



Pacific Transitional Areas Symposium 2018

Analysis of the community structure of the mangrove fish in the American Continent

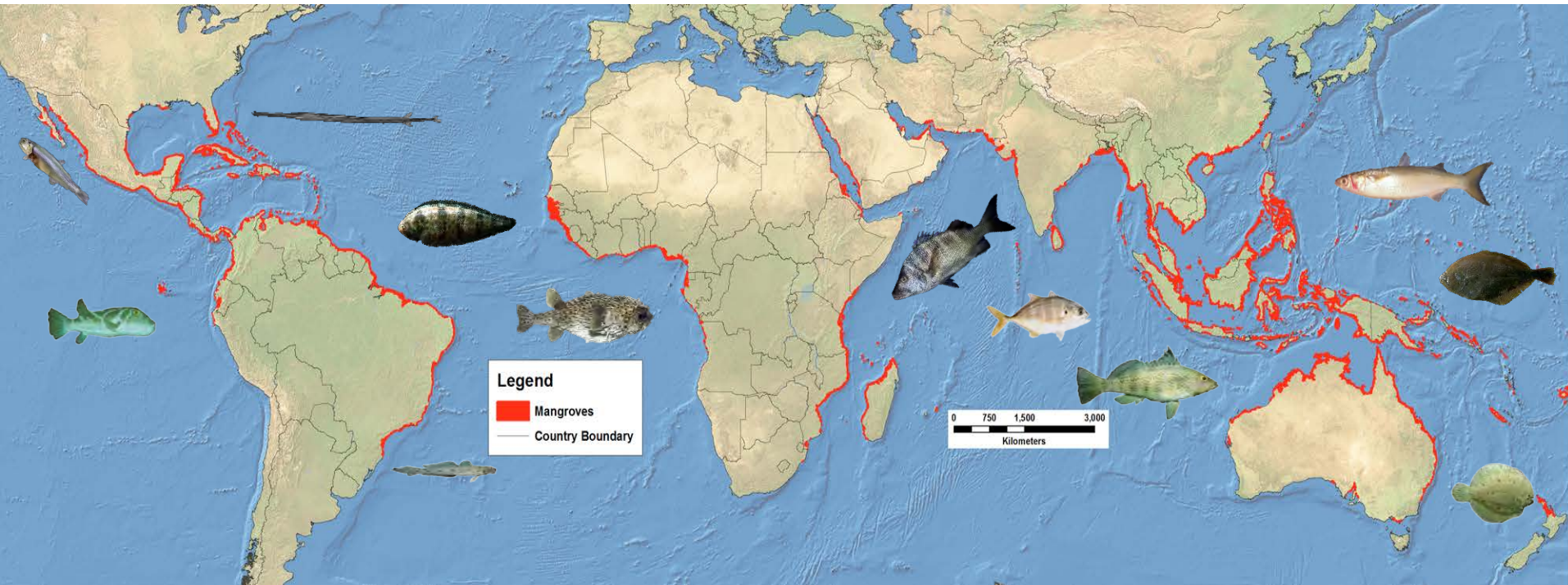
J. Á. Payan-Alcacio

R. Moncayo-Estrada

J. De la Cruz-Agüero

G. De la Cruz-Agüero

Mangroves



Functional traits

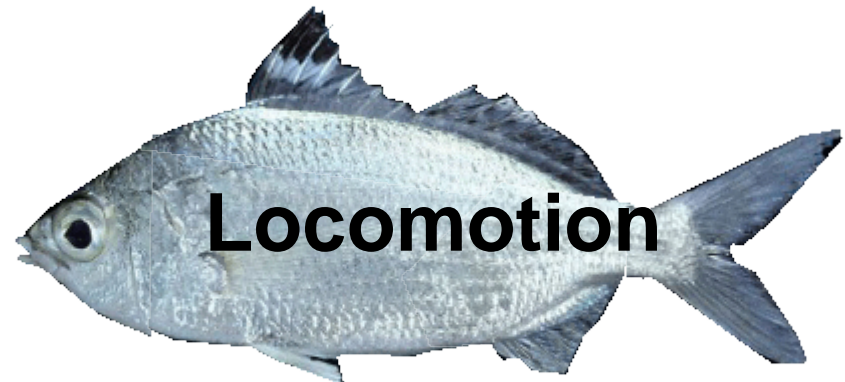
Locomotion

Feeding

Locomotion

Feeding

Habitat use



Previous studies



Stuart-Smith *et al.*, 2013



Toussaint *et al.*, 2016



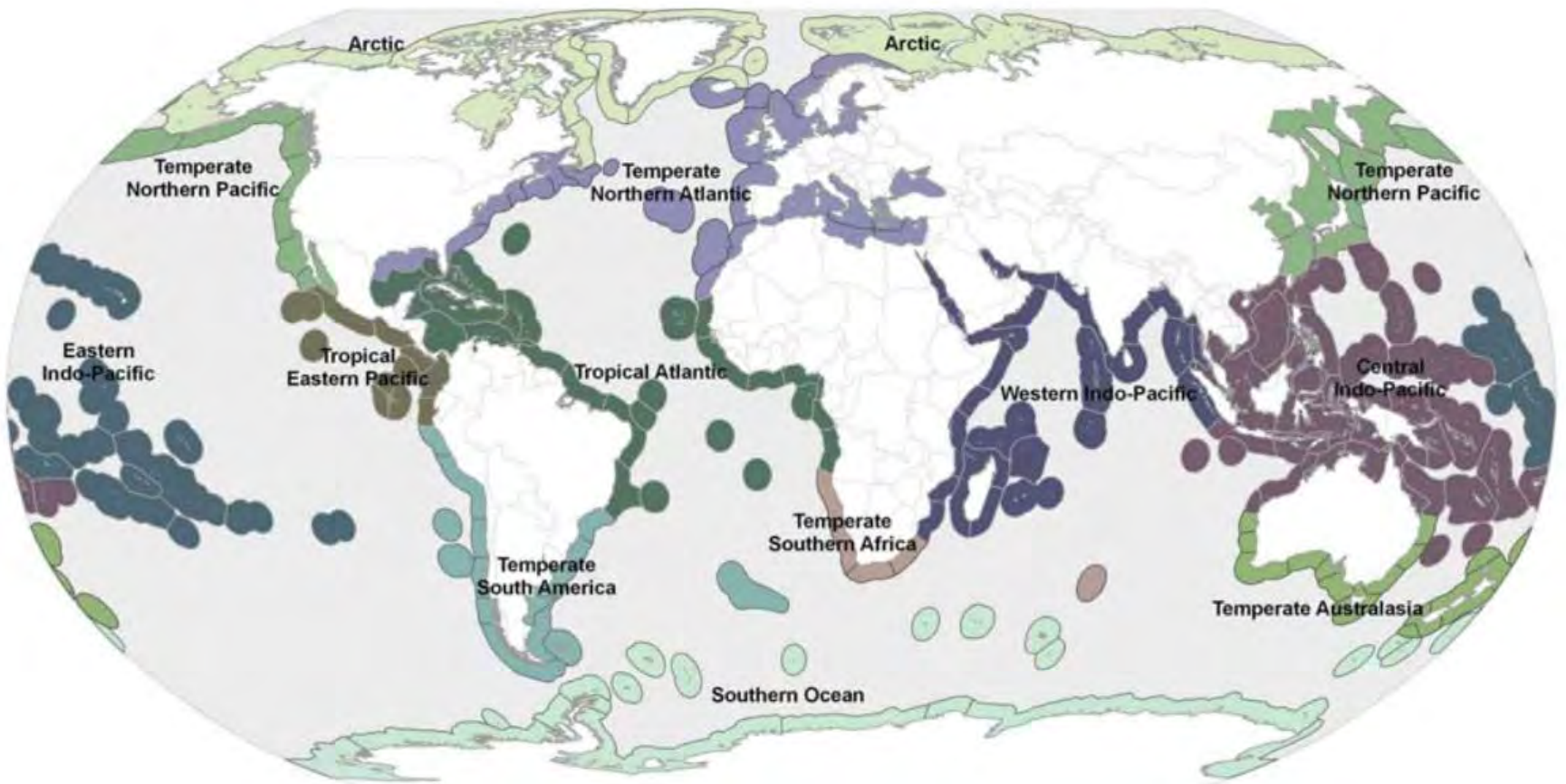
Henriques *et al.*, 2016; 2017



Objective

Characterize the variation patterns of functional diversity in the mangrove fish community in America

Biogeography



Photographs



[iSpecies.org](https://www.iSpecies.org)

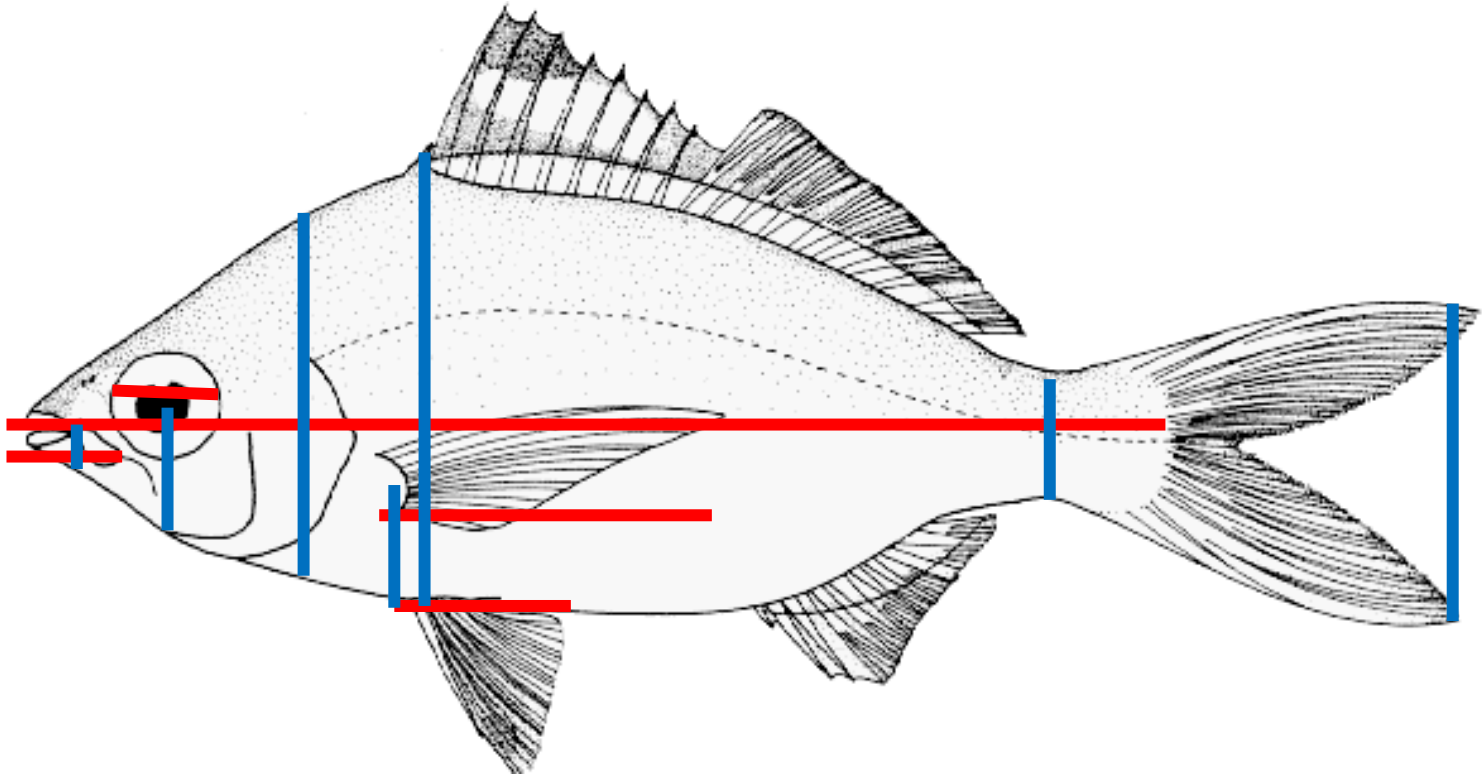
[Naturalista.mx](https://www.Naturalista.mx)

[Fishbase.org](https://www.Fishbase.org)

Ichthyological collections

Natural museums

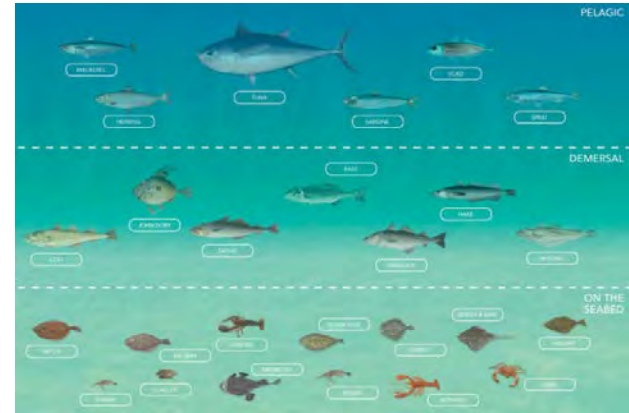
Measures



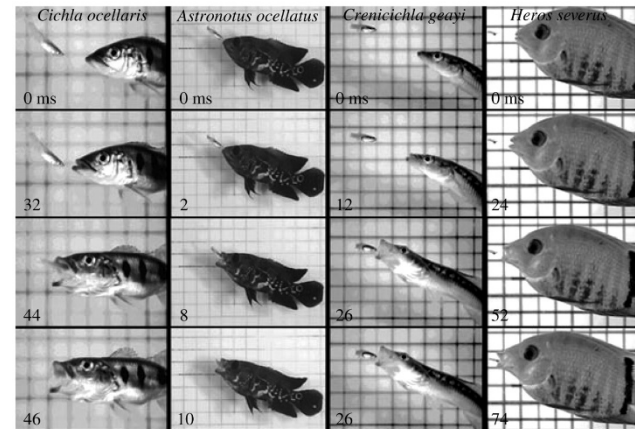
The *ratios* of the body parts reflect
functional traits

Functional traits

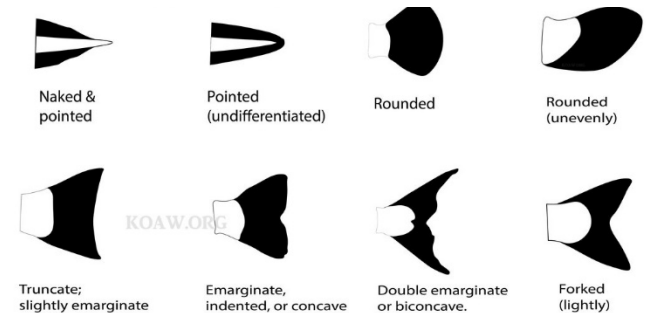
Habitat use → 4



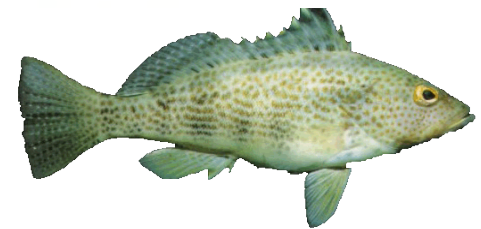
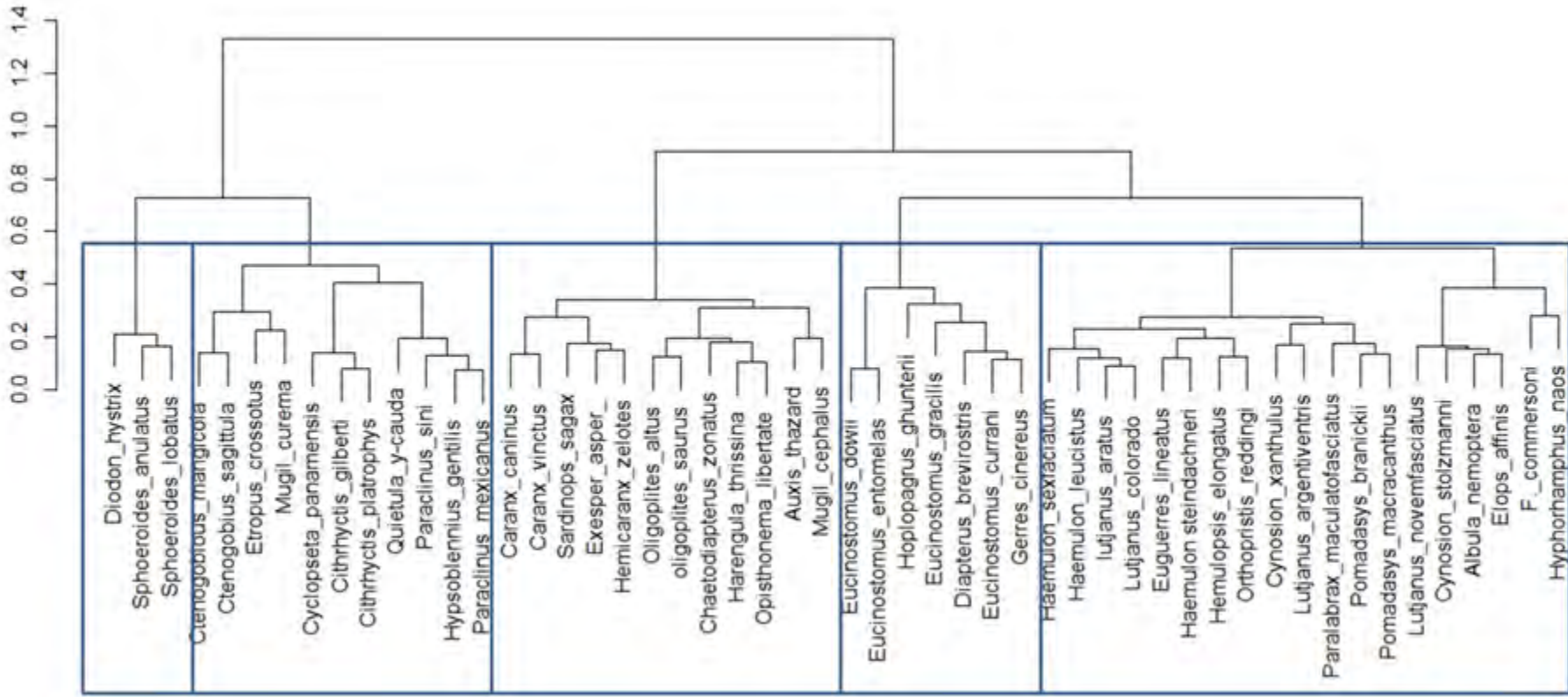
Feeding → 3



Locomotion → 2

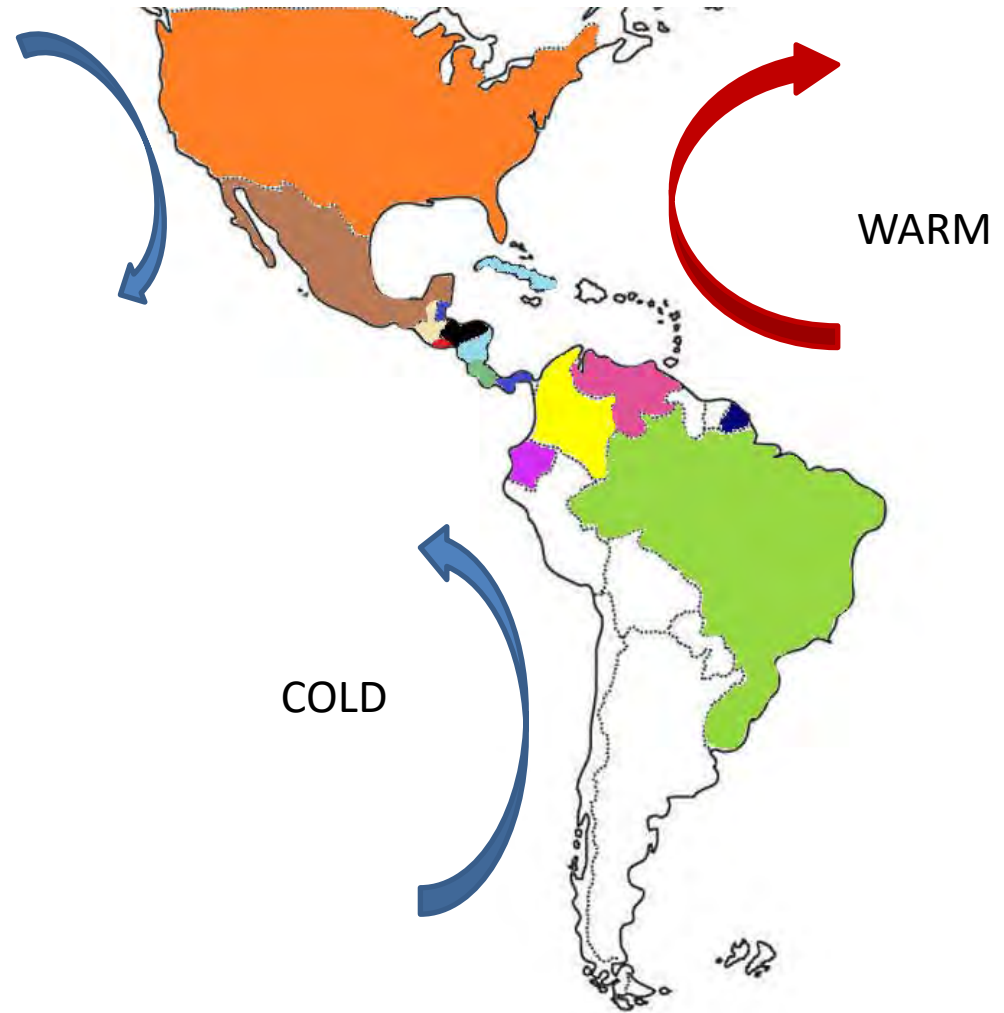


Functional groups



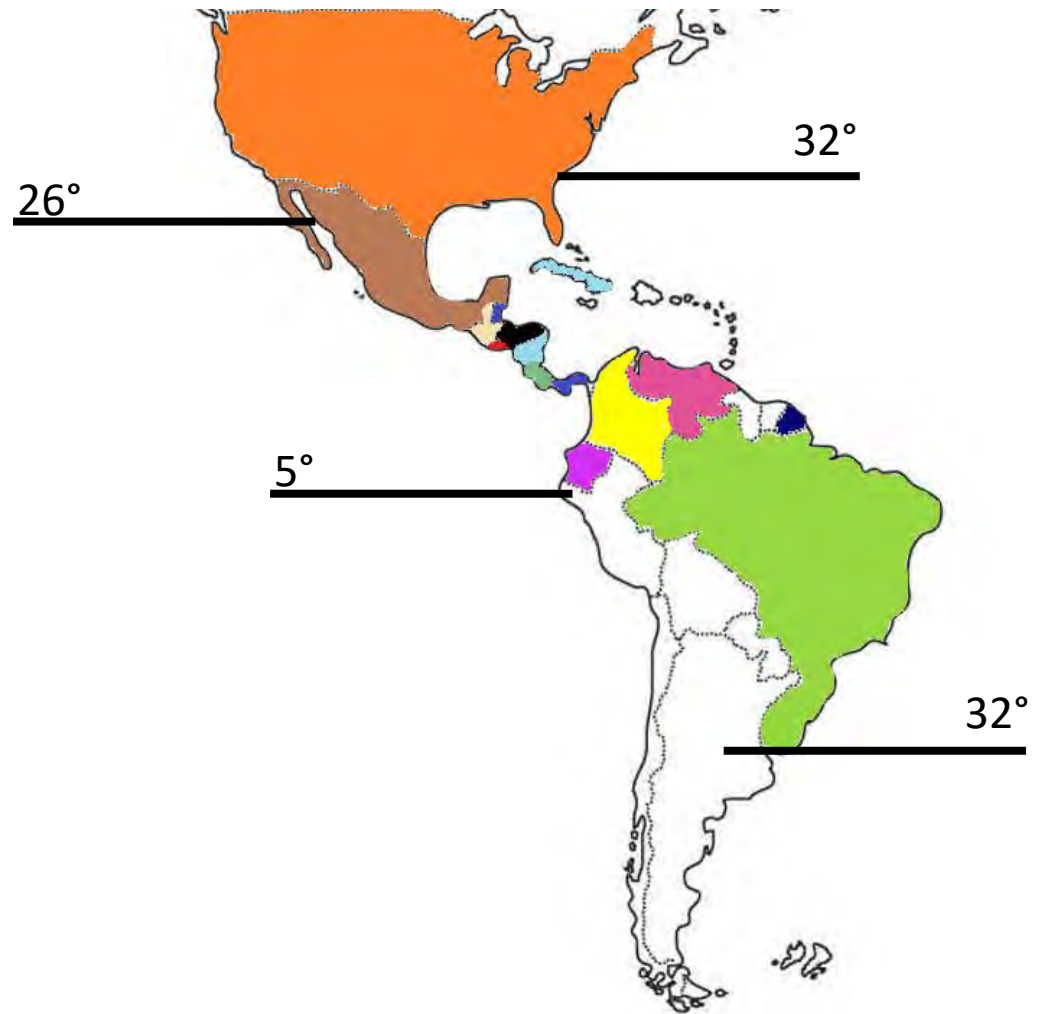
Results so far...

- 524 species total
 - 334 Atlantic
 - 194 Pacific
- Haemulidae 32
- Carangidae 28
- Gerreidae 22

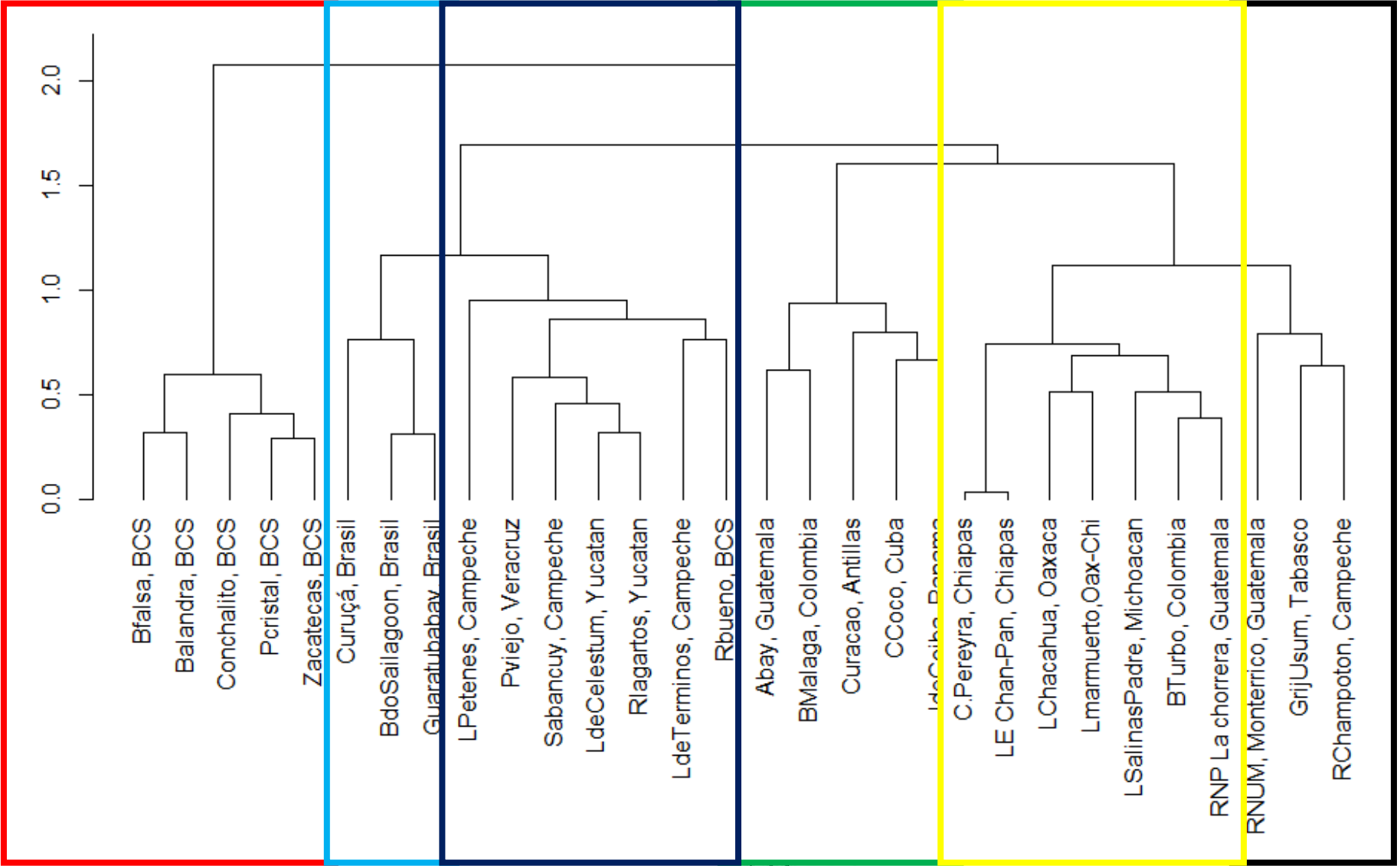


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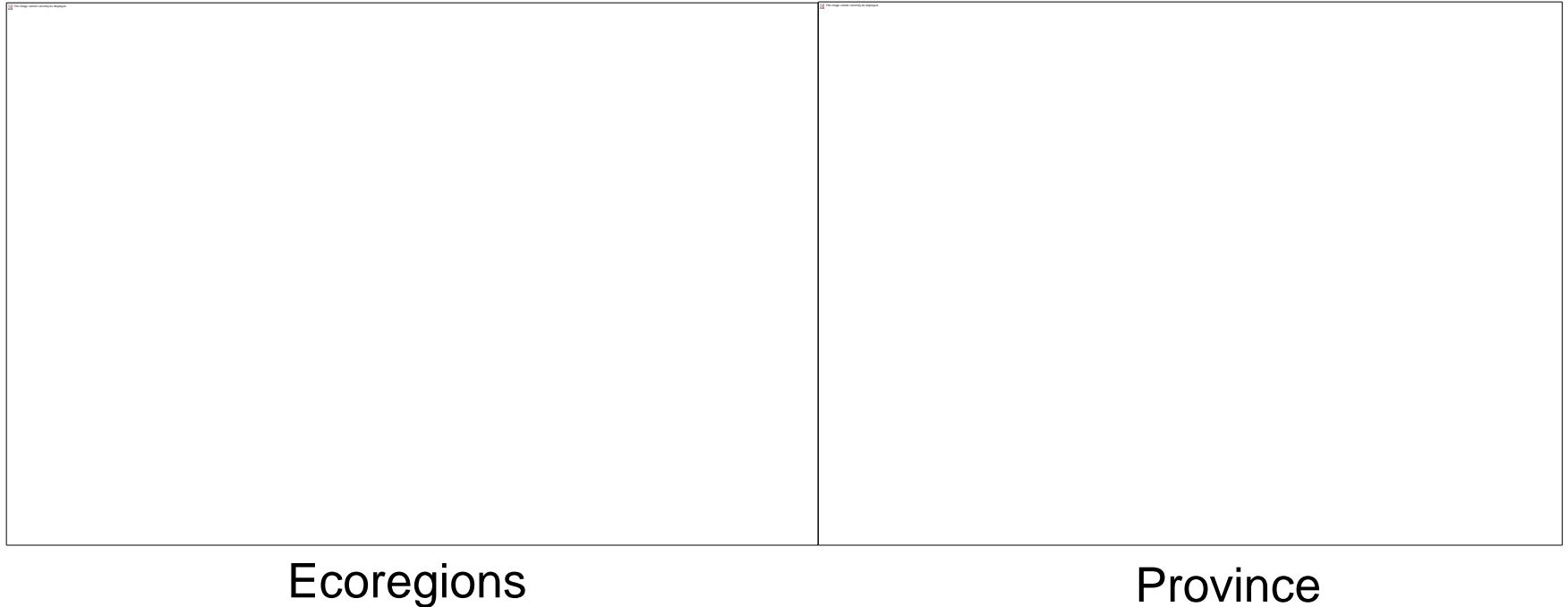
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Mangroves cluster zones

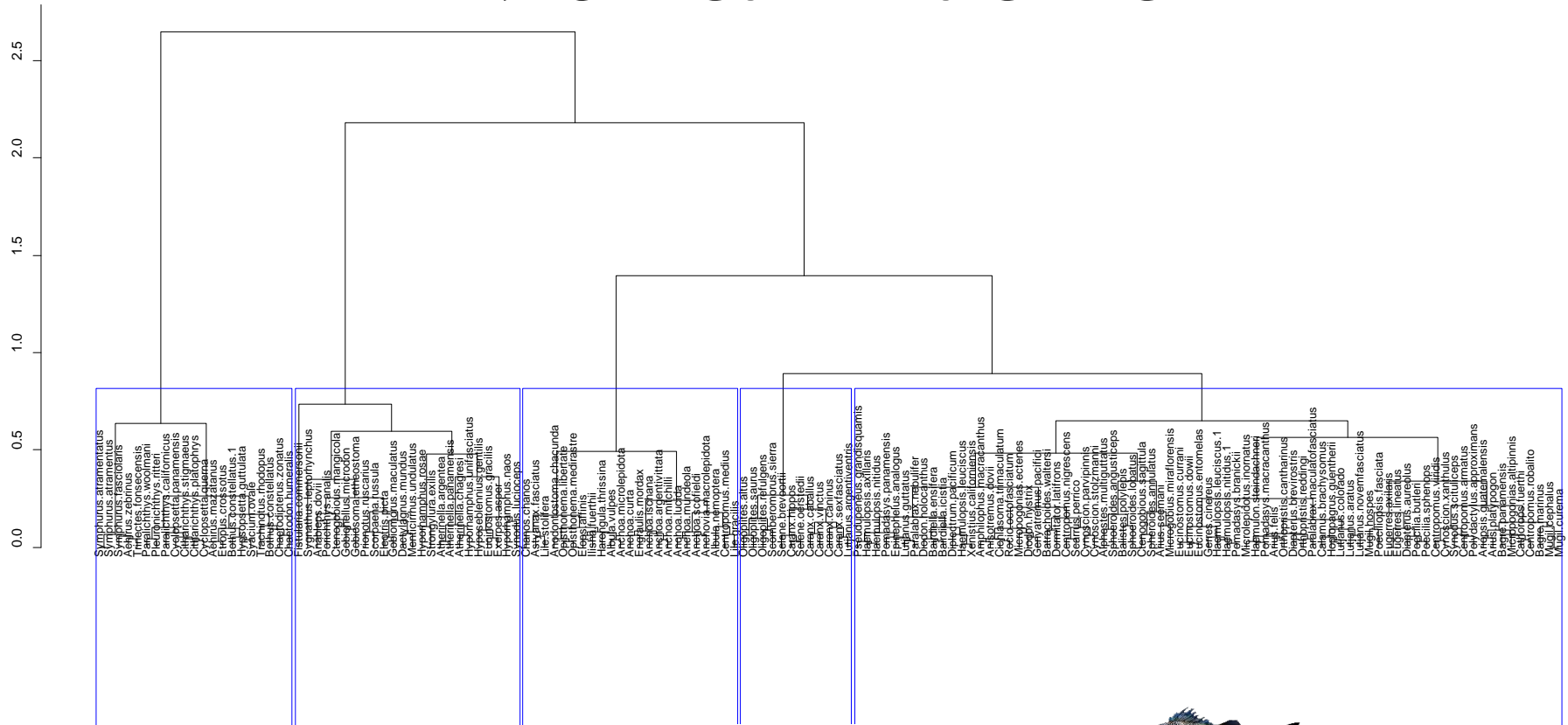


Regionalization



- Tropical Northwestern Atlantic is better explain with ecoregions
- The rest of the cluster groups relates more to the province level

Mexican Pacific



High compressed benthic

Tubular benthic

Small pelagic

Pelagic predators

Generalistic

Functional structure

	BF BCS	PC BCS	Bal BCS	Con BCS	Zac BCS	LC OAX	LMM OAX- CHI	LSP MIC	LCP CHI	CP CHI
Gener alist	0.96	0.82	0.91	0.78	0.86	0.67	0.64	0.63	0.63	0.63
TubBe nthic	0.04	0.10	0.00	0.10	0.05	0.03	0.08	0.21	0.17	0.17
SmaP elagic	0.00	0.03	0.03	0.06	0.00	0.09	0.14	0.05	0.07	0.07
HCBen thic	0.00	0.03	0.06	0.02	0.09	0.06	0.06	0.05	0.07	0.07
PelPre dator	0.00	0.03	0.00	0.04	0.00	0.15	0.09	0.05	0.07	0.07

Summary

- Spalding province classification seems to better represent the taxonomic grouping of mangrove fish.
- Five functional groups are defined for the mangrove habitat (Mexican Pacific)
- Generalistic species are dominant

Thanks for
your attention

