dependant on the MÈkrou river, one on the river Singou, one on the Red Volta river in the region of PÙ National Park and the Sissili river at Nazinga; one on the Black Volta river in the region of the Deux-BalÈ forest, and a further population based on the Black Volta river in the region of the Mare aux Hippopotames, or Lake of the Hippopotamus. The country-wide estimates from the ground and aerial counts are given in Table 1.

The Singou river dried out completely in 1984 and probably accounted for elephants being seen in the Arli reserve in the dry season where Green (1979) reported them as only occurring during August to December, or during the rains. According to Boy, who knew the area in 1950-56 and mapped the main elephant tracks (Fig. 3), and quoted by Roure (1968), there appeared to be two main elephant groups, one based on the MÈkrou river and one between the Kompienga and Doubodo (wrongly called Arli) rivers. The first group concentrated on the MÈkrou in the dry season but dispersed

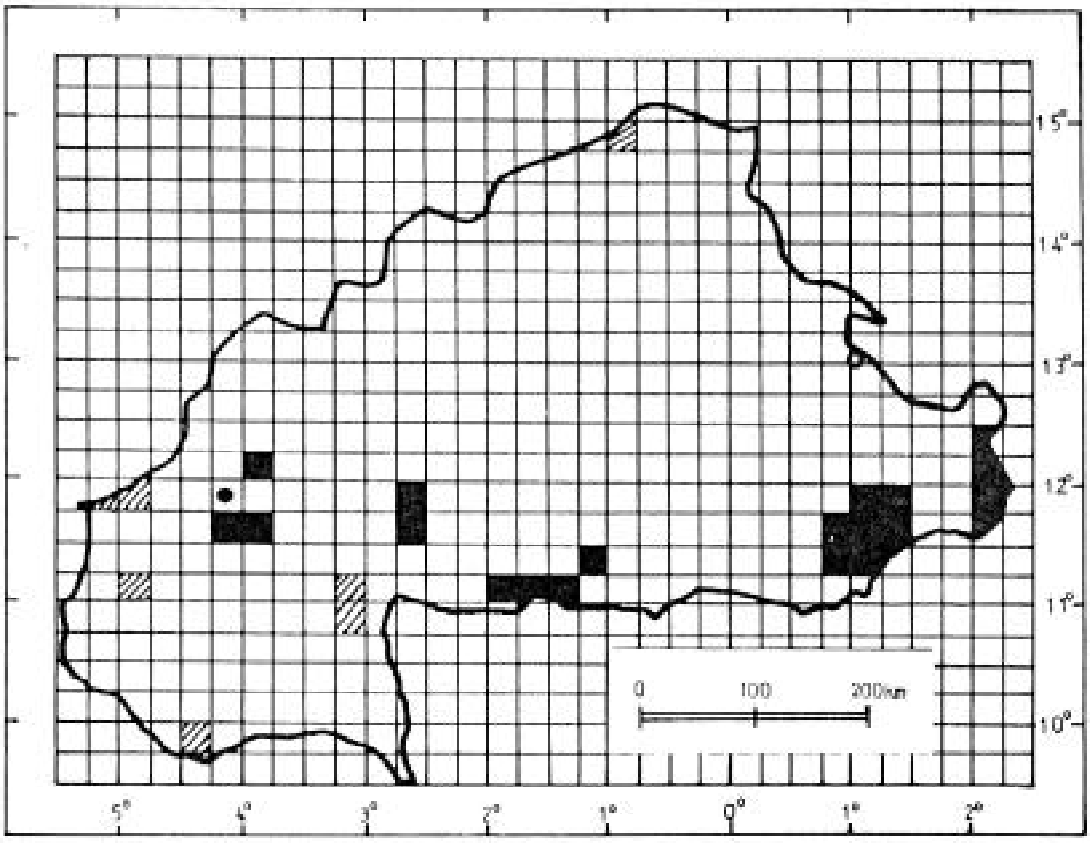

Figure 2. Known elephant distribution in Burkina-Faso. Blocked squares permanent populations; hatched squares wet season range; blocked circle last occurrence 5-7 years ago; open circle 14-20 years ago.

in all directions at the onset of the rains. The western group was found in the region of the Doubodo and Arli rivers in the dry season moving north and west at the first rains, one group allegedly travelling as far north as the Sirba river, 130 km distant, This latter

Table 1. Population estimates of elephants in Burkina-Faso from FAO surveys 1981–1982 Area

Area	Foot counts	Air counts	Density/km^2
'W' National Park	0	600 ± 340	0.27[1]
Arli region	0	0	0
Deux-BalÈ reserve	60	150 ± 180*	0.16
PÙ National Park	220	230 ± 600	0.25
Nazinga area	0[2]	500 ± 600	0.25
Singou reserve	–	590	0.30
Pama reserve	–	800	0.35
West Pama region	–	50	0.03
Total		**2920**	**0.21**

[1]end of dry season estimate is 260, density 0.11.
21984 foot counts (mean of three) gave 216herd is more likely however to have come from Niger and has not now been seen for 14 to 20 years, according to local reports. The two main groups still exist in these two zones, numbering possibly 600 and 1500 east and west respectively. The ribbed trunks of the baobab trees along the Singou river suggest that, perhaps twenty to thirty years ago, elephants were very numerous in that area; but on a visit in January 1984 I noted only two freshly-gouged trees along about 35 kilometres of river, and a few old half-gouged-out trees.

Between 1969 and 1983 elephants were only seen in the Nazinga area, to the south of the PÙ National Park, during the dry season, but remained there throughout the year in 1984, while at the same time the majority seems to have left the Pô National Park. In 1973 Heisterberg estimated the Pô Park's population to be 250, with a mean group size of 7.4, and considered that the park would reach its carrying capacity, which he put at 350 elephants, in 1980. However the 1982 census suggested that the population had remained stationary in numbers, with a total of 230.

Olivier (1983) has referred to the Malian Gourma elephants which visit the northern extremity of Burkina-Faso in the wet season around the month of August, where they are allegedly hard hit by poachers. This is, however, unlikely, as there is limited travel in this region during the rains and Benoit (1984), who has studied the area in some detail, categorically states that they are not hunted in Burkina-Faso. According

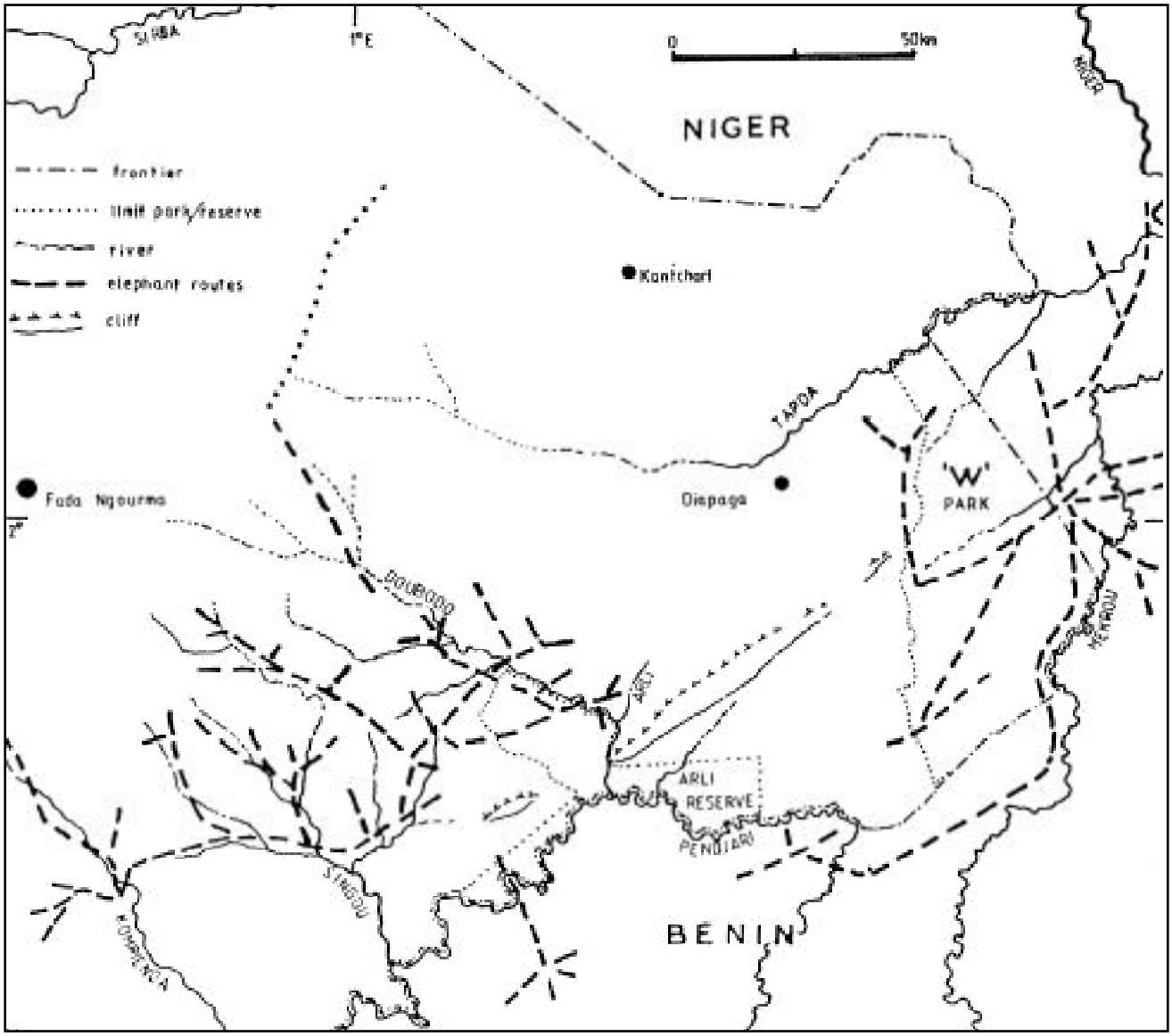

Figure 3. Movements of elephants in the southeast 1950 to 1956, modified after Boy (1956).

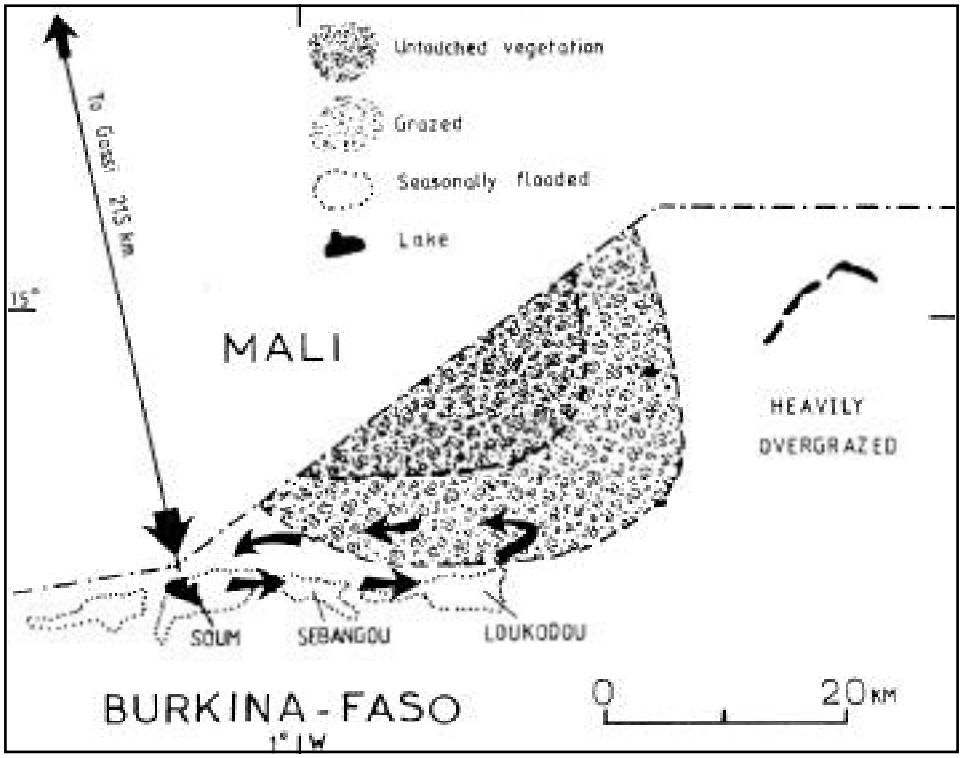

Figure 4. Alleged movements of the Gourma elephants in Burkina-Faso during July/August to September.

to this author, a herd of one to two hundred follows a set itinerary, possibly from Lake Do on the Niger river in Mali, via Lake Gossi, to Lake Soum in Burkina-Faso. Here it splits into small groups visiting Lakes Sebangou and Loukodo (map Fig. 4), and a little lake called Fété Tilloki. This migration appears to be long-standing since an old herdsman related how, when he was a small boy, his herd of cattle was charged by an elephant at Lake Fété Tilloki, this being about 1910 to 1915. In September they return to Lake Soum where they regroup before returning north. Benoit considers that they mostly browse in the region and must have suffered during the drought of 1973, but the **Anogeissus-Mitragyna** woodland which they frequent is also in the process of being destroyed through misuse. Part of the region that they traverse contains the last remnants of sahelian vegetation in Burkina-Faso as it is unexploited by pastoralists due to lack of water in the dry season. There are however continual pressures to develop a well in the area, which would mean the destruction of this last remaining natural vegetation.

There are no studies as such on elephants in Burkina-Faso apart from a brief study of the feeding habits of elephants in the PÙ National Park conducted by Christenson in 1976. 35 percent of all trees in his study plots showed evidence of use of elephants. Species observed to be fed upon were: **Mitragyna inermis,** young **Daniellia oliveri, Vitellaria paradoxum, Lannea acida, Piliostigma thonningii, Gardenia** species, **Tamarindus indica, Lonchocarpus laxiflora, Balanites aegyptiaca, Combretum** species and all **Acacia** species. Young **Detarium microcarpum** were uprooted at the beginning of the rains and the roots eaten. **Balanites** was recorded as being particularly preferred but not very common in the area. Every baobab showed signs of tusking, and many were in advanced stages. In 1976 three fell due to tusking alone, and one due to fire plus tusking. The other favoured tree for de-barking was **Burkea africana,** with 50% of trees greater than seven metres tall dead from this cause. Regeneration of this species was however good and Christenson calculated overall tree mortality at about 0,5 or 0,75% of the total population; a very low estimate compared with some other areas of Africa.

The extent of poaching is difficult to assess. It is certainly increasing but there is no organized, large-scale poaching. Perhaps 200 elephants are taken per year throughout the country. Small amounts of ivory are on sale in the capital Ouagadougou and in Bobo-Dioulasso, the next largest town. Probably not more than 50 to 100 carvings are available in the former town, and perhaps 100 or so bangles. A carved tusk about 15-20 inches long costs about 120 dollars, asking price 200 dollars. Pieces about 8 inches high are about 60 dollars with an asking price of 100. Bangles likewise cost from 12 to 50 dollars, the price depending on the skill of the bargainer. Carving is limited in design and generally not attractive. All carvings are of small tusks of elephants probably 4 to 6 years old. Probably most poached ivory is exported.

Burkina-Faso has a growing human population of over six million inhabitants and is classed amongst the poorest nations of the world, while the increasing drought of recent years has compounded its problems of land misuse and malnutrition. Official policy is nevertheless to preserve its remaining elephants, but such preservation can only be effective with outside financial support.

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