

# Mali's Elephants Suffer in Drought

Mali and Mauritania boast the continent's most north-westerly elephant populations, which survive as tiny remnants in marginal habitats bordering the Sahara. Of these, by far the largest (and the only one with any long-term survival prospects) is the population of about 600 that, apart from a brief spell in Upper Volta during the rainy season, ranges most of the year in an area of Mali known as the Gourma (see map). Their annual movements are believed by some observers to approach 800 km, which if substantiated would be easily the longest elephant migration recorded. The Gourma elephants are thus of considerable scientific interest, and their study is of value to elephant conservation and management elsewhere in Africa.

In 1959 the Government of Mali declared a 12,000 km<sup>2</sup> Elephant Reserve in the Gourma. The only relevant management prescription was the banning of all elephant hunting which was allowed elsewhere on licence at the time. Since Mali's total hunting ban of 1978, however, the management status of the reserve had become no different to its surrounds. Subsequently, international concern for the Gourma elephants has been expressed. For example, in 1980 an IUCN/ UNEP Technical Meeting issued a resolution calling on the Government of Mali to protect the Gourma elephants. In 1981, political and government action in relation to the Gourma elephants was one of the highest priority recommendations of the Wankie meeting of the IUCN African Elephant and Rhino Specialist Groups.

Although poaching of Gourma elephants by urban Maliens used to be of concern, poaching is not currently believed to pose a significant threat, although some, reputedly organised out of Upper Volta, does occur and the animals are rumoured to be relatively hard hit during their sojourn in that country. According to an Ouagadougou-based FAO wildlife expert, however, elephant poaching in Upper Volta is negligible. Nevertheless, it is generally agreed that given present levels of law-enforcement capability, and the current state of the ivory market in terms of supply and demand, poaching of the Gourma elephants will become increasingly serious within Mali as access to the area improves, although there is little evidence of this yet. At present the extremely limited availability in the Gourma of late dry season surface water poses a threat, which may have accounted for up to 40 deaths this year. In the long-term however, plans to develop greatly the area's livestock potential pose the most serious threats to the Gourma elephants.

The elephants currently share their 33,000 km<sup>2</sup> range with some 379,000 cattle, sheep, goats, donkeys and camels, as well as over 100,000 Tamasheq (Taureg) and Pheul (Fulani) pastoralists. The area is characterised by a single peak monsoonal rainfall regime in which a short summer rainy season (June to September) is sharply contrasted with a long dry season. Mean annual rainfall in the elephant range varies from about 550 mm in the south to 300 mm in the north. The herbaceous and woody components of the vegetation are dominated by annual grasses and deciduous species (from genera such as *Combretum* and *Acacia* respectively). For much of the year elephants are apparently heavily dependent on browse. There are no permanent rivers in the elephant range and for several years now some shallow lakes associated with the Niger's seasonal inundation zone have remained dry.

Thus, as the dry season progresses the elephants fall back on the few remaining sources of surface water of which there will be only one or two in a bad year.

Although livestock and men have access to wells and bore-holes also, these too are few in number, and it is generally agreed that the overall scarcity of dry season water is responsible for the grazing potential of the Gourma being greatly under-utilized. The development of the Gourma as an important livestock range through provision of more and better distributed dry season water has, therefore, been a long-cherished ideal of the government and with help from the World Bank and others this, and the consequent transformation of the area's ecology, is about to be realized.

One of the traditionally important elephant concentration areas in times of acute water shortage is a water hole known as Banzena. By March 1983, Banzena was the only source of surface water in the western Gourma and hosted several hundred elephants. In mid-April an early rain fell to the east and north of Banzena, causing the elephants to disperse. Evidently the rains were ineffective and the elephants found little water in the dispersal area, save that which could be taken from small wells dug by the local people in dried-up lake beds. The competition between man and elephant at such sites was considerable —many wells were destroyed, elephants got stuck in wells where some died, and at least one man was killed by an elephant. Elephants were reported dying of thirst over a large area. By early May, Banzena held only mud and dead and dying elephants.

On 13th May 1983, UNEP received an urgent telex from the Ministry of Foreign Affairs and International Cooperation in Mali outlining the situation, which was expected to worsen during June, and appealing for assistance. In response I was sent to Mali from 6th to 17th July 1983, in order to give a full report to UNEP on the situation and to recommend appropriate action to the Government.

I concluded that despite an apparent excess of supply over demand in the gross primary production of the ecosystem, the size of the elephant population may be close to its effective elephant carrying capacity. While there is evidence that the animals are well adapted to the constraints of the ecosystem, it is doubtful they could adapt very much further. The scarcity of dry season surface water, and the seasonal overexploitation of its immediate surrounds, are probably the underlying factors regulating the elephant population, not infrequently through the medium of drought related mortality. If present conditions persist or deteriorate, the vulnerability of the population to extinction will increase yearly.

In the short-term, proposed water development in the Gourma should sharply reduce the incidence of drought related mortality. In the long-term however, if there is no corresponding control in livestock numbers, the situation could soon revert once more, though with considerably less room for elephants. Developments affecting the traditional dry season concentration areas and crisis refugia of the elephants are especially significant. Any permanent displacement from such habitats would have an extremely adverse impact on the elephants.



Figure 9. Map of Mali showing the Gourma (striped area) and the National Park: La B ouck de B aoule (stippled area).

Unless appropriate integrated management of the elephant range is carried out, the future of the species in the Gourma looks extremely bleak. The long-term objectives of such management would be to maintain or increase the existing elephant population, while simultaneously increasing existing levels of livestock productivity in a sustainable manner. The approach can be justified on grounds of the local and international importance of the elephants, development of the nation's protected areas, tourism, employment, restoration of wildlife, sustainable livestock production, and sensitization of the Government and the public to conservation.

I recommend that the existing Elephant Reserve be redefined as a multiple use area (IUCN category 3) covering the majority of the Gourma elephant range and that within this, one or more sanctuaries (IUCN category 4) be established in critical habitats. Thus the elephant range can be divided into zones subject to varying intensities of management, each of which can be given legal definition under the provisions of existing legislation. An associated planning programme, culminating in a written management plan, is desirable.

Pending such a programme, two measures are urgently needed. The first is control (by the Direction Nationale des Eaux et Forêts (DNEF) over what is probably the area most critical to elephants, namely Banzena water hole and its surrounds. Here, a very productive bore-hole which was recently sunk threatens elephant access in the future. The second is the deployment of DNEF agents throughout the elephant range to enforce the law.

Rob Oliver

## South Africa Celebrates Rhino Successes

### Black Rhinos in Natal and South Africa

At a time when the black rhinoceros is under extreme pressure and declining rapidly over much of its range in Africa, it is encouraging to know that in Natal the reverse situation is found. This Province, lying along the north-eastern seaboard of South Africa, contains the active nucleus of the black rhinoceros population south of the Limpopo River. Since 1962, the Natal Parks, Game and Fish Preservation Board has provided rhinos from certain of the Zulu land reserves for re-introduction into other conservation areas within the former range of the species.

The importance of Natal's rhino was highlighted by Peter Hitchins in 1975 by his statement that of the 439 black rhinos in the Republic 400 occurred in Natal. While not very significant at that time in terms of the total population in Africa, the continuing decline of the species elsewhere has focussed attention on this population and its role in providing excess animals for conservation.

The current population in Natal stands at about 420, distributed between the Hluhluwe-Umfolozzi ( $\pm 300$ ), Mkuzi ( $\pm 60$ ) and Ndumu Game Reserves ( $\pm 30$ ), and Itala ( $\pm 25$ ) and Weenen Nature Reserves (4). Apart from the newly-

established populations in Itala and Weenen, the remainder have remained fairly stable over the last 10 to 15 years.

The three major Zululand Reserves of Hluhluwe-Umfolozzi, Mkuzi and Ndumu have provided the individuals for translocation over the years. Most have come from Hluhluwe-Umfolozzi, and it is here that the black rhino population has been most intensively studied.

A game count in 1961 produced a population estimate of 300 for Hluhluwe, with densities ranging from 0.6 to 1.7 rhinos/km<sup>2</sup>. The same year a population crash occurred in the north-eastern area of the reserve with 46 animals dying over a four month period. These events were reported by Peter Hitchins who also found that numbers continued to decline in Hluhluwe during the dry cycle of the late 1960s, so that by 1972 the estimate was 199. Over the same period numbers increased to about 129 in Umfolozzi. The overall density in 1972 of 0.36 rhinos/km<sup>2</sup> for Hluhluwe-Umfolozzi was still far higher than found elsewhere in Africa. e.g. Masai Mara Game Reserve 0.1/km<sup>2</sup>, Olduvai Gorge 0.002/km<sup>2</sup> and Ngorongoro Crater 0.004/km<sup>2</sup>. The response of the population over this period and the high