

## The Diet and niche overlap of two cichlid species in the Volta Grande region of the Xingu River, Pará, Brazil

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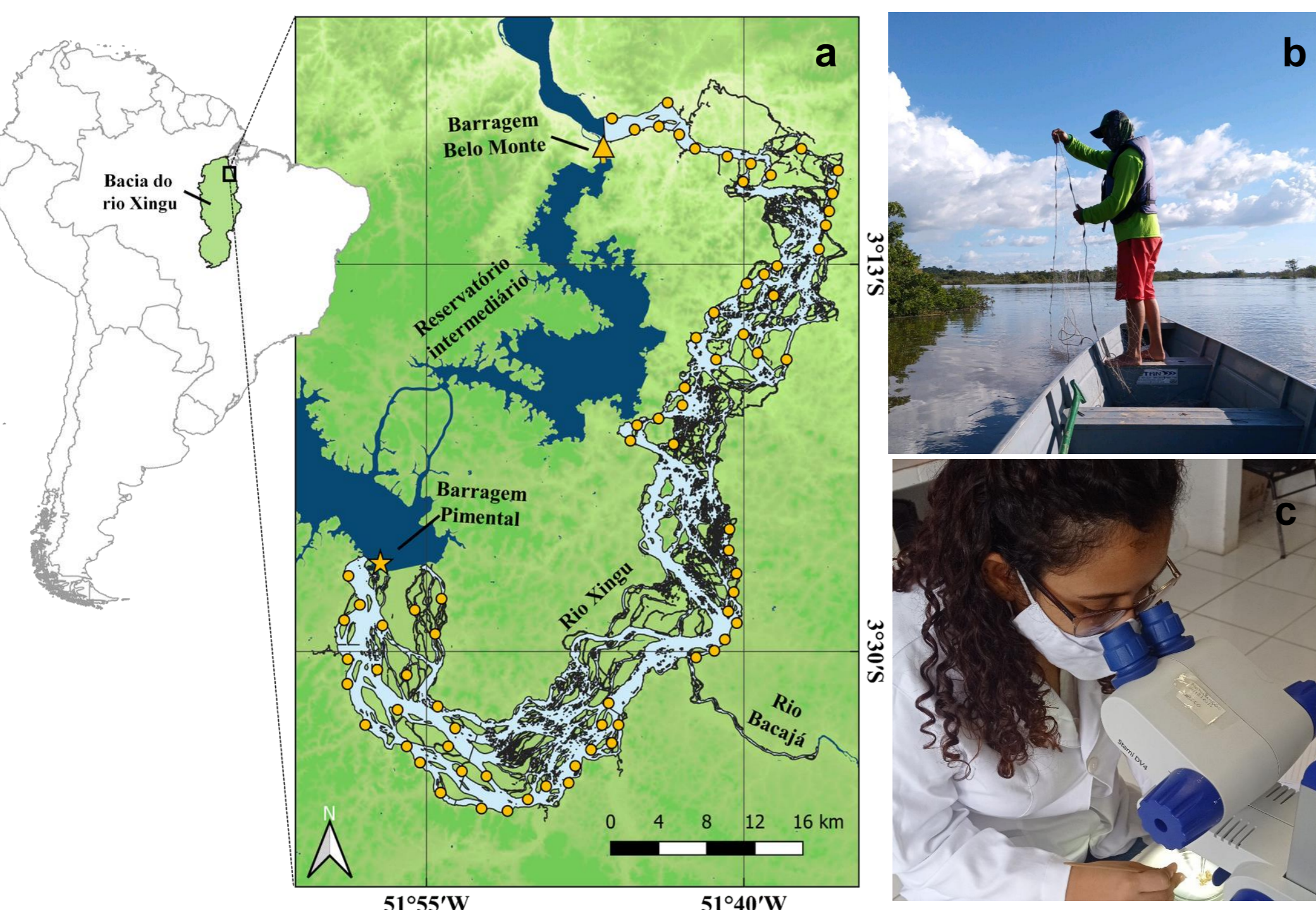
### INTRODUCTION & AIM

Flood pulse acts as a regulator of trophic ecology for fish fauna in Amazon floodplain areas: during high water, there is a predominance of allochthonous resources (e.g., terrestrial plants and insects), while during low water periods, autochthonous resources (e.g., aquatic insects and mollusks) are more prevalent.

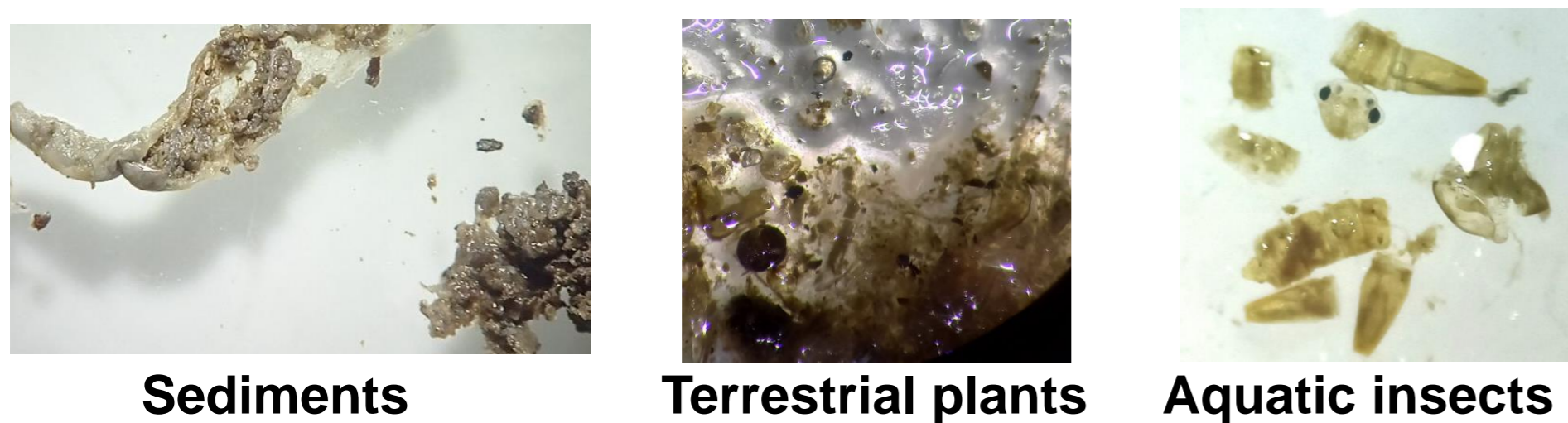
The objective of this study was to evaluate the diet and niche overlap of the sympatric species *Geophagus argyrostictus* and *G. altifrons* in the Volta Grande region of the Xingu River (an area impacted by dam construction).

### METHOD

The study was conducted in the Volta Grande region of the Xingu River, specifically in the stretch of reduced flow (TVR) (a). Fish collection was carried out using gill nets (b). The fish stomachs were removed and analyzed in the laboratory.



Food items were weighed and taxonomically classified.



For data analysis, we utilized the Food Importance Index (IAi%), Pianka's overlap index, and Permutational Multivariate Analysis of Variance (PERMANOVA).

### RESULTS & DISCUSSION

In summary, the diet of *G. altifrons* was predominantly composed of terrestrial plants during the high water period and sediments during the low water period. In contrast, *G. argyrostictus* feeding sediments during all periods, though in different proportions.

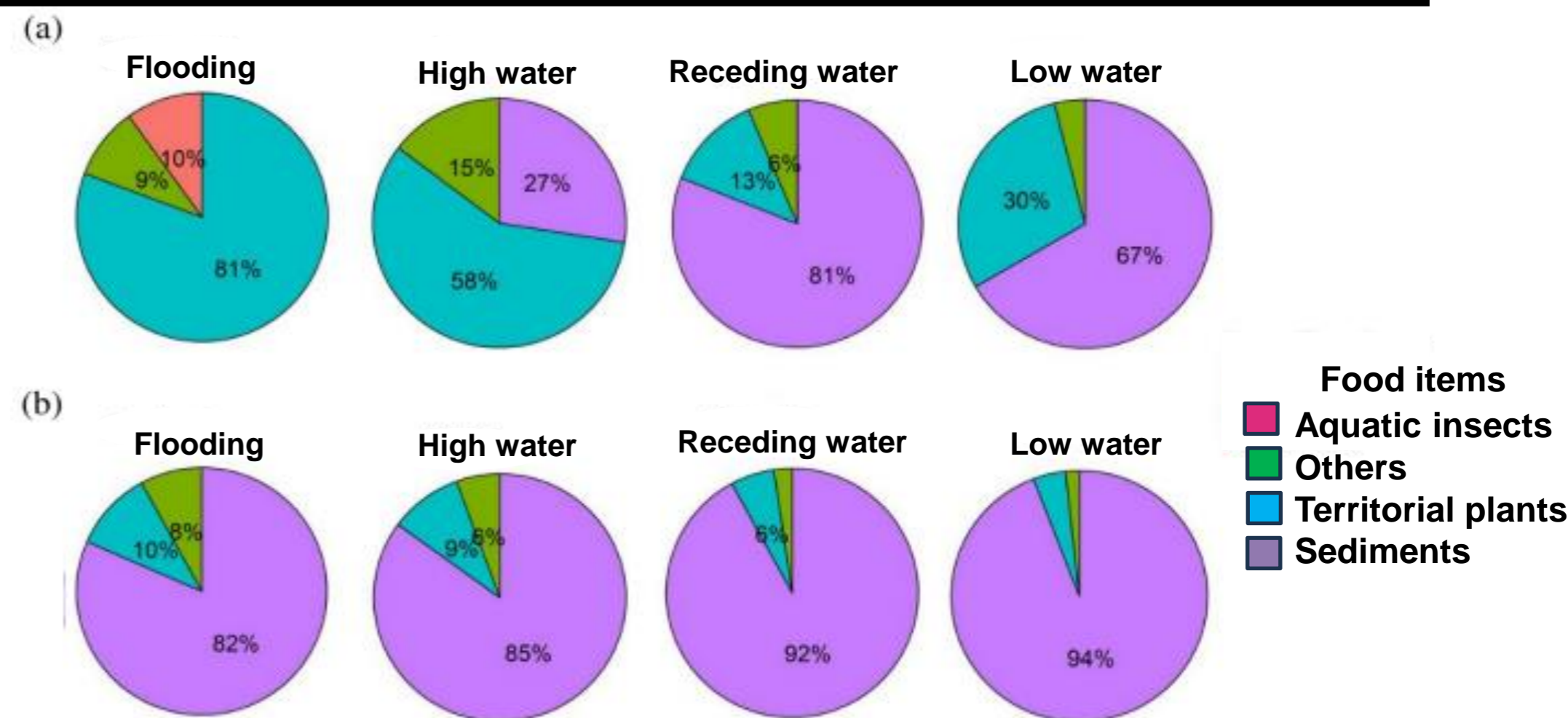


Figure 1. Dietary composition of specimens of *G. altifrons* (a) and *G. argyrostictus* (b) across hydrological periods

PERMANOVA	<i>G. altifrons</i>		<i>G. argyrostictus</i>	
	Valor F	Valor P	Valor F	Valor P
Flooding/Low water	5,714	0,004*	2,315	0,097
Flooding/Receding water	16,319	<0,001*	0,531	0,595
Flow water/High water	3,060	0,069	5,609	0,008*
High water/Receding water	9,928	<0,001*	3,017	0,037*

Figure 2. Statistical values (PERMANOVA) comparing the diets of specimens of *G. altifrons* and *G. argyrostictus* across hydrological periods.

The trophic niche overlap of the species was greater during low water periods and less intense during high water periods (GLM;  $t = -2.234$ ,  $p = 0.049$ ).

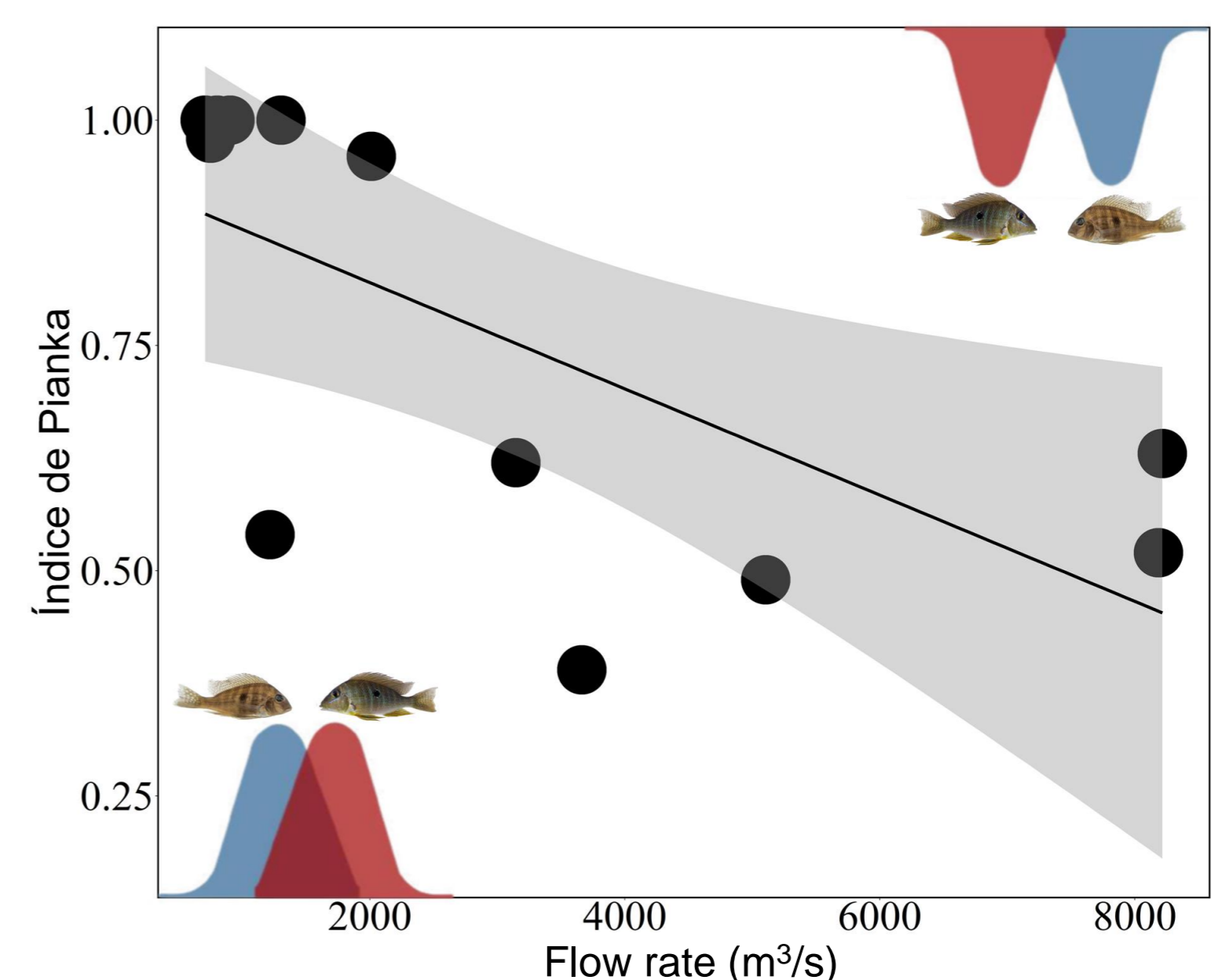


Figure 2. Niche overlap (Pianka Index) between *G. altifrons* and *G. argyrostictus* across hydrological periods

### CONCLUSION

The flood pulse influences the dietary composition and niche overlap of *Geophagus* species. Studies like these are essential for understanding the biology of species in impacted areas.

### FUTURE WORK / REFERENCES



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