Frontier Madagascar Environmental Research

REPORT 7

Sept Lacs Region

wetland biodiversity and resource use summary

Frontier-Madagascar
2003

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Emmett, D. A., Fanning, E. & Olsson, A. (eds)

Frontier-Madagascar

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Tel: +44 (0)20 7613 3061
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The Society for Environmental Exploration (SEE)
The society is a non-profit making company limited by guarantee and formed in 1989. The society's objectives are to advance field research into environmental issues and implement practical projects contributing to the conservation of natural resources. Projects organised by The Society are joint initiatives developed in collaboration with national research agencies in co-operating countries.

The University of Toliara / IHSM
The University of Toliara was established in 1976 as a centre for learning and research in the biological sciences. The Institut Halieutique et des Sciences Marines (IH.SM) is the marine department of the University of Toliara.
The University is studying the flora and fauna of Madagascar and is conducting research into the maintenance and improvement of the environment and the sustainable use of the natural resources in the region.

The WWF Madagascar Dry Forest Programme
The WWF Madagascar Dry Forest Programme was initiated in 1998. It is a 50-year programme with the aim of conserving key habitats throughout southwest Madagascar. This eco-region has suffered greater habitat loss than any other region in Madagascar. The project aims to implement management plans for 15-25% of the region, incorporating all major habitat types and including areas of high biodiversity.

The Frontier-Madagascar Forest Programme
The Society for Environmental Research, the University of Toliara and the WWF Madagascar Dry Forest Programme have been conducting collaborative research into environmental conservation issues since July 2001 under the title of the *Frontier-Madagascar Forest Programme*. From July 2001 until July 2002, the Programme has been working in the forests of the Sept Lacs region. This activity was aimed at identifying core areas of biodiversity and establishing baseline biodiversity and resource-use information in those areas. In addition, tourism feasibility surveys were undertaken with socio-economic support from the Association Nationale pour la Gestion des Aires Protégées (ANGAP).

FOR MORE INFORMATION

Frontier -Madagascar
BP41, Antsiranana, 201
MADAGASCAR
Tel/Fax: +261 (0) 20 82 23117
E-mail: frontier@wanadoo.mg

L'Insitute Halieautique et des Sciences Marine (IHSM)
Zone Portuaire, BP 141,
Tulear 601
MADAGASCAR
Tel: +261 (0) 20 94 43552
Fax: +261 (0) 20 94 43434
E-mail: ihsm@wanadoo.mg

Society for Environmental Exploration
50-52 Rivington Street,
London, EC2A 3QP. U.K.
Tel: +44 (0) 20 7613 3061
Fax: +44 (0) 20 7613 2992
E-mail: research@frontier.ac.uk
Internet: www.frontier.ac.uk

EXECUTIVE SUMMARY

The Sept Lacs wetland site is situated within Toliara in southwest Madagascar. The site contains important areas of gallery forest and wetland, inhabited by populations of rare species dependant on such habitats.

The Frontier-Madagascar Forest Research Programme was brought about through the collaboration of Frontier-Madagascar and WWF Dry Forest Programme. Biodiversity surveys of the wetlands were carried out from July 2001 until July 2002.

Twenty five mammal species, 56 reptile species, 6 amphibian species and 79 bird species were identified within the Sept Lacs region, many of which were classified as vulnerable (IUCN 2002) or rare within that region.

The Set Lacs wetland region has significant conservation value both at national and international levels. Many rare, vulnerable and endemic species rely on the wetland areas, which are threatened directly from agricultural expansion and indirectly from the hillside charcoal production through erosion and run-off.

The information collected highlights the need for a balanced action plan for the sustainable use of the wetlands, indicating alternative resource use and support for local communities.

ACKNOWLEDGEMENTS

This summary report has been written based on research conducted during five Frontier-Madagascar phases, running consecutively from July 2001 to September 2002, funded by the Society for Environmental Exploration.

The research team comprised Frontier-Madagascar field staff, scientists from WWF-Madagascar, researchers from the University of Toliara, and Frontier-Madagascar volunteer research assistants. Frontier-Madagascar is a collaboration between the Society for Environmental Exploration, UK and the Institute of Marine Sciences, Madagascar.

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F-M Co-ordinators:	Dr. Man Wai Rabenevanana
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SOCIETY FOR ENVIRONMENTAL EXPLORATION (SEE)

Managing Director	Ms. Eibleis Fanning
Development Programme Manager	Ms. Elizabeth Humphreys
Programme Manager (Research)	Ms. Nicola Beharrell
Operations Manager	Mr. Matthew Willson

WWF-MADAGASCAR DRY FOREST PROGRAMME

Regional Director	Mr. Mark Fenn
Biodiversity Officer/Herpetologist	Mr. Achille Raselimanana
Mammologist	Dr. Steven Goodman
Research & Training Officer	Mr. Pierre Jules Rataromalaza
Sub-regional co-ordinator	Mr. Voninjatovo Andriamiarisoa

ANGAP

Regional Director	Mr. Jocelyn Rakotomalala

AMERICAN MUSEUM OF NATURAL HISTORY (AMNH)

Curator of Herpetology	Dr. Christopher Raxworthy

CALIFORNIAN ACADEMY OF SCIENCE (CAS)

Curator of Entomology	Dr. Brian Fisher
Entomologist	Ms. Alison Cameron

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INTRODUCTION

The Sept Lacs wetland site lies within the Toliara Region in SW Madagascar (see Map No. 1). Topographically, this part of the region is characterised by a range of scrub-covered hills that descend in height as they run westwards from the central plateau to the coast. The Onilahy River cuts a wide flood plain through this range (see Photograph No. 5) and meanders due west to its mouth at St Augustin, just south of Toliara.
At the edges of the flood plain, two narrow bands of gallery forest skirt the hills and dominate the adjacent small valleys. Marshy areas (ponds and swamps) are located along the north bank, where a track road (the old RN9) branches off the RN7 and runs parallel to the river. A large lake is located near the village of Antafoky (see Photographs No. 3 & 4), and there are a series of small lakes and marshes along the Ifanato river, a tributary of the Onilahy River (see Map No. 2 and Photographs No. 1 & 2). The Onilahy River may act as a corridor for wetland species between this matrix of sites and habitats, particularly for birds.

Permanently flooded wetland areas in the Toliara region are scarce. The Sept Lacs contains one of the only regional areas of gallery forest and wetland of any significant size, and holds important populations of rare species that are dependent on these habitats.

Since July 2001, the Frontier-Madagascar Forest Research Programme has been conducting biodiversity surveys along an 18km stretch along the Onilahy River from Ifanato to, and including, Antafoky Lake. In addition, the full length of the Ifanato River was surveyed. This report is based on the findings of these surveys.

THE WETLAND SITE

The wetland area consists of three core sites and a series of scattered streams, marshes and river-edge habitats. The three core areas are the lake at Antafoky (co-ordinates: S 23º 28' and E 044º 03'), the marshes around Mahaleotse (co-ordinates S 23º 31' and E 044º 05'), and the Ifanato River and lake system (co-ordinates S 23º 31' and E 044º 09'). The total wetland area includes approximately 200 hectares of lakeland habitat at Antafoky, over 12 km of fragmented marshland along the Onilahy River and approximately 10 km of marsh and lakeland habitats along the Ifanato river.

ACCESSIBILITY

The area can only be reached by travelling along the old RN9 road, through Ambohimahavelona. This road branches off from the RN7 approximately 26 km east of Toliara. By private vehicle the journey takes approximately three hours to Antafoky lake, and a further hour to the Sept Lacs.

THREATS TO THE WETLAND

The Sept Lacs Region contains the last remaining stands of gallery forest and wetland along the northern bank of the Onilahy River (Raxworthy, 1995). The region contains five small villages: Antafoky, Befasy, Bevoalavo, Manderano and Ifanato.

Local *fady* protect many of the remaining forested areas. However, several of the wetland areas are under threat through the cultivation of rice and the collection of reeds (*vundru*) for housing. Wetland fauna, especially birds, are at risk from over-fishing and hunting.

In addition to rice, the villagers utilise the land in the valleys and on the hills for the cultivation of manioc, maize, beans and other vegetables. Charcoal is produced in the gallery forest and spiny scrub.
The deforestation caused by cultivation and charcoal production may cause soil erosion, leading to run-off into the lake and river-systems.

HABITAT STATUS

In order to preserve the often-fragmented areas of gallery forest in the Sept Lacs region the Dept of Eaux et Forets implemented a locally managed conservation strategy (GELOSE) in this area in 2000.
The principal aim of GELOSE was to provide the local populations with the authority to manage and direct the sustainable use of the remaining forested areas. AGERAS and WWF are providing technical support to the local populations to aid them in this process.
The area under GELOSE management includes areas of wetland, gallery forest and transitional scrub. However, the emphasis at present is on gallery forest. Also, the forest and lakeside areas at Antafoky are not included within the GELOSE management plan, although they contain large areas of gallery forest and a unique lakeside habitat.

The Sept Lacs Region has been planned and demarcated as a future Regional Park, the Parc Regionale de Belomotse. This proposed Regional Park would encompass the water catchment areas for the marshland along the Onilahy River, the Ifanato River and lake-system, and the lake at Antafoky.

WETLAND SPECIES

The Sept Lacs Region provides habitats for many species. Both the Ifanato River and Antafoky Lake provide excellent habitats for bird life because they are still surrounded by gallery forest. The quality of the water at Lake Antafoky is high as local *fady* states that because of the presence of crocodiles in the lake, it is forbidden to pollute the water with chemical pollutants.

The Frontier Madagascar Forest Research Programme, in conjunction with technical support from WWF, identified 25 species of mammal, including six species of lemur, three of which were classified as vulnerable (IUCN, 2002).

In addition, 56 species of reptile and 6 amphibian species were identified, including Standingi's day gecko (*Phelsuma standingi*), Dumeril's boa (*Boa dumerili)*, the madagascar tree boa (*Sanzinia madagascariensis*) and the Radiated tortoise (*Geochelone radiata*), all of which are classified as vulnerable (IUCN, 2002). Aquatic species included two species of turtle; *Pelomedusa subrufer* and *Pelusios castanoides*, and the Nile crocodile (*Crocodylus niloticus*), which has CITES I status.

Of the 79 bird species identified within the Sept Lacs Region, three were classified as vulnerable (IUCN, 2002); the Humblot's Heron (*Ardeola humbloti*), the Madagascar Pond Heron (*Ardeola idae*), and the Madagascar Harrier Hawk (*Circus macrosceles*). Both the Humblot's Heron and the Madagascar Pond Heron were regularly seen at Antafoky Lake and the marshes along the Onilahy River.
A number of bird species found within the Sept Lacs Region are noted as rare, or uncommon in the west or south (Hawkins & Sinclair, 1998), including the Madagascar Cuckoo-Hawk (*Aviceda madagascariensis)*, the Madagascar wagtail (*Motacilla flaviventris*) and the Madagascar white-eye (*Zosterops maderaspatana*). Many species of water birds were seen, including the Black-Crowned Night Heron (*Nycticorax nycticorax*), Great egret (*Egretta alba*), and Hammercop (*Scopus umbretta*), which are stated as uncommon in the dryer south and west regions by Hawkins and Sinclair (1998).

CONCLUSION

The Sept Lacs Region contains a variety of different wetland habitats; lakes, ponds, marshes and stream edges. These habitats are distributed as a series of core areas linked by the Onilahy River. The gallery forest within the Sept Lacs Region is dependant on water provided by these wetland areas.

The wetlands display a high degree of biodiversity. Many vulnerable, rare and endemic species rely on the wetlands, either directly or indirectly. The botanical diversity of these wetlands is at present unstudied.

These areas are under threat from rice cultivation, drainage and marsh clearance for agriculture. In addition, charcoal production and cultivation on the hills threatens the wetland areas through the processes of erosion and run-off.

A balanced action plan is necessary for the sustainable use of the wetlands, and forests within the catchment areas, if these habitats are to survive. Alternative resource uses should be identified, and support given to the local populations. The implementation of a Regional Park could have beneficial effects on the wetland areas, though these areas should receive specific focus during the implementation process, or they may be overlooked.

REFERENCES

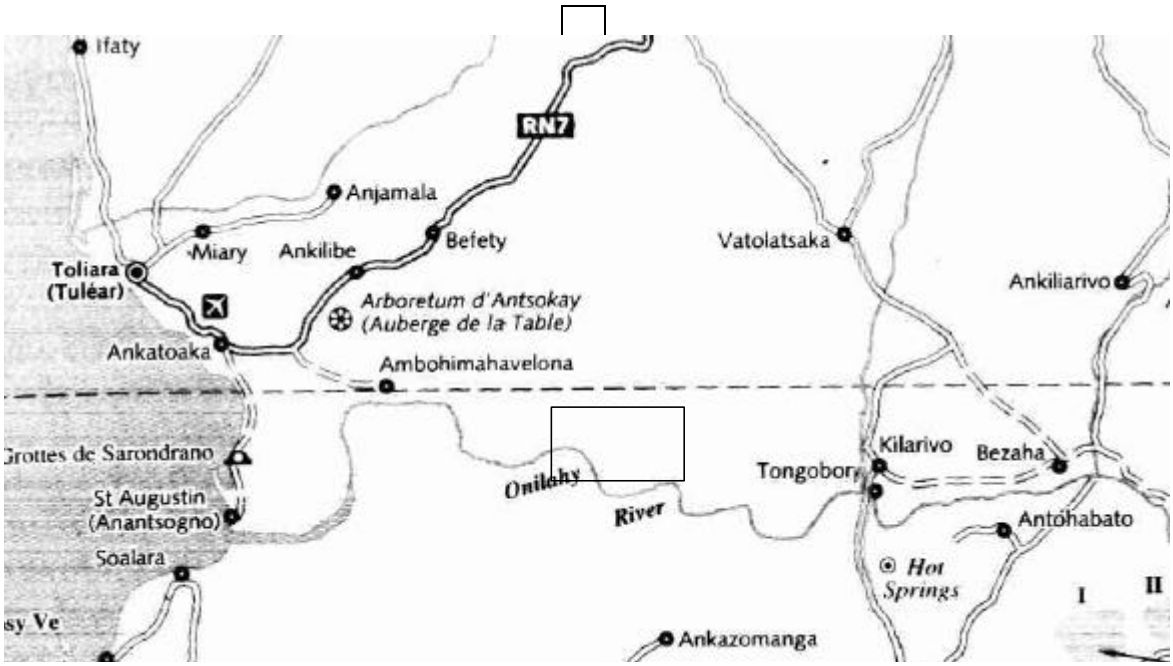
Hawkins, F. & Morris, P. (1998). Birds of Madagascar, A Photographic Guide.

IUCN, (2002) *IUCN Red List of Threatened Animals.* IUCN, Gland, Switzerland

Lonely Planet, Madagascar, 4th Edition (2001)

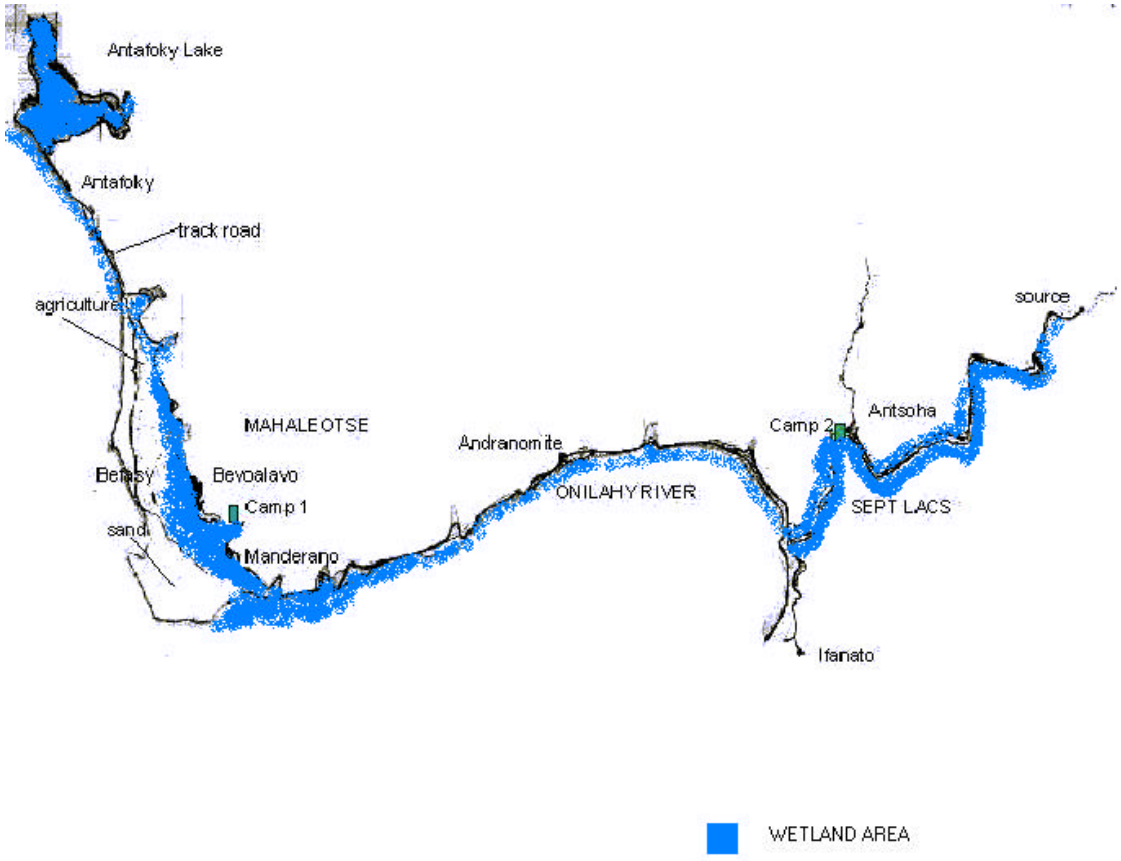
Raxworthy, C. (1995) *Field survey of Amphibians, Reptiles and Small Mammals from the Toliara Region, Madagascar, October 5-30 1995.* Unpublished field report, University of Michigan, USA.

Map No.1. General position of wetland areas (map reproduced from *Lonely Planet, Madagascar* 4th Edition, May 2001)



Map No. 2. Map of the area from Antafoky Lake to the Sept Lacs showing the areas of wetland along the Onilahy River.

Scale: 1cm : 1km



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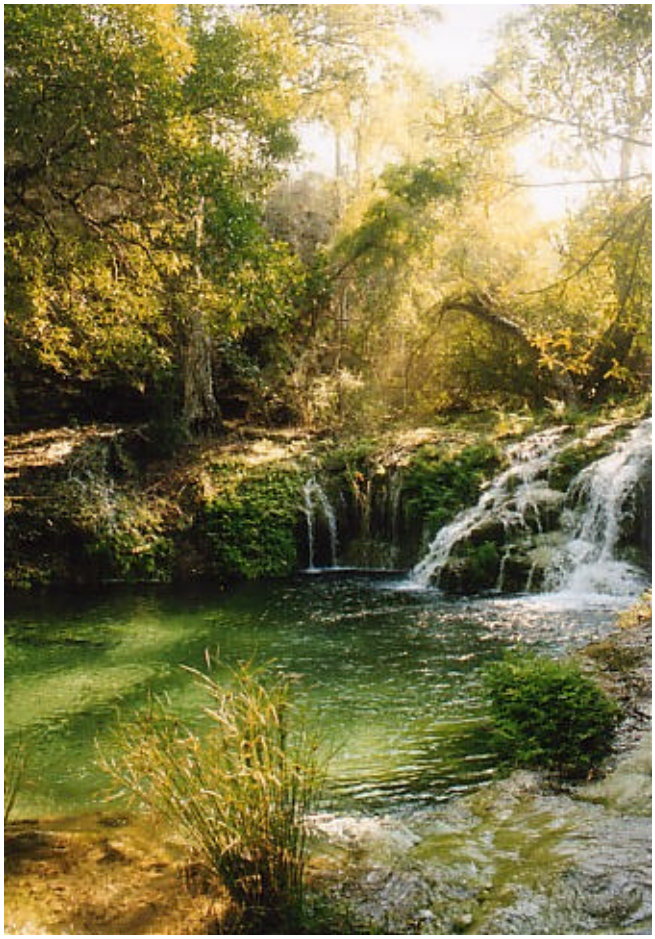
Photograph No's. 1 & 2: The Ifanato River and lake-system

Photograph No. 1



Photograph No. 2

Photograph No's 3 & 4: The lake and surrounding forest at Antafoky

Photograph No. 3

Photograph No. 4

Photograph No. 5: The Onilahy River flood plain

Photograph No. 5