



# The elephants of the Gourma

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A synthesis of knowledge, research and recommendations

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## Table of Contents

Introduction	1
Context of the Gourma elephants	1
The elephant range	2
The elephant population	2
Elephant GPS collar data	2
Corridors and concentration areas	3
The need to migrate	3
Key resources of the north - water, thicket and the importance of Benzena	3
Key resources of the south - food	4
Elephant movement in relation to human presence and activity	4

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## Introduction

The Gourma elephant population is unique in Africa for three reasons: it is the northernmost population on the continent, it occupies an exceptionally harsh, arid environment and it owes its existence to historical co-existence with the people of the region.

The people and government of Mali have much to be proud of, in their preservation of this valuable cultural and biological treasure. However, pressures on both people and elephants are growing, and accurate knowledge is essential for the development of well-informed strategies if this population of elephants is to have a long-term future.

The aim of the initiative was to better understand:

- the current size, composition and status of the elephant population
- the ecological requirements of the elephants
- patterns of human activity and their influence on the human-elephant relationship/elephant livelihoods
- the location and severity of threats to their future

It is vital to understand the migration as a whole because events or changes occurring in one part of the elephant range have knock-on

effects that impact elsewhere, and are therefore invisible to those focusing on solutions in a small part of the range. Understanding the themes determining elephant survival is vital to be able to foresee these impacts and ensure effective policies, plans and activities.

## Context of the Gourma elephants

Elephants once occupied a largely continuous range across West Africa, from the coastal forests to the Sahara, but are now restricted to small, highly fragmented, geographically isolated populations, with over half containing fewer than 100 individuals. The elephants of the Gourma region in Mali are a notable remnant population, representing 12% of all West African elephants. Possibly because of the tolerance of local people, the isolation of the region, and their small, low-quality tusks, the population largely escaped the intense poaching of the 1980s, which extirpated all populations that once existed across the Sahel.

This population is the most northerly in existence since the extinction of the Mauritanian elephants in the Assaba mountains in the 1980s. As one of the most important in the West African region, it is accorded a high priority in the regional elephant strategy of the World Conservation Union.



This population of elephants has evolved a nomadic strategy that includes a unique migration circuit of 600km to cope with the



widely dispersed and variable nature of the Gourma's resources. The elephants lived in relative harmony with the peoples of the Gourma until the 1990s, but the recent trends of reduced rainfall, along with the spread of agriculture, ranched livestock, and settled human communities and water development programs, have changed the relationship between elephants, humans and the Sahelian ecosystem. Humans and elephants are now competing more heavily for the same resources (land, crops and water), and this is increasing conflict.

### The Elephant Range

Gourma elephants range throughout the year broadly within the bend of the Niger River in Mali southward to the border region with Burkina Faso, generally between 14.30°N and 16.50°N, and 0.55°W and 2.55°W. The elephant range can be thought of as being in two halves: the wet (south) and the dry (north) season ranges. The border between them roughly follows the RN16 between Sevare and Gao, the only metalled road in the region. The north is characterized by open sandy steppe and savannah with sparse trees, sparsely vegetated dune formations, and shrubby woodland stands occurring in bottomlands and drainage-ways. The south is

dominated by bands of low and relatively thick 'tiger bush' complex alternating with dune, open steppe and vegetated dune formations.

### The Elephant Population

Individual elephants were identified by the nicks and tears in their ears and the characteristic shape of their tusks. The population size is estimated at 550-700 animals. It appears to have remained more or less stable since the 1970s, and is neither increasing nor decreasing significantly at present. Compared to other populations throughout Africa, it is an old population with over 50% of the population composed of adults. It has a fairly high fertility rate but very high rates of mortality in newborns and young animals that are probably due to the harsh environment and long migration.

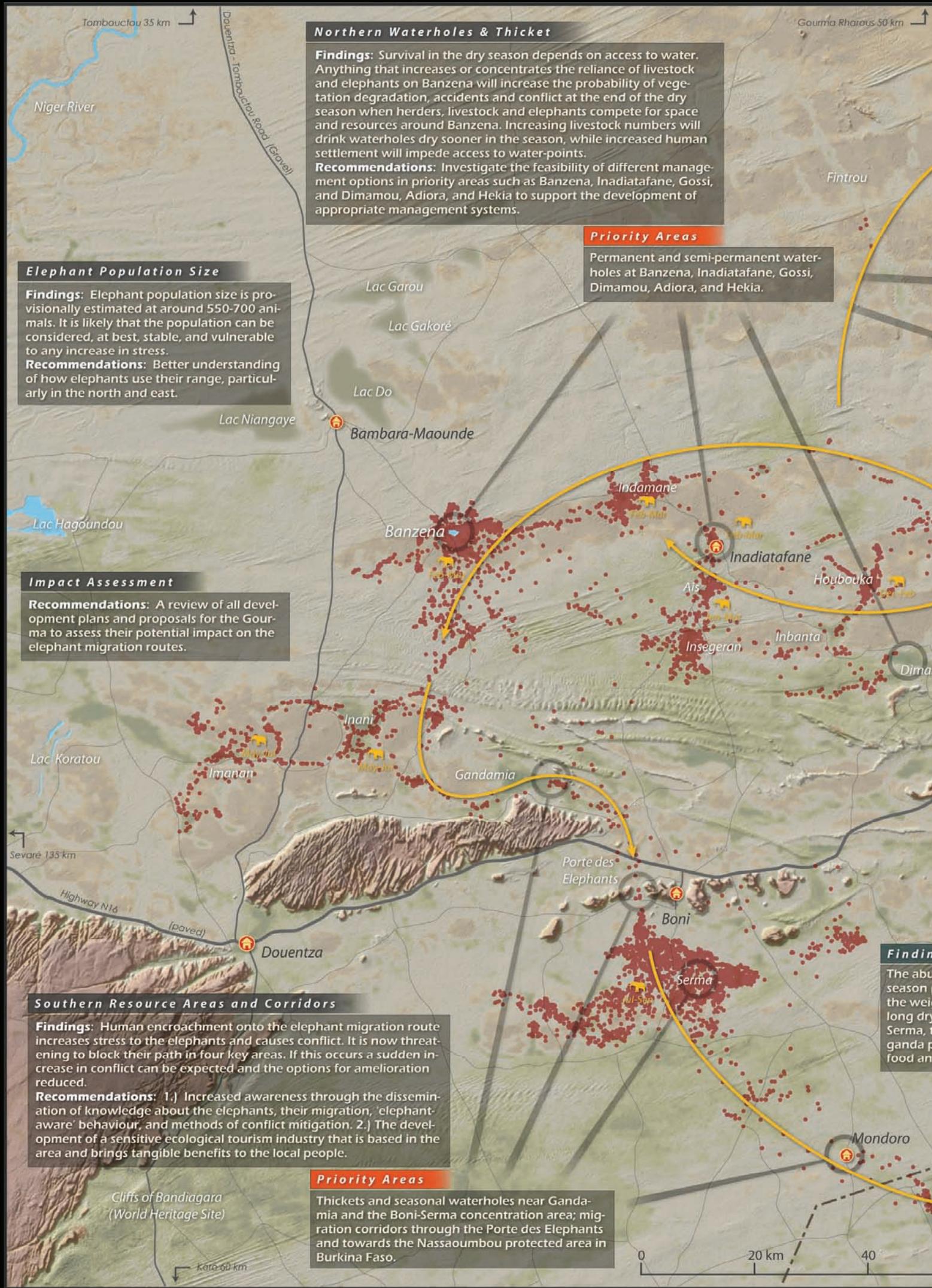
Such a population is vulnerable to anything that obliges the elephants to search further afield for food or water, and in particular to prolonged stresses such as drying climate or increased pressure from humans.

### Elephant GPS collar data

Three elephants were collared by Save the Elephants: two females and one male. This information showed how the elephants used their range over the period 2000/2001, where they went and how long they stayed there.







**Northern Waterholes & Thicket**

**Findings:** Survival in the dry season depends on access to water. Anything that increases or concentrates the reliance of livestock and elephants on Banzena will increase the probability of vegetation degradation, accidents and conflict at the end of the dry season when herders, livestock and elephants compete for space and resources around Banzena. Increasing livestock numbers will drink waterholes dry sooner in the season, while increased human settlement will impede access to water-points.

**Recommendations:** Investigate the feasibility of different management options in priority areas such as Banzena, Inadiatafane, Gossi, and Dimamou, Adiora, and Hekia to support the development of appropriate management systems.

**Priority Areas**

Permanent and semi-permanent waterholes at Banzena, Inadiatafane, Gossi, Dimamou, Adiora, and Hekia.

**Elephant Population Size**

**Findings:** Elephant population size is provisionally estimated at around 550-700 animals. It is likely that the population can be considered, at best, stable, and vulnerable to any increase in stress.

**Recommendations:** Better understanding of how elephants use their range, particularly in the north and east.

**Impact Assessment**

**Recommendations:** A review of all development plans and proposals for the Gourma to assess their potential impact on the elephant migration routes.

**Southern Resource Areas and Corridors**

**Findings:** Human encroachment onto the elephant migration route increases stress to the elephants and causes conflict. It is now threatening to block their path in four key areas. If this occurs a sudden increase in conflict can be expected and the options for amelioration reduced.

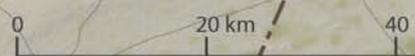
**Recommendations:** 1.) Increased awareness through the dissemination of knowledge about the elephants, their migration, 'elephant-aware' behaviour, and methods of conflict mitigation. 2.) The development of a sensitive ecological tourism industry that is based in the area and brings tangible benefits to the local people.

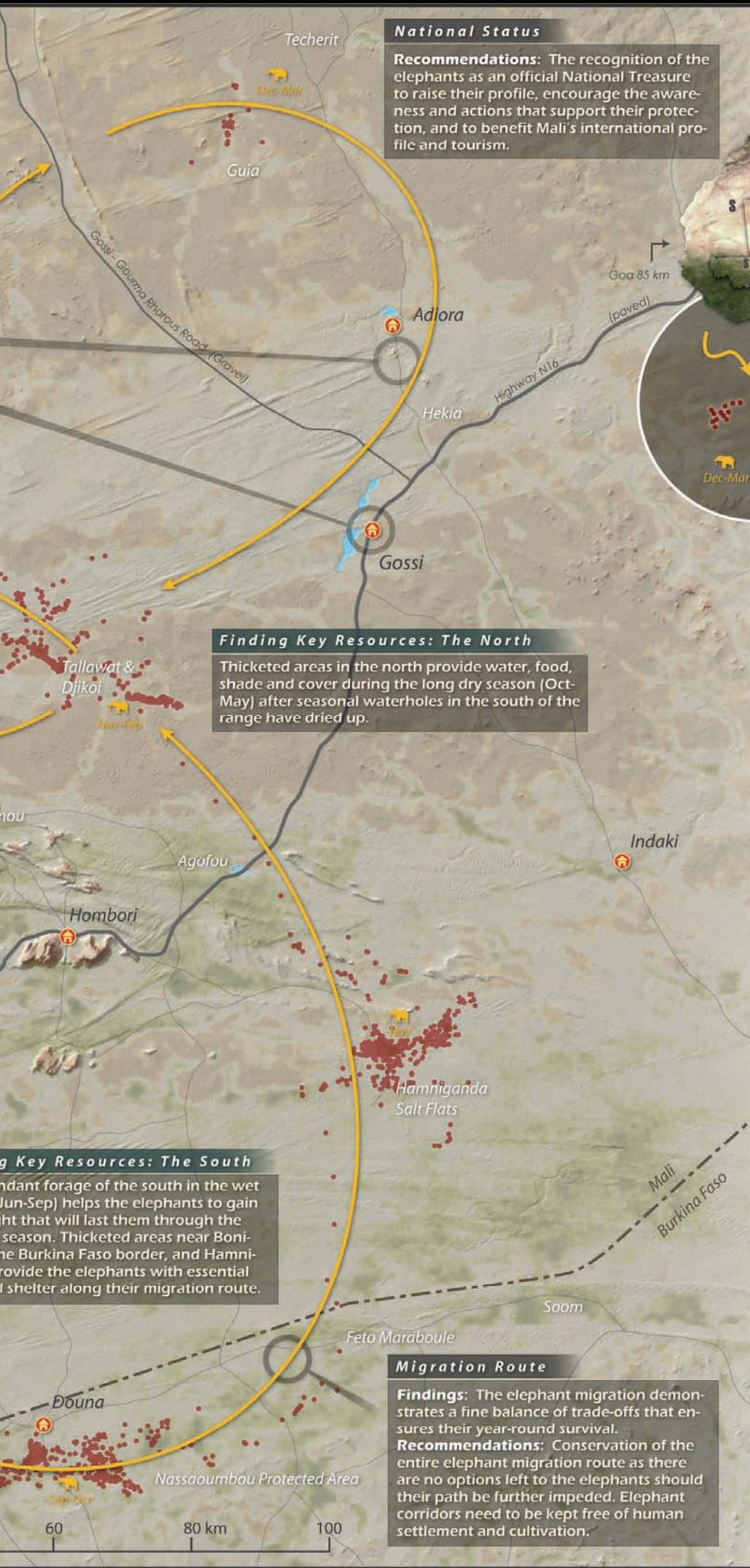
**Priority Areas**

Thickets and seasonal waterholes near Gandamia and the Boni-Serma concentration area; migration corridors through the Porte des Elephants and towards the Nassaoumbou protected area in Burkina Faso.

**Findings**

The abundance of food in the wet season (the weight of the long dry season) in Serma, the gandamia protected area and food and



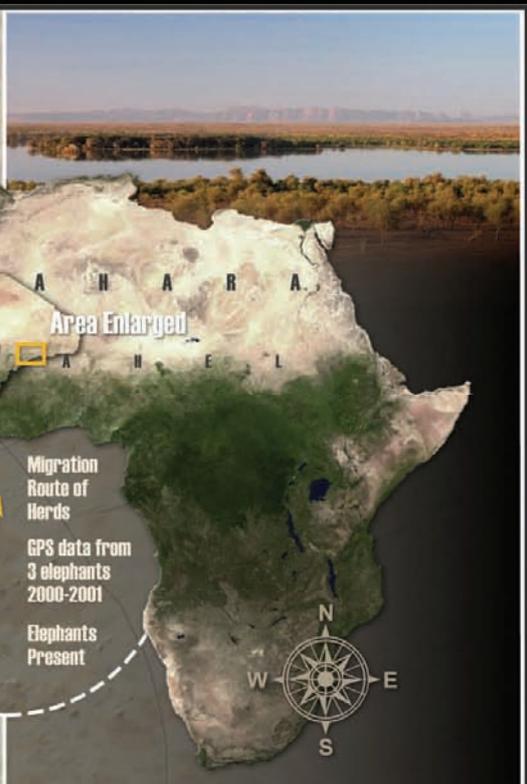


**National Status**  
**Recommendations:** The recognition of the elephants as an official National Treasure to raise their profile, encourage the awareness and actions that support their protection, and to benefit Mali's international profile and tourism.

**Finding Key Resources: The North**  
 Thicketed areas in the north provide water, food, shade and cover during the long dry season (Oct-May) after seasonal waterholes in the south of the range have dried up.

**Finding Key Resources: The South**  
 Abundant forage of the south in the wet season (Jun-Sep) helps the elephants to gain weight that will last them through the dry season. Thicketed areas near Boni, the Burkina Faso border, and Hamniganda provide the elephants with essential shelter along their migration route.

**Migration Route**  
**Findings:** The elephant migration demonstrates a fine balance of trade-offs that ensures their year-round survival.  
**Recommendations:** Conservation of the entire elephant migration route as there are no options left to the elephants should their path be further impeded. Elephant corridors need to be kept free of human settlement and cultivation.



**Mali Elephant Project**  
 Phase I : Findings & Recommendations



Data Provided by:  
 Save the Elephants

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 Mike Deutsch



1 November 2007

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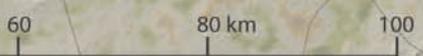


Direction Nationale  
 de la Conservation  
 de la Nature

Projection:  
 UTM Zone 30N  
 (WGS84)

**The Gourma Elephants**

The Gourma elephant population is unique in Africa for three reasons: it is the northernmost population on the continent, it occupies an exceptionally harsh, arid environment and, most importantly, it owes its existence to historical co-existence with the people of the region. The people and government of Mali have much to be proud of, in their preservation of this valuable cultural and biological treasure. However, pressures on both people and elephants are growing, and accurate knowledge is essential for the development of well-informed strategies if this population of elephants is to have a long-term future.





We do not know for sure how representative these elephants were of the whole elephant population, but we have combined these findings with a variety of other information gleaned from reports, personal accounts, and field work, in an attempt to shed some light on the elephants' world.

### Corridors and concentration areas

The GPS collar data indicate that elephants spend around 95% of their time in "concentration areas", where they congregate for periods of time, and that they move rapidly between these areas along "corridors".

Concentration areas are likely to possess resources of interest to elephants while corridors represent areas where elephants do not want to linger, either because there is nothing of interest or because they feel harassed or threatened. By examining and comparing concentration and corridor areas, we can understand what these important resources are, at what time of year they are important, and ensure that development does not inadvertently block elephant movement and create further problems for elephants and people.

### The need to migrate

Migration is a strategy for coping with variation in abundance and quality of food and water. In the harsh and variable environment of the Sahel, the ability to migrate and move is critical to elephant survival. Migration allows higher populations to exist than if the same animals are sedentary, and this applies for both wild and domestic species. Where such migrations have been impeded, animal numbers have declined drastically, often to a level where the population is no longer viable and dwindles

to zero.

### Key resources of the north – water, thicket & the importance of Benzena

Although the south of the elephant range supports more food resources, the water-holes are small and ephemeral, and the elephants are obliged to spend the dry season in the north where they can find water. The elephants move from lake to lake which dry out as the dry season progresses, eventually converging on Benzena, the last accessible permanent water.

Adequate food is also required to survive the long dry periods and the elephants rely heavily on the woody vegetation of the thicketed drainage ways and bottomlands



spending the vast majority of their time there, and mostly avoiding the dunes and plains. These vegetated bottomlands provide water, food, shade and cover making this a key habitat for their survival.

Studies of browsing pressure around Benzena raise questions about the trend in the woody vegetation, and the degree to which elephants, droughts, and human activities are contributing to its decline. This is important because a lack of food within reach of water can cause elephants to die of starvation at the end of the dry season. Anything that increases their reliance on Benzena, or causes them to

retreat there sooner in the dry season, will also increase the pressure on the vegetation here, and increase their vulnerability to starvation.

### **Key resources of the south – food**

At the onset of the rains the elephants migrate south where the forest, bush and grass, temporary pools and drainage lines and salt pans provide a rich variety of grazing, browsing, cover and salt. They need to eat enough to replenish their fat reserves that will enable them to survive on the meagre food of the long dry season, while the females need adequate fat reserves for reproduction and lactation. The Boni-Serma concentration area is of particular importance, particularly for the family herds, as is the passage through the Aire de Protection de Faune de Nassaoumbou in Burkina Faso.

### **Elephant movement in relation to human presence and activity**

Human presence, settlement and cultivation in the elephant range have had a significant impact on the elephants by:

- Displacing elephants from the centre of the range
- Impeding their access to water where, since the late 1980s, market gardens and settled infrastructure have been established around water-points in their dry-season range such as Gossi, Dimamou, Adiora, Hekia, and Inadiatafane. The family herds have not visited Gossi since the late 1980s, and the loss of access is likely to have increased the pressure on other water points, especially Benzena.
- Confining the elephants to small patches

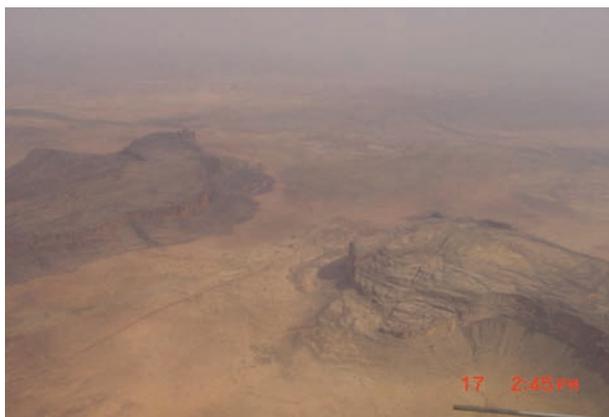
of critical habitat during the wet season.

This is particularly evident in the south-west. The Boni-Serma concentration area is virtually the only remaining area of their preferred habitat between the RN16 and the Seno sand dune that is relatively free of cultivation. If this area is closed to them, there is very little other place for them to use and conflict will increase dramatically. The quieter border area with Burkina Faso is also favoured but to reach it requires passing through cultivated areas.



- Blocking passage through the Gandamia hills to the food resources of the south.

At the beginning of the wet season, the elephants need to pass through the Gandamia hills to their wet season range. Records from the 1970s indicate that elephants used several passes through the hills at this time, but by 1990 they were mostly using only one of these - the 'Porte des Elephants' - due to increased settlement and cultivation in the other corridors. The Porte des Elephants thus represents a 'choke-point' in the migration and it is vital to keep it open to elephant movement.



for the elephants are reduced, there is the risk that sudden increases in conflict will occur. Once this happens the scope for reducing it are limited, and solutions are much more difficult to implement.

In the pastoral areas, there is sometimes conflict over access to water and accidents that occur when humans, livestock and elephants are concentrated around water. This is exacerbated by large numbers of livestock causing the semi-permanent lakes to dry earlier in the dry season thus increasing the dependence of the elephants on fewer water-points for longer, and on Benzena in particular.

The impact of small, incremental increases in stress is difficult to detect but reduces the ability of the elephant population to recover from a more acute stress such as a succession of drought years or the blockage of a key elephant corridor. Studies in other parts of Africa indicate that an incremental expansion of human impact reaches a threshold, at which point elephants move away. In this part of Mali, it is not clear that the elephants would have anywhere to move to that could provide all their requirements. As the options

The team of the Mali elephant project comprises the WILD Foundation, Save the Elephants and the Environment and Development Group in collaboration with African Parks Foundation, la Direction Nationale de la Conservation de la Nature, and with the support of the Embassy of the United States in Mali.

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Photos by Carlton Ward Jr. (www.carltonward.com), except those from the air and the central photo on the cover, which were taken by Iain Douglas-Hamilton (Save the Elephants)



Printing:



The Gandamia hills seen from Benzena  
Photo: Carlton Ward



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[www.edg.org.uk](http://www.edg.org.uk)

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[www.africanparks-conservation.com](http://www.africanparks-conservation.com)



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