

Shedding light on two unstudied species of *Lepilemur* of Northwest Madagascar

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Introduction

Madagascar’s extraordinary biological diversity is under increasingly severe threat from anthropogenic degradation of its forest habitats. The genus *Lepilemur* is particularly negatively affected by deforestation and habitat fragmentation. Their pattern of distribution appears to have been established through vicariant speciation, probably driven by changes in the configuration of the hydrographic system. Such a pattern suggests a high level of niche conservatism. We focus here on two species described from northwest Madagascar but never studied before: *L. mittermeieri* and *L. dorsalis*.

Objectives

The main goal of the research is to verify the existence and extent of niche conservatism in three closely related species within genus *Lepilemur*, and to draw conclusions on the applicability of conservation protocols to a broader array of *Lepilemur* species.

This poster present the results of a field mission conducted from March to June 2014 in the area of distribution of two unstudied species of *Lepilemur* in order to specifically:

- 1) evaluate *Lepilemur* presence and abundance in forest patches of northwest Madagascar
- 2) investigate their sleeping sites characteristics



Method

- Reconnaissance walks during the day
- Night survey transects (3 observers)
- Detection of animals based on eye shine and/or vocalisation
- Data collection and analysis (Distance sampling method)
- 3 repetitions/transect

Study sites

- Ampasindava Peninsula: 4 sites (9 transects)
- Manongarivo Special Reserve: 1 site (3 transects)

Results

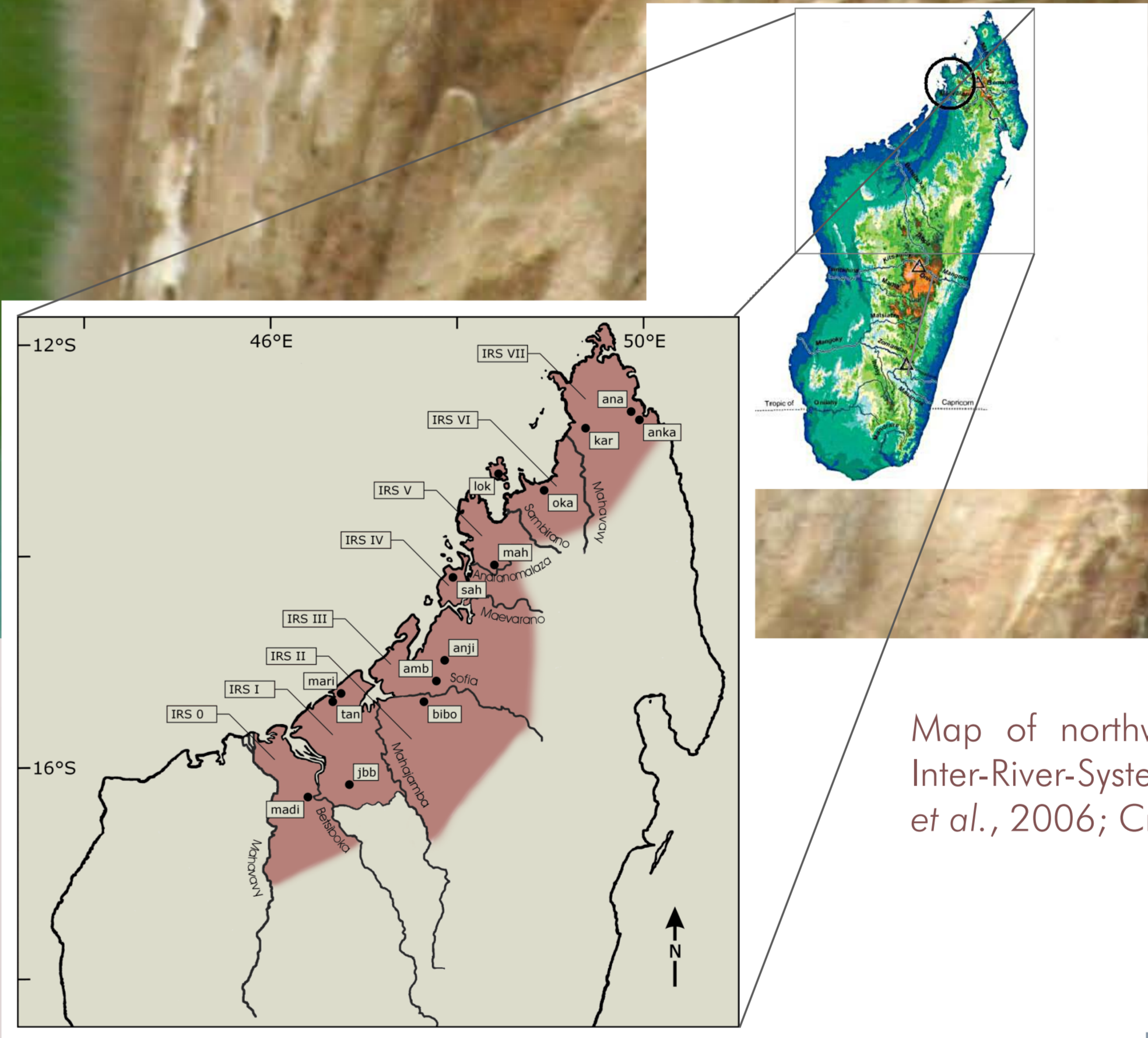
Discussion

This study confirms the presence of unstudied *Lepilemur* in quite high densities in the patches of forest investigated. The results^ψ must be taken with caution considering the relatively small number of transect covered so far. Few sleeping sites (8) have been found during this field research. This could be explained by the high localization of sleeping sites in the canopy or by the choice of tangles of branches to rest during the day instead of tree holes.

These are the first results on *L. mittermeieri* and *L. dorsalis*. Further investigations are still required to improve our knowledge on such understudied species with decreasing populations living in forest patches increasingly fragmented over the years.



Photo: Melanie SEILER



Map of northwestern Madagascar showing the eight Inter-River-System of Craul's "large river model" (Wilmé et al., 2006; Craul et al., 2007)⁴.

Population density estimate Buckland method - (Buckland et al., 2001)

| Study area | Species | Detection model | AIC | CV (%) | Density (ind/ha) | Estimated population size | Probability of detection | Number of sites | Number of observations | Number of transects | Effort survey (m) | Area (ha) |
|-----------------------------|-------------------------------|--------------------|--------|--------|------------------|---------------------------|--------------------------|-----------------|------------------------|---------------------|-------------------|-----------|
| Ampasindava Peninsula | <i>Lepilemur mittermeieri</i> | Hazard-rate cosine | 351,89 | 18,13 | 1,832 | 5354 | 0,85 | 4 | 69 | 25 | 17010 | 2822 |
| Manongarivo Special Reserve | <i>Lepilemur dorsalis</i> | Half-normal cosine | 256,51 | 20 | 1,933 | 72715 ^ψ | 0,96 | 1 | 47 | 9 | 8400 | 37622 |

⁴ Wilmé, L., M.S. Goodman and J.U. Ganzhorn. 2006. Biogeographic Evolution of Madagascar's Microendemic Biota. Science 312: 1063-1065.
Craul, M., E. Zimmermann, S. Rasoloharijaona, B. Randrianambinina and U. Radespiel. 2007. Unexpected species diversity of Malagasy primates (*Lepilemur* spp.) in the same biogeographical zone: a morphological and molecular approach with the description of two new species. BioMedCentral Evolutionary Biology 7(83).