

In Search of the **Red** Girl

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Who is the Red Girl?

Kingdom: Animalia

Phylum: Chordata

Class: Actinopterygii

Order: Perciformes

Family: Cichlidae

Subfamily: Ptychochrominae

Genus: *Ptychochromis*

Species: *insolitus*

Ptychochromis insolitus

Who is the Red Girl?

From Fishbase:

Ptychochromis: Greek, *ptyx*, = **fold** + Greek, *chromis* = **a fish**,
perhaps a perch;

insolitus: Name derived from the Latin, *insolitus*, meaning '**unusual, odd, queer**', in reference to the somewhat atypical appearance of the species and the anomalous morphology of the aquarium raised specimens used for the original description

Joba mena = Red girl



Red girls, are actually male



Female Joba mena



Photo: Berlin
Zoo

Biological and Behavioural characteristics

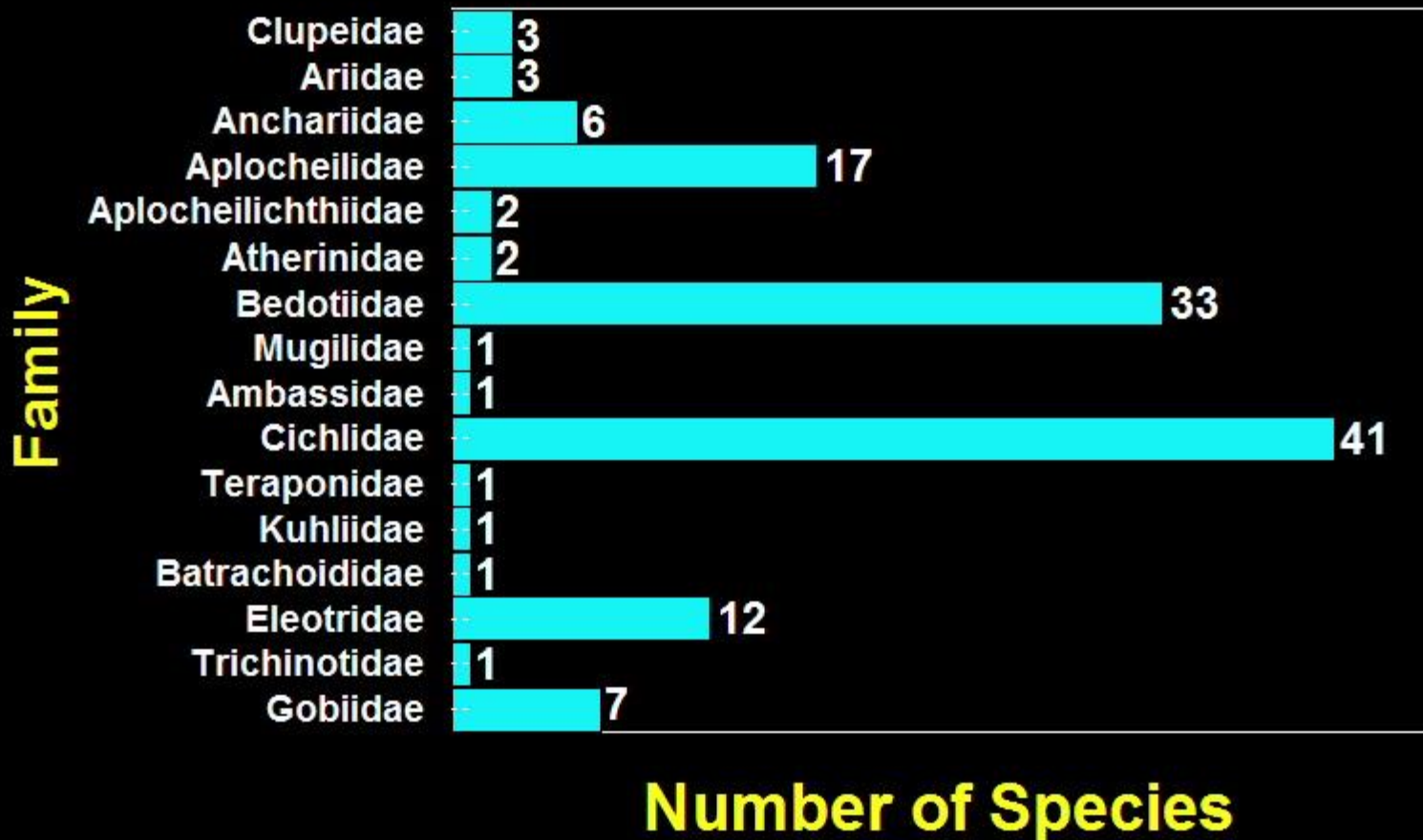
CICHLIDS are...

- Omnivorous
- Often sexually dimorphic
- Egg-laying
- Practice parental care of offspring
- Form pair bonds
- Territorial
- Aggressive
- Occasionally murderous



The Freshwater Fishes of Madagascar

Endemic Species Only



Where to find them

Amboaboa River

Mangarahara River

Sofia River drainage

Western escarpment

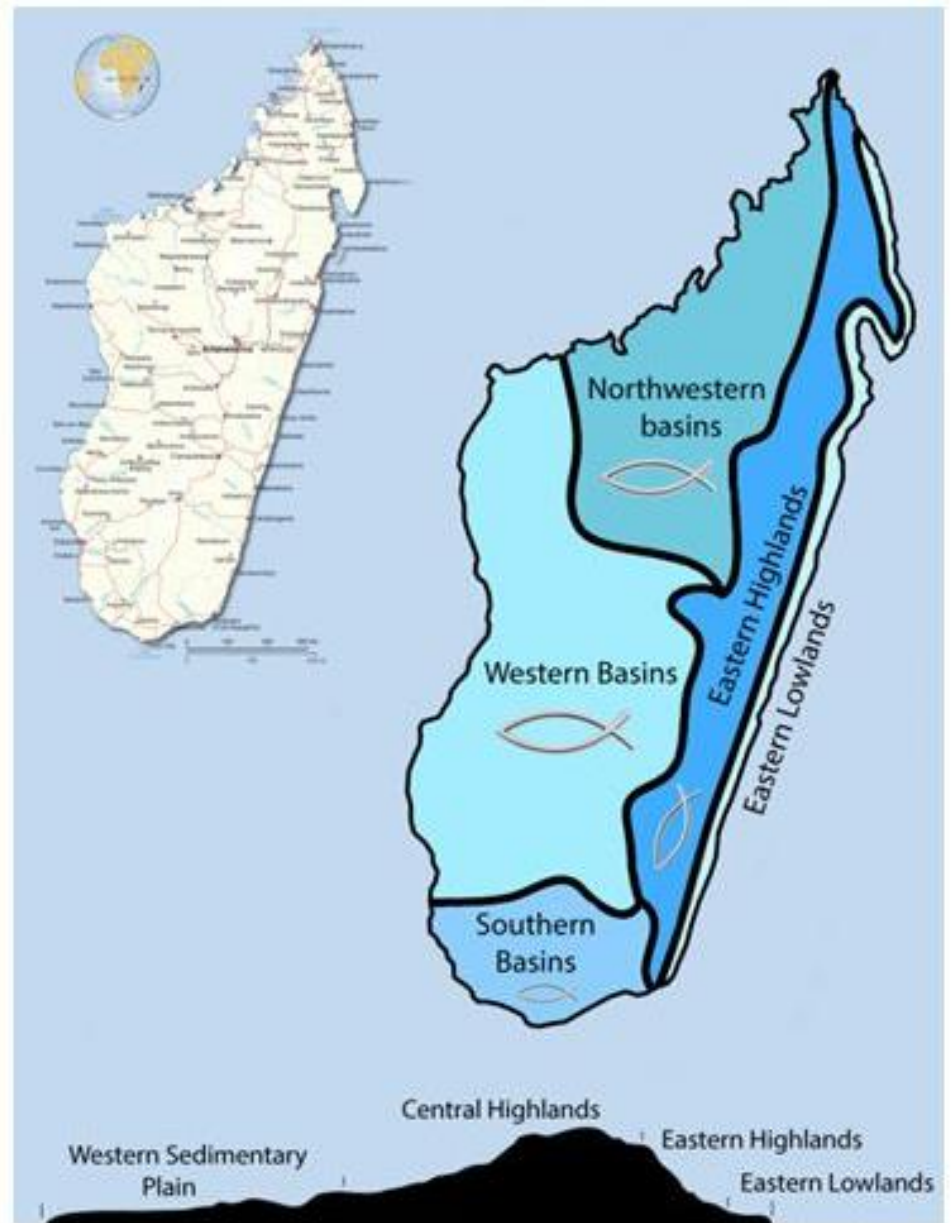
Near Marotandrano

Mangarahara cichlid



Basins of Madagascar

From IUCN Freshwater Fishes Specialist Group



Ptychochromis sp. nov. 'Joba mena'



In 2004:

“It appears to be extremely rare within its known and very restricted range (Sofia river drainage). Extent of occurrence and area of occupancy are estimated at less than 100 km² and less than 10 km², respectively. Despite targeted efforts it is rarely collected. Given the high rate of deforestation in the region, construction of dams and introduction of exotic competitors and predators, this species faces a very high risk of extinction.”

2003 *Joba mena* arrive at ZSL

19 juveniles arrived at London Zoo.

Offspring of a wild caught pair provided by hobbyist breeders Sonia Guinane and Dave Tourle.

A new breeding programme?



A new breeding programme?

- All related
- Large space requirements
 - Aggressive
 - Territory holding
- Parental care
 - high survival rate

No programme!



Ten years later...



Zurich Zoo survey

- Sam Furrer creates a poll of all European collections keeping Malagasy fish species
- Aim to establish stable captive breeding groups of key species
- Share knowledge of husbandry and breeding techniques

ZOO*h!*
Z Ü R I C H

Ptychochromis

P. oligacanthus (LC):

- 5 institutions
- > 250 animals
- regular breeding

P. grandidieri (LC):

- 2 institution
- > 150 animals, breeding

P. insolitus (EX in the wild?):

- 2 institutions
- 3 males, 1 female



February 2013

London Zoo



Berlin Zoo



Meanwhile in Madagascar...

From *The Endemic Cichlids of Madagascar* by Patrick de Rham & Jean-Claude Nourissat:

“In October 1999 we faced a distressing sight; as far as we could see, the bed of the Mangarahara was completely dry and all life had disappeared over an unknown distance...”

Action plan:



Murder!




Fish Appeal

- ZSL email address
- To all
 - Hobbyists
 - Fish breeders
 - Zoos & public aquariums
outside of Europe

WANTED

FEMALE MANGARAHARA CICHLID



**FOR VITAL CONSERVATION BREEDING
PROGRAMME TO SAVE A SPECIES**

**EXTINCT IN THE WILD, THERE ARE ONLY 3
KNOWN INDIVIDUALS REMAINING... ALL MALE**

If you know or own any female
Mangarahara cichlids please email us at
fishappeal@zsl.org

ZSL
LONDON
ZOO

Been there Seen that

by David
Shenton



These beautiful fish are THE MOST ENDANGERED animals in London Zoo. Because of river-damming in Madagascar, they are (probably) extinct in the wild. The Mangarahara Cichlid. The Aquarium has only two - BOTH MALE, Berlin Zoo has one - another male. If you know anything of any female Mangarahara cichlid, please email fishappeal@zsl.org and please come to see them.

Media hit!

- 174 media outlets in over 100 countries
- Reach of 63,888,552 people
- Not including social media, international radio and TV broadcast



The response:

- Thousands of emails
- Lots of well wishers
- Some “hate mail”
- Interesting suggestions:
 - Clone them
 - Freeze their DNA
 - Cross breed them with another species
- Many false leads – Malawi, India, USA, Mexico, Venezuela, Brazil, Morocco, Sheffield...



A potential lead:

08 June 2013

“Hello,

Following our investigation near Mandritsara in May last year, in the river Mangarahara we no longer find this fish Joba mena but in the other river in southwestern Mandritsara to the west side of river Anjobony, near to Mandritsara the fish is still found.

It is about 45 to 50 Km from Mandritsara but you have to use two means of transport - 4 x 4 car and motorcycle and there is a section of road impassable by car for about 35 km and the rest is on foot or by bike.”

Support for an expedition

- Toronto Zoo
- Denver Zoo
- British Ambassador to Madagascar
- ZSL directors



toronto
ZOO



British Embassy
Madagascar

All provided logistical and financial support and planning advice.

Assembling a team



Planning the route

- Three weeks duration
- Two vehicles
- Seven team members

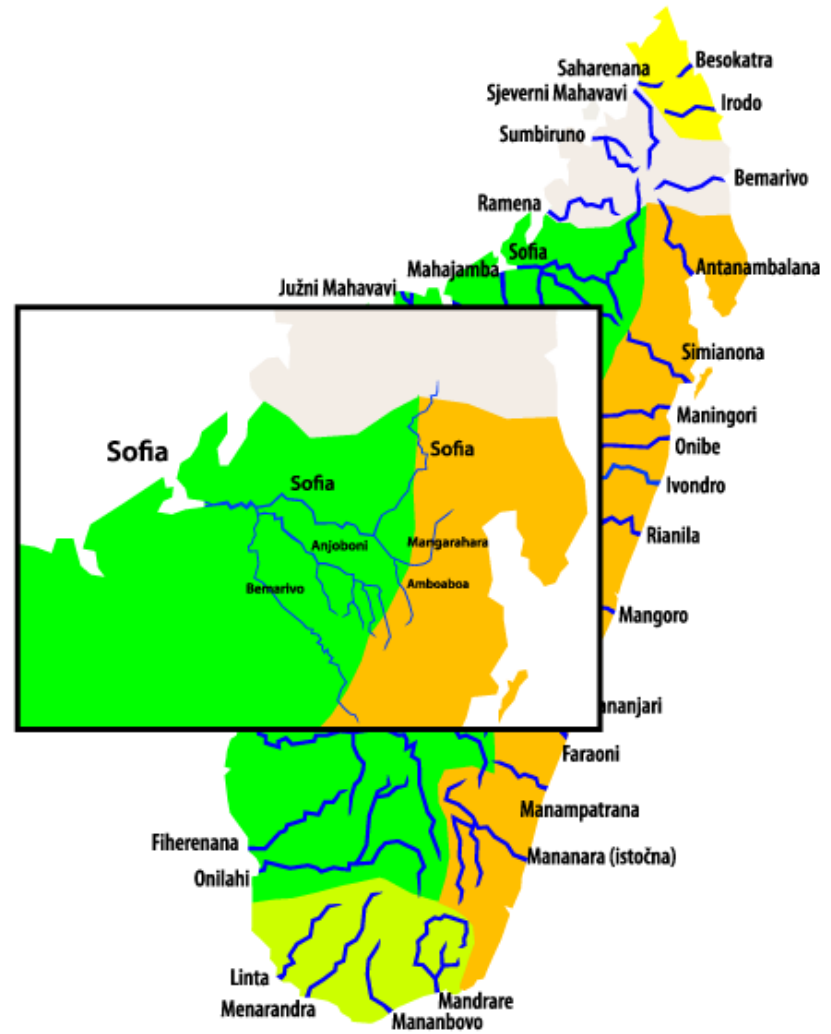
INCLUDING

- Gaining permission
- Planning access
- Agreeing fishing methods

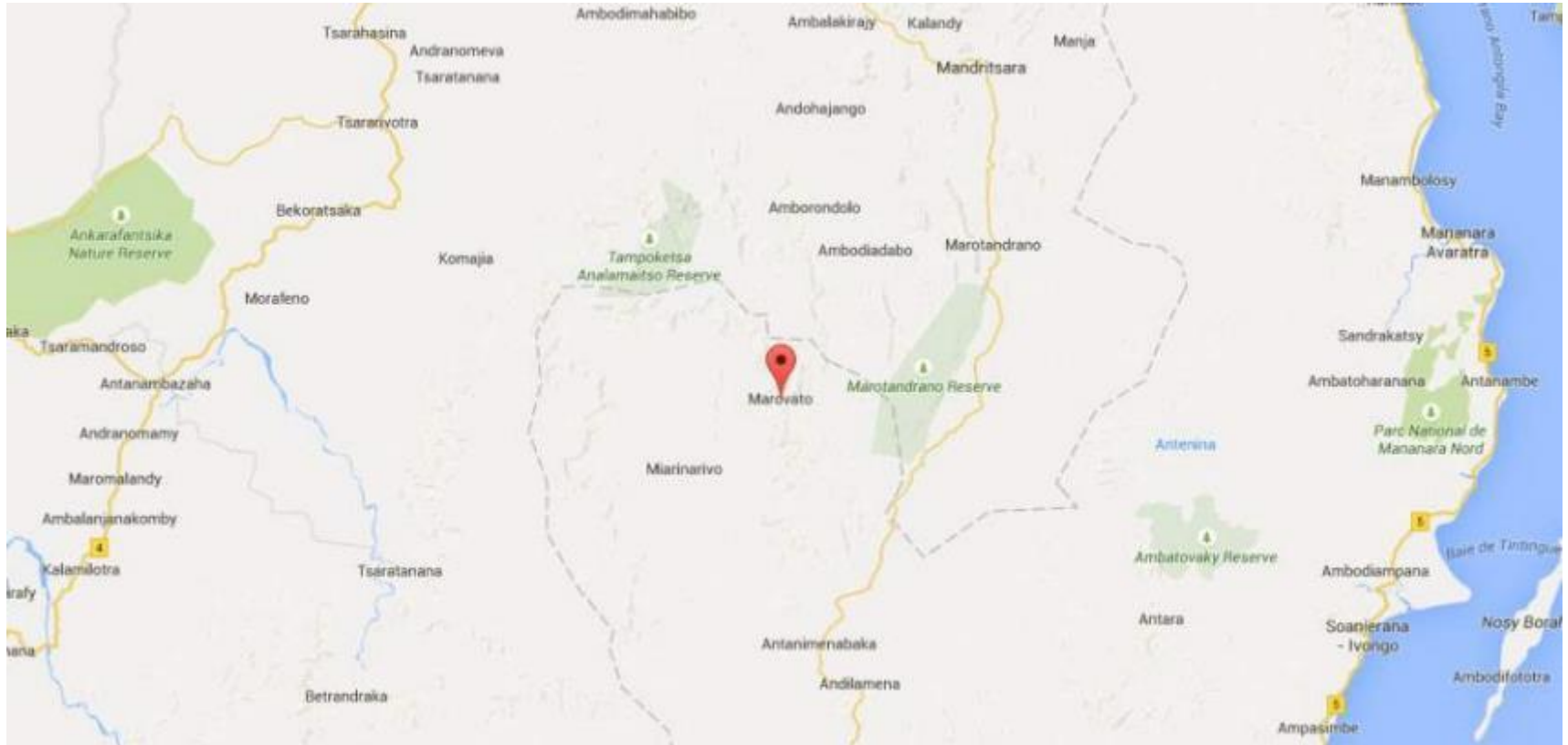


Sofia Drainage

- Goal: Sample several rivers and tributaries in the drainage with suitable habitat
- Undertake water quality analysis and document habitats
- Record all sympatric species
- Determine what activities could be undertaken to improve the conservation status of the species.



First fishing spot - Maravato



Maravato - permission



Maravato - access



Maravato – the site

- Clean water
- Good habitat appearance



Maravato fishing

Full day of fishing using three techniques



Maravato fishing

And lots of help from the village!



Maravato

Plus an audience



Maravato



Maravato

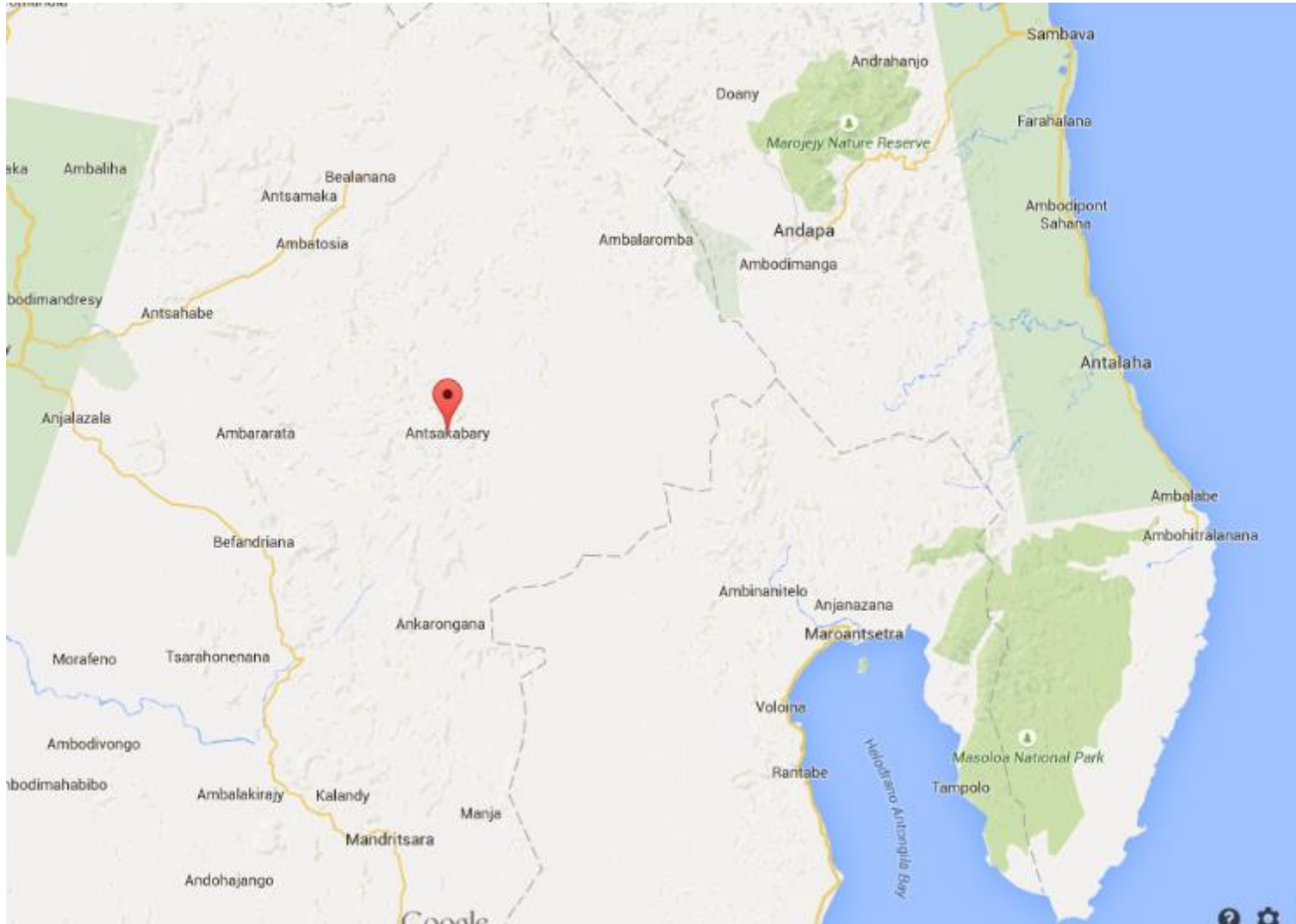
Results:

Only

*Oreochromis
mossambicus*
(Tilapia)



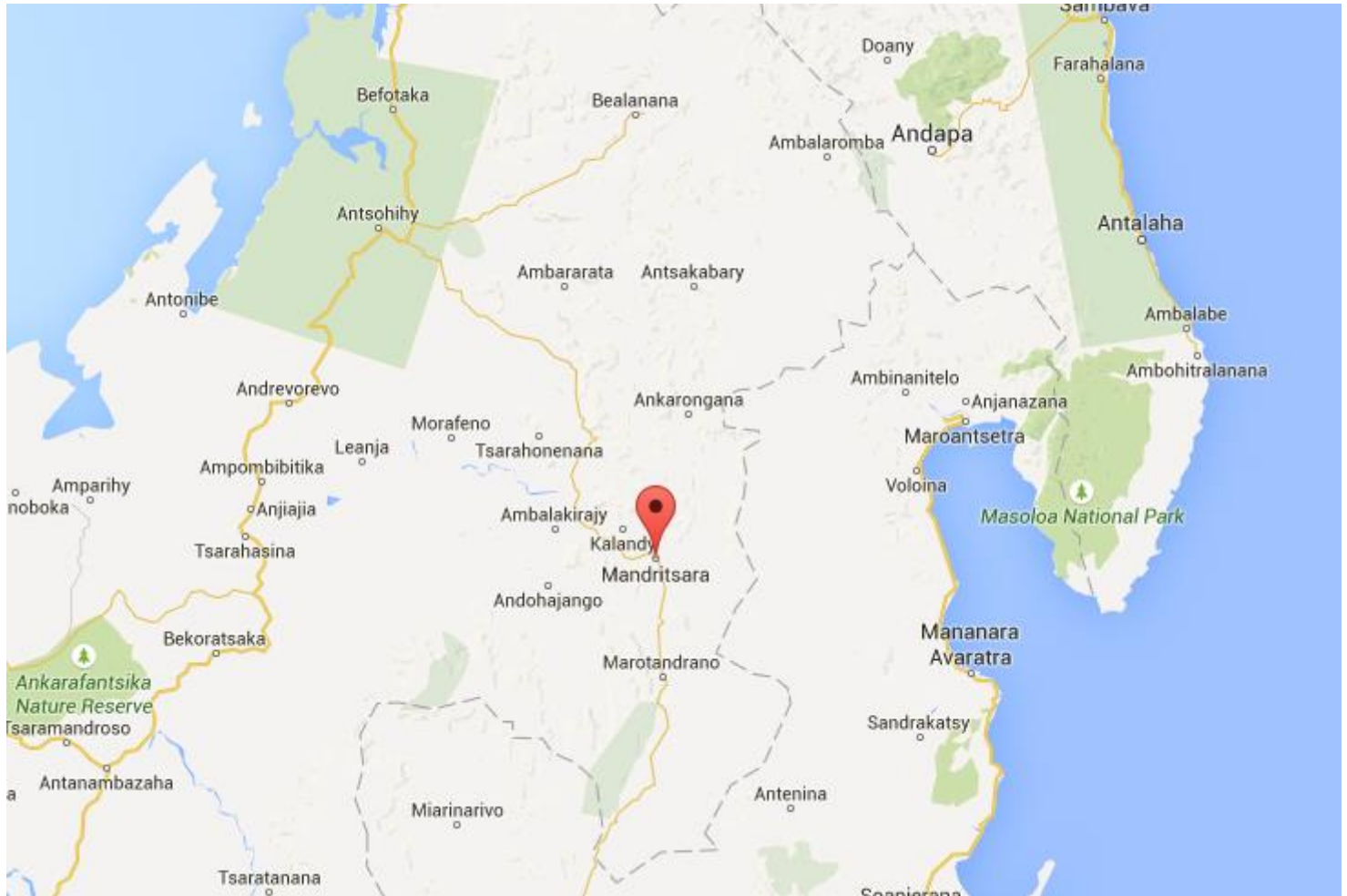
Antsakabary



Antsakabary



Mandritsara



Mandritsara



Mandritsara

Gateway to the Mangarahara River....



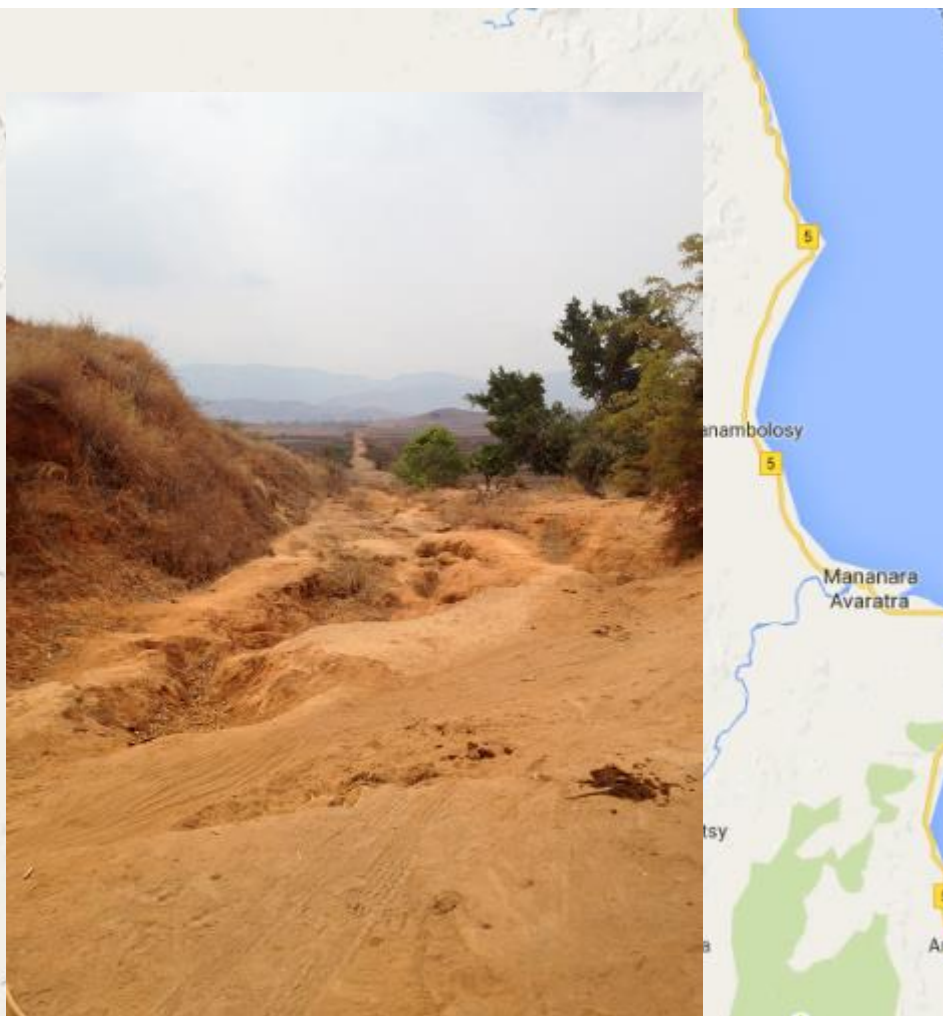
Mangarahara River



“Fishing” the Mangarahara



South to Marotandrano



Marotandrano



Our first fish!



And then more...



Finding the fishing spot



The site: A regular fishing spot



Collecting the trap





Joba mena!



And more Joba mena!



Time to celebrate!



Other discoveries



But also we discovered:

Introduced species



Other discoveries:

Water abstraction for rice farming



Fishing with poisonous plants



Lots of fishing



Deforestation
by
burning



Drying rivers



Emergency response

- Catch 20 individuals of each endemic species (ten males, ten females)
- Pack each fish individually in “breather bags”
- Transport them to Guy’s Andapa fish farms for safe keeping and hopefully breeding



- Each fish was measured and transported back to the village for packing
- Water quality was analysed and recorded
- Habitat characteristics were noted



Results

- 19 Joba mena (*Ptychochromis insolitus*) (11 males, 8 females)
- 21 Lamena (*Paretroplus nourissati*)
- 9 Melissiska (*Paretroplus gymnopreoperculatus*)
- 23 Zoono (*Pachypanchax* sp. Sofia)

Transported 31 hours overland from Marotandrano to Andapa

- Mortalities – 1 (Lamena)



Situation today

- Over 12,000 Joba mena hatched in Andapa
- Thousands of Lamena hatched also
- Thousands of Pachypanchax hatched
- No Melissisika reproduction noted



Back at London Zoo

Both males
die within a
month of each
other.





Securing the future

- Fish transferred to Toronto Zoo as back up populations
- ZSL, Toronto Zoo, American Cichlid Association and ZGAP (German Zoological Association) providing funding for the operation and expansion of fish farm in Andapa
- ZSL providing water quality monitoring equipment, training and husbandry support to APPA



Other possibilities

Translocation of fish from downstream to upstream area within the boundary of the Marotandrano Reserve.



Other work

- Country-wide freshwater fish assessment and IUCN Red Listing workshop to update records and identify areas of need.
- Expand the network of protected areas so that boundaries are based on or include key watersheds, with headwaters of main systems protected.
- Train Malagasy biologists and conservationists in techniques for monitoring freshwater ecosystems.



Acknowledgements

- Mr Tim Smart, British Ambassador to Madagascar & Foreign and Commonwealth Office
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- ZGAP - Zoological Society for the Conservation of Species and Populations (Zoologische Gesellschaft für Arten- und Populationsschutz)
- Toronto Zoo
- Zoological Society of London

Thank you for your attention

Questions?

