

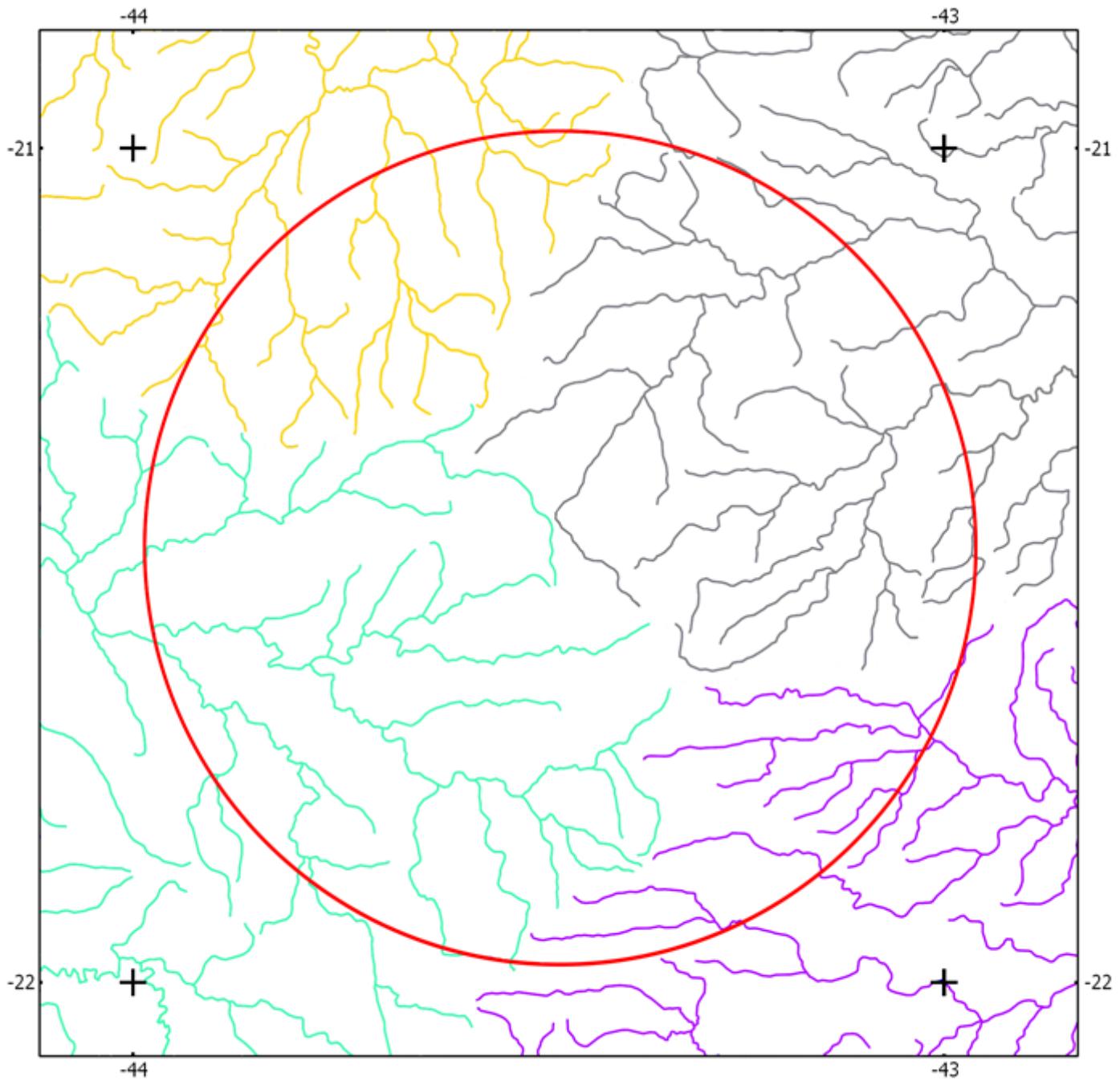
FISHES IN A BRAZILIAN MOUNTAIN  
AND ITS ADJACENT AREAS:  
KNOWLEDGE, SCIENTIFIC  
SHORTFALLS, THREATS, AND  
CONSERVATION

Valter M. Azevedo-Santos

# MINAS GERAIS: AN ESPECIAL CASE

- High altitudes (above 800 m)
- Different basins

■ Paraná  
■ Doce  
■ São Francisco  
■ Paraíba do Sul



# Mapa sem título

Escreva uma descrição para seu mapa.

## Legenda

-  Caminho sem título
-  R1

~1126

R1 ~828

Google Earth

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Image © 2019 CNES / Airbus

N

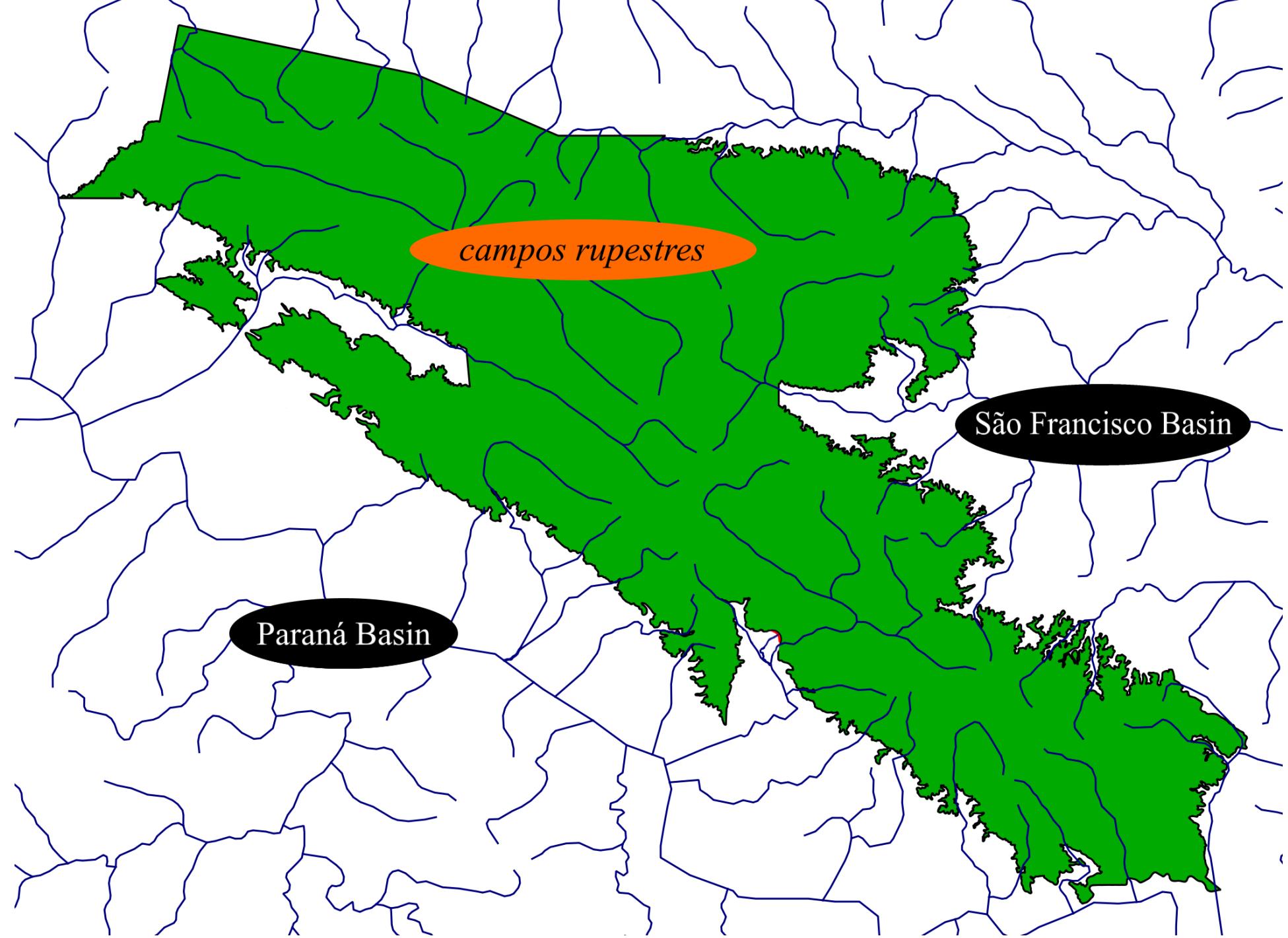
1 km



AZEVEDO-SANTOS, V. M., BRITSKI, H. A., OLIVEIRA, C., BENINE, R. C. Ichthyofauna of streams of the Rio Sapucaí basin, upper Rio Paraná system, Minas Gerais, Brazil. *Biota Neotropica*. 19(1): e20180617. <http://dx.doi.org/10.1590/1676-0611-BN-2018-0617>

# Serra da Canastra – Minas Gerais

- *campos rupestres*
- several headwater streams
- two different basins
- present some peculiarities



Serra da Canastra may be  
considered an “island” for fishes?

# Species collected from 970 to 1364m

*Astyanax fasciatus* (Cuvier, 1819)

*Astyanax rivularis* (Lütken, 1875)

*Harttia torrenticola* Oyakawa, 1993

*Neoplecostomus canastra* Roxo, Silva, Zawadzki, & Oliveira 2017

*Hisonotus* sp.

*Pareiorhina rosai* Silva, Roxo & Oyaka, 2016

*Trichomycterus brasiliensis* Lütken, 1874

*Trichomycterus variegatus* Costa, 1992

**~732 m**

Lophiobrycon weitzmani

**~821 m**

Lophiobrycon sp. n.2  
Sao Roque de

**CANAESTRA**

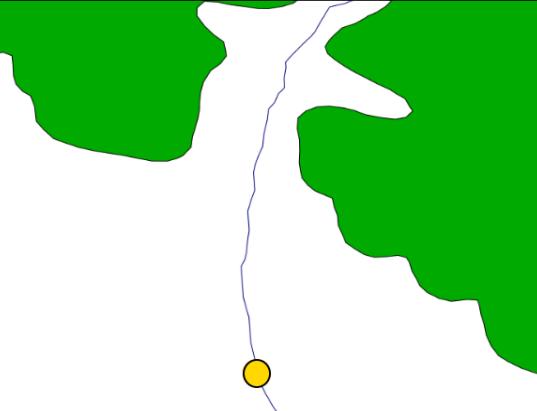
**~942 m**

Lophiobrycon sp. n.1

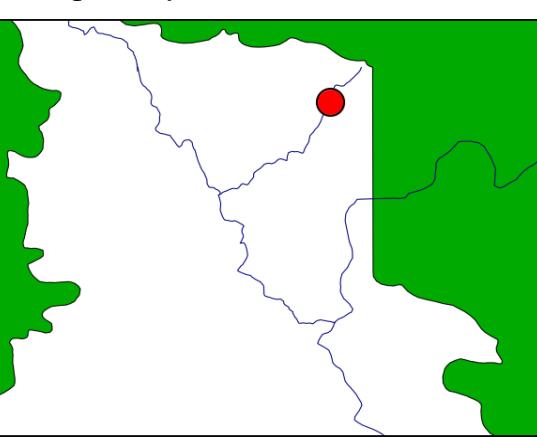
Google Earth

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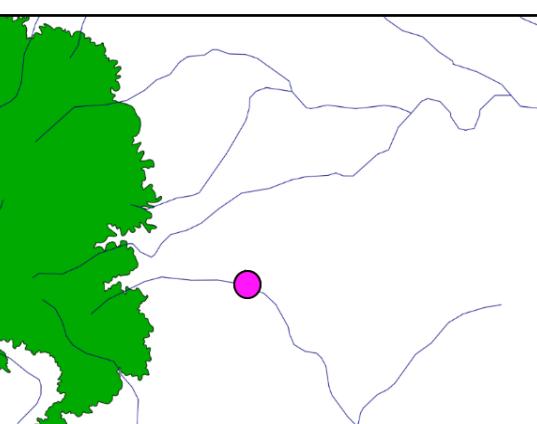
Image Landsat / Copernicus



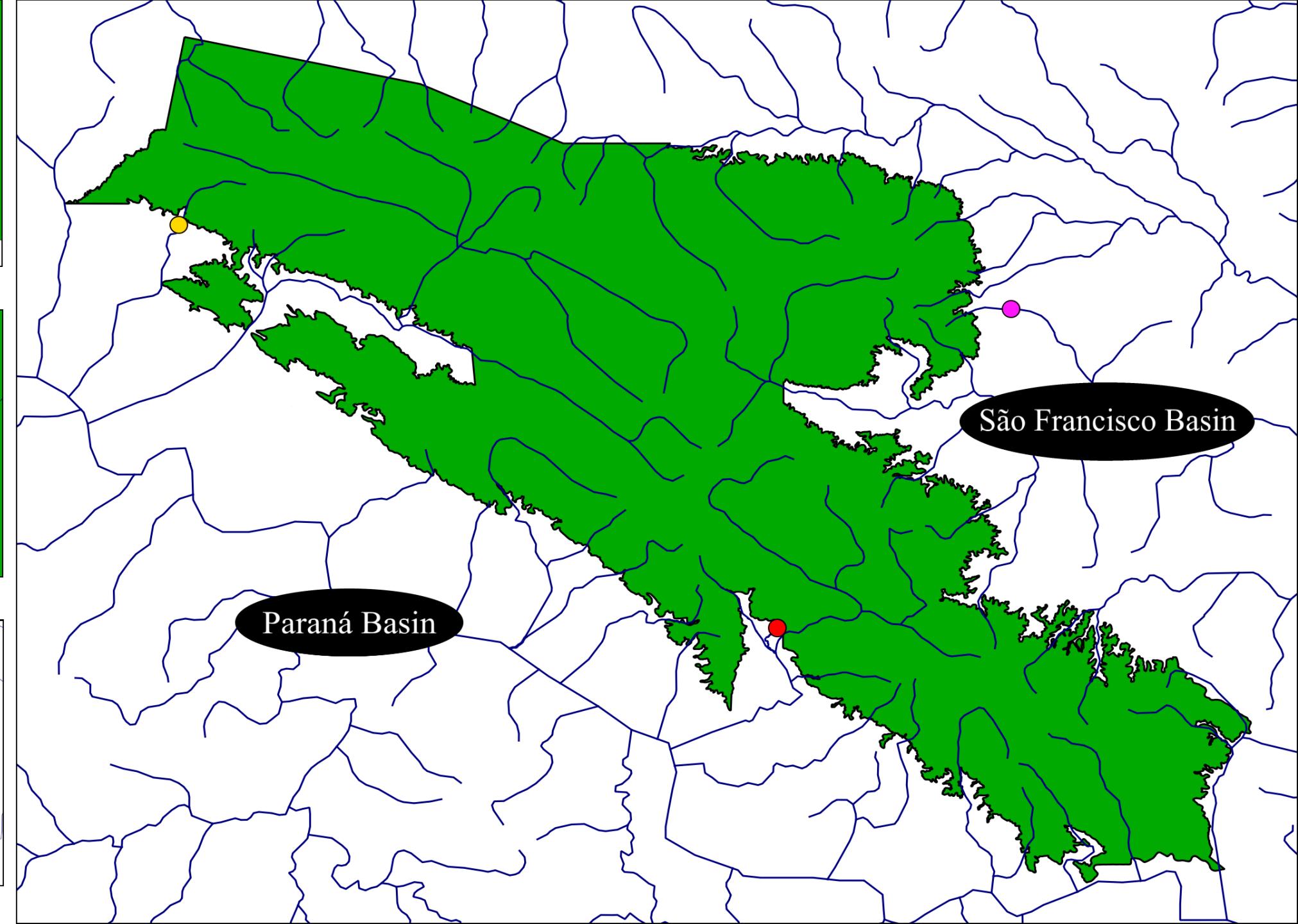
*Lophiobrycon weitzmani*



*Lophiobrycon sp. n. 1*



*Lophiobrycon sp. n. 2*



# Some possibilities

- Altitudinal tolerance for fishes is large.
- “Islands” can be applied only for some species of fish.
- Or fish populations are under isolation process

# We need to be quick

Instituto Chico Mendes de Conservação da Biodiversidade  
**ICMBio**  
MINISTÉRIO DO MEIO AMBIENTE

PÁGINA INICIAL > ÚLTIMAS NOTÍCIAS > GERAL > OPERAÇÃO COMBATE MINERAÇÃO ILEGAL NA SERRA DA CANASTRA

## Operação combate mineração ilegal na Serra da Canastra

Publicado: Quarta, 20 de Fevereiro de 2019, 15h28

Quem é quem | Planos de Manejo | Geoprocessamento | Painel dinâmico

Operação SOS Canastra contou com a participação de 15 agentes do ICMBio e aproximadamente 270 agentes da Polícia Federal

Illegal mining

MENU G1 CENTRO-OESTE - MG TV INTEGRACAO

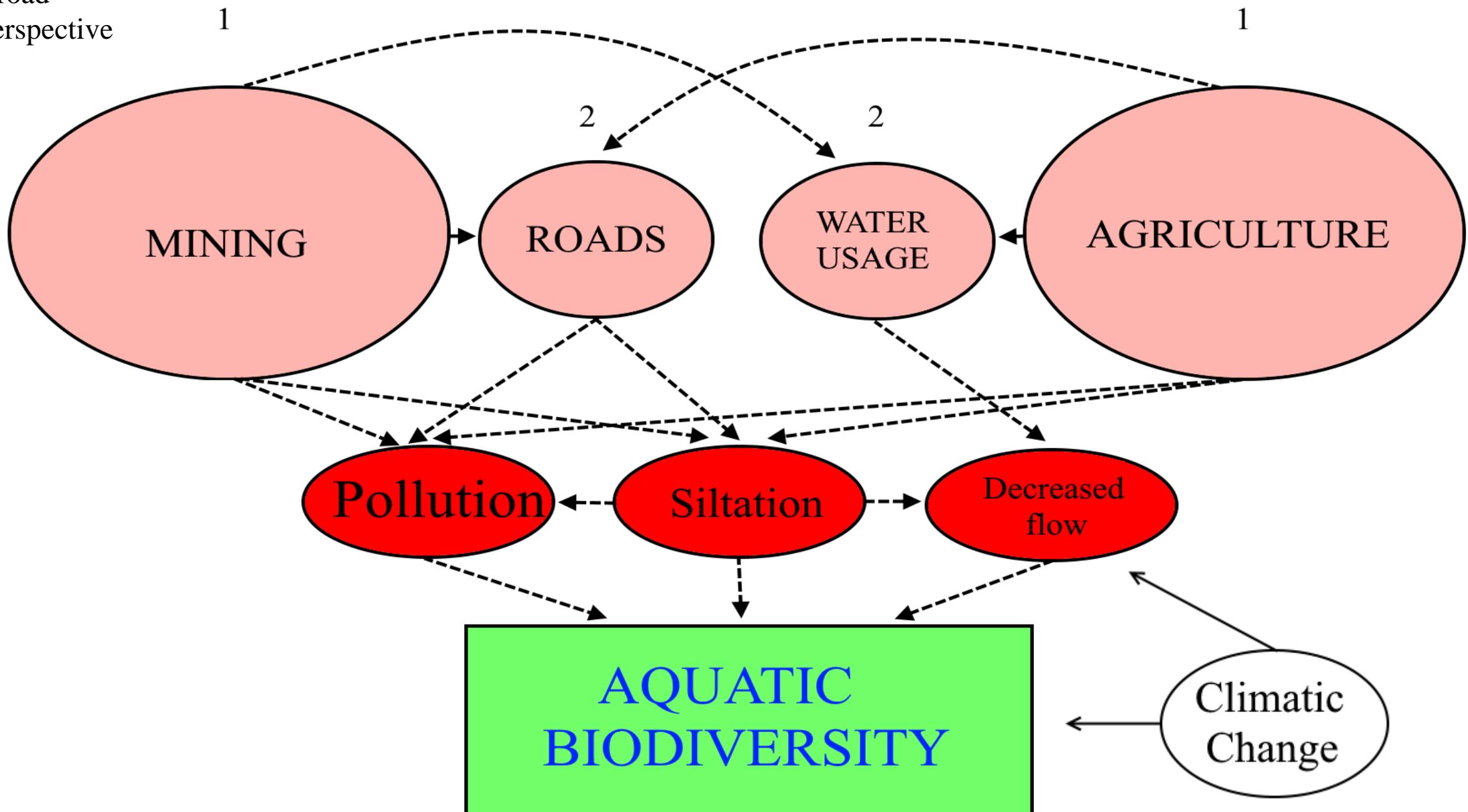
05/11/2015 19h26 - Atualizado em 11/11/2015 12h20

## ICMbio pede consciência a trilheiros para evitar degradação na Canastra

Chefe do parque diz que motoristas degradam região com motos e jipes. Especialistas apontam necessidade de guias em São Roque de Minas.

Roads

Broad  
perspective





N

Pôrto do Salto

~1260

Image © 2019 CNES / Airbus  
© 2018 Google

Image © 2019 DigitalGlobe

Google Earth

# Mapa sem título

Escreva uma descrição para seu mapa.

## Legenda

♂ Caminho sem título

~1153 m

N

400 m

Google Earth

© 2018 Google

Image © 2019 CNES / Airbus



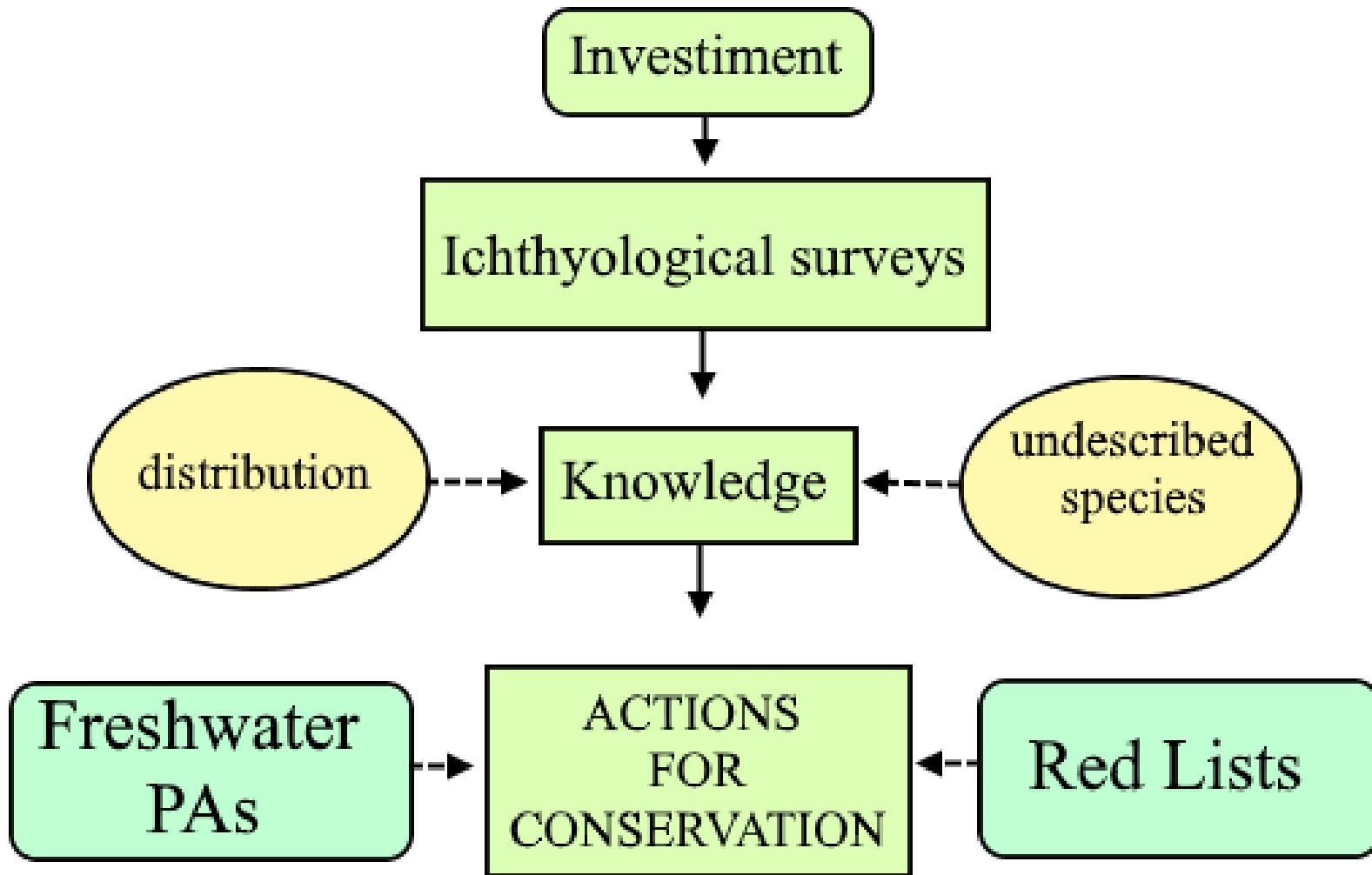
Google Earth

Image ©2019 DigitalGlobe

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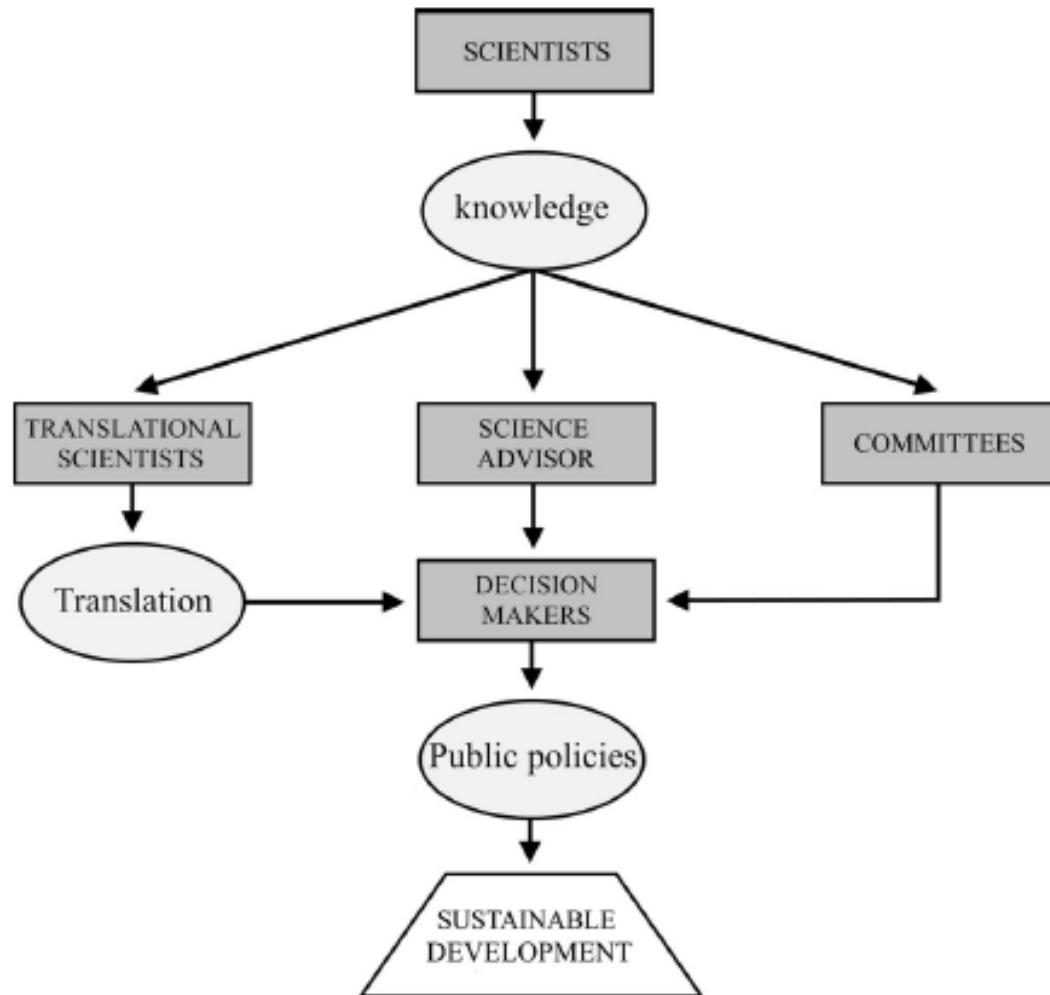
# Ways needed.

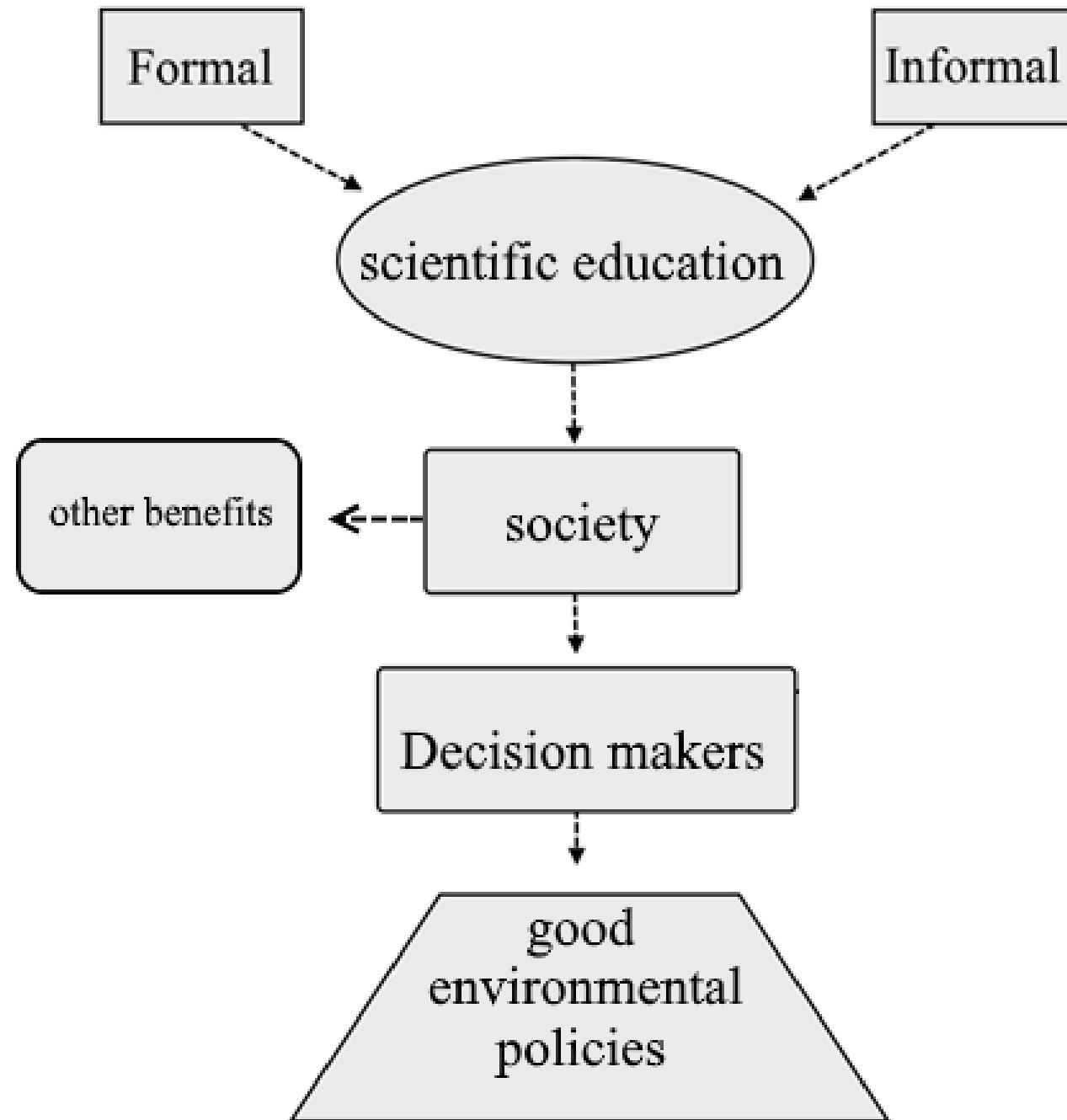


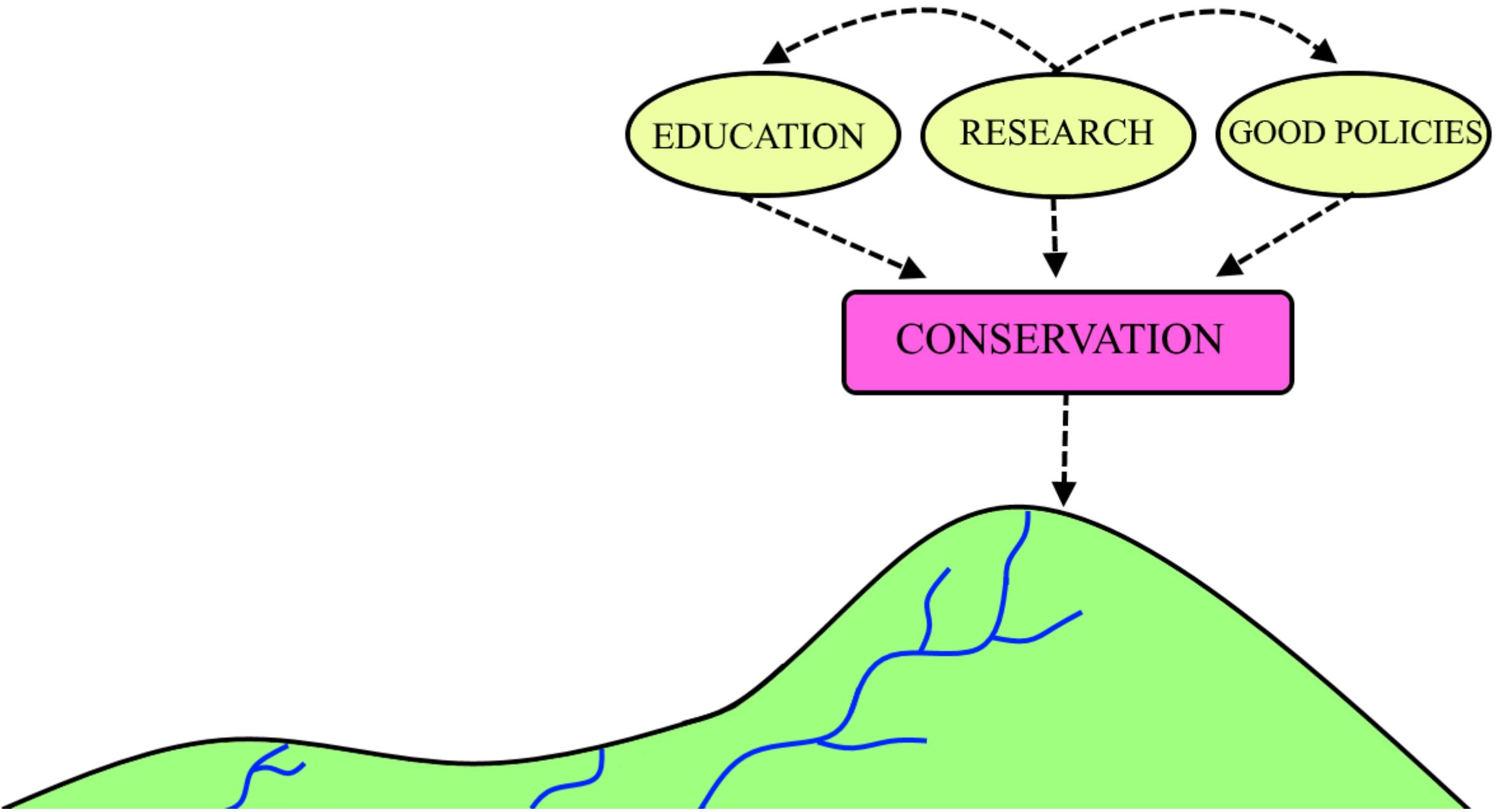
# Ways needed..

1748

Biodivers Conserv (2017) 26:1745–1752









AGÊNCIA NACIONAL DE ENERGIA ELÉTRICA

P&D - PROGRAMA DE PESQUISA  
E DESENVOLVIMENTO



Rilhas Team

Thanks



UNIVERSIDADE FEDERAL  
DE MINAS GERAIS



P&D  
GT - 599

# Thank you.

A wide-angle photograph of a sunset over a landscape. The sky is filled with warm, orange, and yellow hues, transitioning into darker blues and purples at the horizon. In the foreground, dark silhouettes of grasses and low hills are visible. A large, bright sun sits on the horizon, casting its light over a body of water that reflects the warm colors of the sky. The background consists of several layers of hills and mountains, their outlines becoming darker as they recede into the distance.

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