

**A PRELIMINARY FAUNAL SURVEY OF SOUTH-EASTERN UNGUJA
(ZANZIBAR)- WITH SPECIAL EMPHASIS ON THE LEOPARD**
(Panthera pardus adersi)

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Preamble:

Zanzibar, part of a federation with mainland Tanzania, consists of several islands, the principal of which are Pemba and Unguja, and it is the latter which concerns us here. Lying some forty kilometres from the African mainland and extending over an area of approximately 1650 km², it is a low-lying island with the highest point being at 110 metres above-sea-level and two parallel, north-south running, ridges, Machui and Masingini, are the principal topographical features. The gently undulating coastal belt averages five to six kilometres in width and in the east it is dominated by what is known locally as *coral rag thicket*. The central and western areas of the island have the most fertile soils and therefore the highest human population densities, although extensive impacts are obvious throughout the island.

Of the 48 mammal species recorded from Unguja, several have been accorded sub-specific status, including the leopard *Panthera pardus adersi*. A recent report (Goldman & Walsh 1997) summarised what was known about the leopard on Unguja, documenting verbal reports of apparent kills, sightings and other observations of these cats. The same authors also covered the problematic issue of so-called “kept”-leopards as opposed to wild leopards, and the confusion that results from this! From their findings they felt that leopards could still well survive on Unguja, in contrast to other authors (eg. Miththapala *et al* 1996; Nowell & Jackson 1996) who considered this cat to be extinct, or likely to be so, on the island.

Purpose:

- To establish whether:
1. Leopard still survived on Unguja, in particular in the south-east where the majority of reported kills and sightings had been made in recent years.
 2. If leopard did still survive in this area, to obtain an indication as to population size and the viability of such a population.
 3. What method/s could best be applied to improving the conservation prospects for leopard on the island.

Methods employed:

Based on experience gained from previous surveys of this nature we decided to employ a broad spectrum of techniques which had been applied successfully at other locations and that were familiar to us. These included, automatic camera traps, the use of scent lures, playing of tape recordings of leopard calls and tracking.

Automatic camera traps: Given the limited time available and the apparent high risk of theft we set only two camera traps, both in the northern sector of the Chawka Bay-Jozani Conservation Area (Camera set 1- 5 45.8 E./ 93 11.4N; Camera set 2- 5 47.0E/ 93 12.9N). Each unit consisted of a trigger-plate set into a pathway and camouflaged, and connected to the camera by a covered cable. Each depression of the trigger-plate results in the exposure of one photograph, with automatic rewind and use of flash where light is inadequate. We have applied this method with considerable success in other areas, specifically for surveying leopard and for the compilation of regional mammal inventories.

Scent lures: These are commercially produced lures, of which we employed five varieties in the current survey, designed to attract mammalian carnivores and specifically felids. Lures were applied both at the camera trap sites as additional incentives to any animals in their vicinity, as well as at cleared scent posts. The latter simply involves the brushing clean of suitable soft ground and depositing a small quantity of the selected lure in the centre of the clearing. In this way, any animal attracted to the scent leaves tracks that can be identified.

Tape-recordings: The use of tape recordings has been applied successfully in establishing the presence of a number of mammals, including leopard, lion and black-backed jackal, but this has the limitation of the distance over which the recordings carry. We used taped calls of a male leopard, as well as those of a female on heat; both of which would elicit a response if wild leopard were in the vicinity.

Tracking: This involves walking along jeep tracks and footpaths, covering as large an area as possible, and repeating the routes on a frequent basis, and noting any tracks (pugmarks in the case of leopard), earth- and tree-crutchings, droppings, as well as any other signs observed. Not only does this establish presence, or absence, of leopard but it is also a very useful survey tool for a broad spectrum of other species that may otherwise be overlooked. During the course of the present survey all such records were noted and are presented in the attached appendices. The observer has to have a good knowledge of tracking and tracking techniques in order to obviate errors in species identification.

Findings and Discussion:

Our efforts were concentrated in the south-east of Unguja where the bulk of recent records had been documented by Goldman & Walsh (1997). Given the limited period of one month (April 1997) available for the survey it was deemed wise to place all available resources into surveying the Chawka Bay-Jozani greater conservation area, its surrounds and the southern extension of coral rag dominated by forest and thicket to the south of the Kitogani-Paje road. Despite extensive periods spent in the field **NO** identifiable indication of the continued presence of leopards was found in the area.

Automatic camera Atraps: A total of 80 photographs were taken, of which by far the majority were triggered deliberately by tsetse fly control workers, as well as hunting parties and their accompanying packs of dogs. It needs to be pointed out here that although we were told that hunters passing through the conservation area were only seeking to kill bushpig (*Potamochoerus larvatus*), we found clear evidence that they were deliberately hunting antelope and crested guineafowl in the heart of the reserve. Photographic records of African civet (*Viverra civetta*) and crested guineafowl (*Guttera pucherani*) were the only wild species recorded on film.

Scent lures: The tracks of a number of species were recorded in this manner, dominated by African civet (*Viverra civetta*).

Tape: No response was elicited by the playing of leopard calls in areas within and around the Chawka Bay-Jozani Conservation Area. This method was applied at different times of the day and at night.

Tracking: Although a considerable variety of species was recorded in this way we found no sign of leopard activity. Identifications and localities of species signs observed are given in the attached appendices. We are well aware that tracks/pugmarks are of a transient nature but having covered some 250 km on foot during our visit we are confident that were leopard active in the survey area we would have encountered their tracks. Regular visits were made to several sites where “frequent and recent” leopard activity had been reported but during the survey period no sign attributable to that cat was encountered. In our experience leopard droppings will remain intact for up to several months along, and in association with, trails and tracks, even during periods of rainfall. The fact that we encountered no leopard droppings is another indication, to us, that leopards were not active in the survey area during our visit. Even more puzzling was the apparent absence of scratching posts – these are trees located within a leopard’s home range that are used repeatedly for removal of loose claw fragments (as with domestic cat) and it is believed to serve some marking function. The fact that we located no such trees, bearing in mind that these scratch marks can remain visible for several years, tends to indicate that leopard activity in the recent past was minimal in the survey area, or that leopards have been absent for longer than is believed. In areas of very low leopard density where we have worked previously a diligent search has nearly always revealed the presence of such scratching posts. A number of problems in this regard are given below.

GENERAL COMMENTS:

1. Although we encountered no sign of leopards during the course of the survey it cannot be entirely ruled out that a few individuals may survive on Unguja! However, it is our opinion that this is unlikely for the area surveyed and even should there be some survivors on the island the numbers would be so low as to obviate the implementation of any meaningful conservation programme. It is very important to separate the concept of the “kept” leopards that has no scientific basis, from a scientific survey of leopard. After examining the records in Goldman

& Walsh (1997) and after conducting a number of interviews ourselves (with the assistance of a translator) with *sheihas*, village elders and hunters in the south-east of the island, we are of the opinion that many of the purported leopard kills, sightings and incidental reports of the past two years, and probably earlier, are unreliable. We base this on the fact that a) livestock (cattle and goats) are frequently left at night unattended and free-ranging in the coral rag thicket and no recent verified stock losses attributable to leopards were noted. In areas of the African mainland where leopard occur livestock is corralled or guarded at night, and frequently accompanied during daylight hours in some areas. b) Many supposed leopard records in the survey area were based on the identification of tracks (pugmarks) but it soon became clear that many local people attribute the tracks of the African civet to the leopard. However, civet tracks are always smaller than those of leopard, although in soft mud they may appear larger, and those of the cat never show claw marks during normal locomotion. Night-time sightings in at least some cases were apparently of African civet and not leopard but it was not possible to pin-point each incident in the time we had available. It would seem that mistaken identity also applies to other spotted species such as Indian civet and genet, which we know to be on the island after encountering tracks, after having shown photographs of these species to hunters and villagers. c) There was also the problem of offering financial rewards to show visitors/researchers leopard, or signs of recent activity; thus motivating the informer to show, or say, anything that seemed to please or justify the reward. After detailed questioning several instances were shown to be pure fabrications of 'fact', or the relating of incidents that had taken place several years earlier but put over as being of recent occurrence.

2. The high human population and its continuing rapid growth on the island, is resulting in extreme pressures being placed on the natural biota of the island- a fact that is generally realised! Disturbance levels, including bush clearing for cultivation, wood-cutting for firewood, charcoal production and building poles, hunting for the three antelope species (primarily suni and blue duiker) as a source of food, and bushpig for dog food and as a problem animal were major disruptive influences throughout. We would like to stress that all of the above activities were taking place within the greater Chwaka Bay-Jozani conservation area, as well as elsewhere, at the time of our survey. In addition cattle were found grazing deep within the conservation area throughout the time of our visit; and most troubling were areas of newly planted *Casuarina* saplings within the proposed sanctuary. The northern part of the conservation area was unfamiliar to the forest guards we dealt with and we were told that the area is very rarely patrolled. Levels of illegal human activity observed served to verify this.

3. The issue of conserving the leopard (almost certainly too late) cannot be separated from the general wellbeing of the environment. Although the potential leopard prey base appears to be quite low there would still be sufficient to sustain a small population of this cat, particularly in the form of such species as the bushpig, the pygmy antelope and giant rats. Remembering that the leopard has a very catholic diet and it is not averse to eating such organisms as crabs, fish and reptiles.

4. Although it is a tragedy that the leopard may no longer have a place on the natural inventory of Unguja, there are still many species of mammals, birds and lower vertebrates that are deserving of conservation efforts. During the course of this brief survey we were able to document records for a considerable number of species already known from the island, several

with only a few previous records, confirmed the presence of three species and possibly recorded a new amphibian. In the case of the latter and several additional amphibian records we await confirmation of identifications.

5. Given the limited number of recent records and the dated surveys, there is an urgent need to undertake intensive distributional and status surveys of all of the biota of Unguja- a rich natural heritage that deserves greater conservation efforts.

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