Provisional summary report; the south west Madagascar tortoise survey project

Report to project partners, funders and in-country conservation agencies By

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Introduction

The provisional results reported in this summary report represent the findings of phase two of a three phase survey to investigate the current range, abundance and population density of the Critically Endangered Madagascar spider tortoise, *Pyxis arachnoides*.

Very little is known of the ecology, biology and current conservation status of this species. However, it is thought that the species faces serious threats to its survival as a result of habitat destruction and collection for the pet trade and in some cases local consumption.

This short report documents the preliminary findings of a range wide survey undertaken during February and early March of 2010 for the mid range sub species of spider tortoise *Pyxis arachnoides arachnoides*. In addition to this, provisional data documenting the range and distribution status of southern Madagascar's other Critically Endangered chelonian species; the radiated tortoise *Astrochelys radiate*, is presented.

Methods

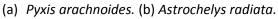
- Fifty, 1 km transects were surveyed across the suspected coastal range of *P. a. arachnoides* between 1km north of the Fiherenana River north of Toliara to Cap Sainte Marie Special Reserve using a distance sampling methodology (Fig. 1a), totalling 62.45 hours of active survey effort.
- Forty one timed searches were undertaken concurrently to distance sampling across the same range, totalling 36.55 man hours of active survey effort.

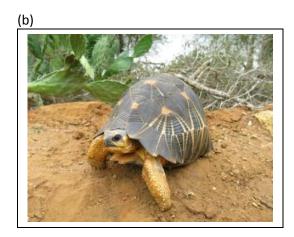
Results

Pyxis arachnoides

- Results suggest that *P. a. arachnoides* is probably extinct between the Onilahy River and the Fiherenana Rivers, probably due to habitat removal to the north and east of Toliara and collection as a result of the close proximity to Toliara (Fig. 1(b)-1).
- A reasonably un-fragmented population of *P. a. arachnoides* still inhabits the coastal dry forests south of the Onilahy River, within the narrow coastal strip west of the Mahafaly Plateau (Fig. 1 (b)-2) to the Linta River.
- A zone of intergradations was recorded south of the Linta River, stretching south for approximately 26km of coastline, whereby tortoises could be found displaying morphological characteristics consistent with intergradation between *P. a. arachnoides* x *P. a. oblonga* (Fig. 1(b)-3).
- The area of approximately 72km of coastline south of Ampalaza, through the Marolinta and Menarandra regions appears to be devoid of spider tortoises (Fig. 1(b)-4).
- A small isolated population of southern spider tortoises'; *P. a. oblonga* were discovered approximately 40km north of Cap Sainte Marie.
- A moderate populations of *P. a. oblonga* were recorded at Cap Sainte Marie Special Reserve (Fig.1(b)-5).
- Spider tortoises are present at moderate levels in both of the regions protected areas;
 Tsimanampetsotsa National Park and Cap Sainte Marie Special Reserve. However, the protected areas fail to encompass the healthiest population for the region. For example, populations of spider tortoises inhabiting the dunes 5km to the west of Tsimanampetsotsa National Park occur at levels of approximately 2-3 times the densities of those populations within the National Park.







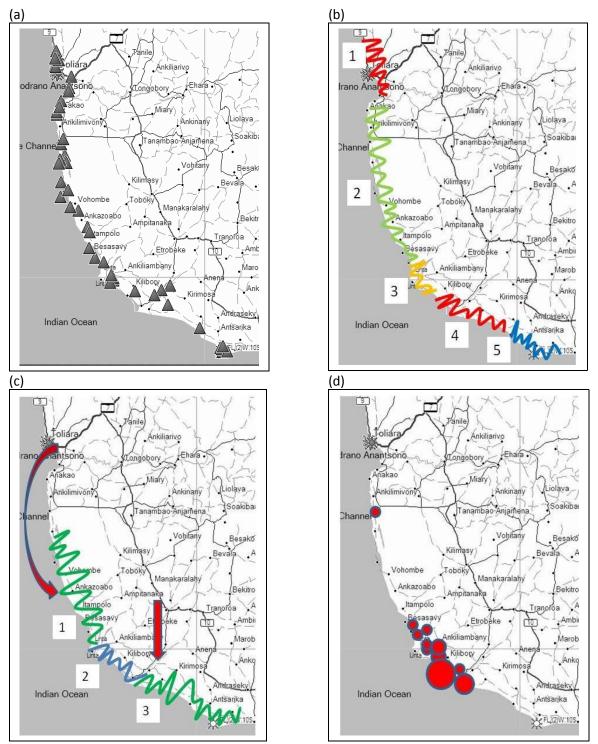


Figure 1. (a); location of the 50 1km distance sampling transect and timed search sites between the Fiherenana River north of Toliara to Cap Sainte Marie Special Reserve. (b); results of *P. a. arachnoides* distribution and range survey. (c) results of the *A. radiata* distribution survey, plus suspected routes of

poachers. (d) a visual representation of the number of poached *A. radiata* carcases encountered upon each transect.

Astrochelys radiata

- The most northerly area of occurrence of radiated tortoises appears to be just north of Tsimanampetsotsa National Park. Moderate to high populations can be found south of this region to north of the Linta River (Fig. 1(c)-1).
- The area between the Linta and Menarandra Rivers appears to be suffering from moderate to high levels of poaching with radiated tortoise occurring in lower population densities than the north and south of this region (Fig. 1(c)-2).
- The highest concentrations of radiated tortoises within our area of surveying now occur in the region south of the Menarandra River to Cap Sainte Marie Special Reserve (Fig.1(c)-3).
- The survey revealed numbers of between 1-47 slaughtered tortoise carcases per 1km of transect, mostly within the region between the Linta and Menarandra Rivers (Fig. 1(d), Fig. 2(a)).
- Local communities reported poaching pressure around the Itampolo region, whereby poachers would arrive by boat from Toliara. The heaviest levels of poaching occurred in the region between the two rivers (Linta and Menarandra), whereby poachers can gain easy access to the region as a result of the quality of the road from Ampanihy (Fig. 1(c). In both areas, communities report that poaching gangs have resorted to arming themselves and as a result local communities are powerless to stop the poaching. Poaching was reported to increase in the weeks prior to the Christmas and Easter holiday period, as a result of the demand for tortoise meat as a seasonal favourite amongst people living in the large population centres of southern Madagascar.





Figure 2. (a) A. radiata carcases as a result of slaughter for meat taken by armed poachers from forests south of Androka. (b) The survey team in the forests around the Anakao region.

Conclusions

• In short, some good populations of *P. arachnoides* sp. and *A. radiata* still remain within remote or protected areas. However, compared to historical or prior status, this range is decreasing.

- For A. radiata, heavy poaching for local consumption appears to be the main driver for this decline.
- Habitat destruction is the main threat to P. arachnoides sp. within the range south of Toliara. In a separate genetics study during March 2010 under taken by these researchers evidence was collected of local consumption of P. a. brygooi within the Lamboara region, with carcases found in the field. Data collected in phase one of this study (2009) show that P. a. brygooi are in a more precarious state than the reasonably healthy populations of P. a. arachnoides south of Toliara.
- Therefore, long term conservation strategy needs to be planned in order to decrease/stop this threat level.

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