The following supplement accompanies the article

Exploring ecosystem functioning in two Brazilian estuaries integrating fish diversity, species traits and food webs

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Table S1. List of the 9 traits tested in the study, with morphological traits measured on captured fish. Formula adapted from Villéger et al. (2012) and Pessanha et al. (2015). *Bh* - body height; *Bw* - body width; Bl - body total length, *Hh* - head height along the vertical axis of the eye, *Mh* - mouth height; *Mw* - mouth width; Eh - eye height; PFl - pectoral fin length; *PFw* - pectoral fin width; *CPl* - caudal peduncle length; *CPh* - caudal peduncle height; *CPw* - caudal peduncle width; *CPh* - caudal fin height.

Trait	Measurement/category	Ecological meaning
Size	Measured mass (g wet mass): Log (mass + 1)	Size, metabolism (e.g. size is related to food intake and to their impact on the food web)
Body transversal shape	$\frac{Bh}{Bw}$	Vertical position in the water column and hydrodynamism (*e.g.* high values indicate laterally compressed fish)
Relative Head Length	$\frac{Hh}{Bl}$	Size of food items captured (*e.g.* larger heads indicate fish able to handle larger prey)
Oral gape shape	$\frac{Mh}{Mw}$	Method to capture food items (*e.g.* high values indicate narrow mouths with large aperture)
Eye position	$\frac{Eh}{Hh}$	Vertical position in the water column (e.g. Benthic fish have typically eyes located dorsally, while nektonic fish have laterally located eyes)
Aspect ratio of the pectoral fin	$\frac{PFl}{PFw}$	Pectoral fin use for propulsion (e.g. higher values indicate long and narrow fin)
Relative peduncle length	$\frac{CPl}{Bl}$	Locomotion - swimming ability (e.g. long peduncles indicate fish with good swimming ability)
Caudal Peduncle Compression	$\frac{CPh}{CPw}$	Locomotion (e.g. high values typical of less active fish)
Caudal peduncle throttling	$\frac{CFh}{CPh}$	Caudal propulsion efficiency through reduction of drag

We followed the conventions from Villegér et al. (2012) for the flatfishes:

- Morphological parameters were measured relatively to the position of the fish in its environment (lateralization not considered);
- *Eye position* was computed as $\frac{2 \times Ed}{Hd}$, to account for the two eyes on the "top" of the head;
- *Aspect ratio of the pectoral fin* was fixed to 0, as flatfishes were considered without functionally pectoral fins.

References

Pessanha ALM, Araújo FG, Oliveira REMCC, da Silva AF, Sales NS (2015) Ecomorphology and resource use by dominant species of tropical estuarine juvenile fishes. Neotrop Ichthyol 13: 401−412

Villéger S, Miranda JR, Hernandez DF, Mouillot D (2012) Low functional β-diversity despite high taxonomic β-diversity among tropical estuarine fish communities. PLOS ONE 7: e40679

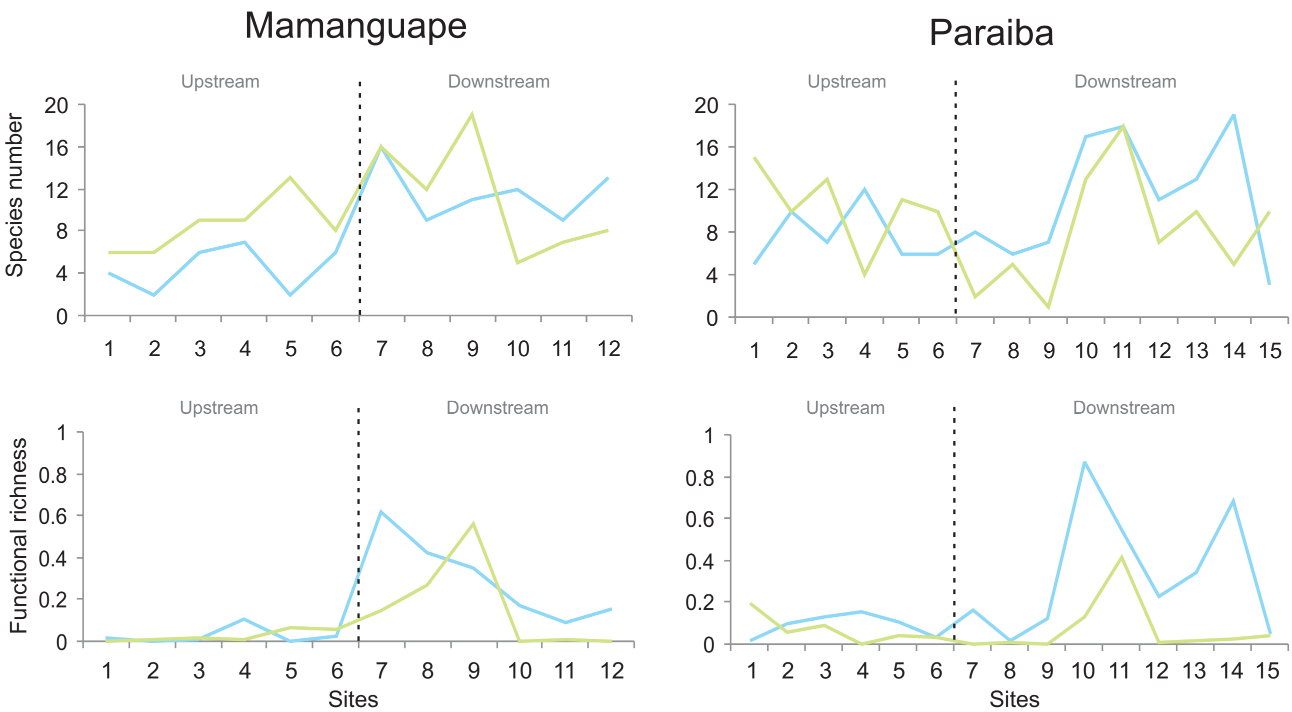

Fig. S1. Variation of the species number and the functional richness along the estuarine gradient of each estuary, for the dry (green) and wet (blue) seasons.

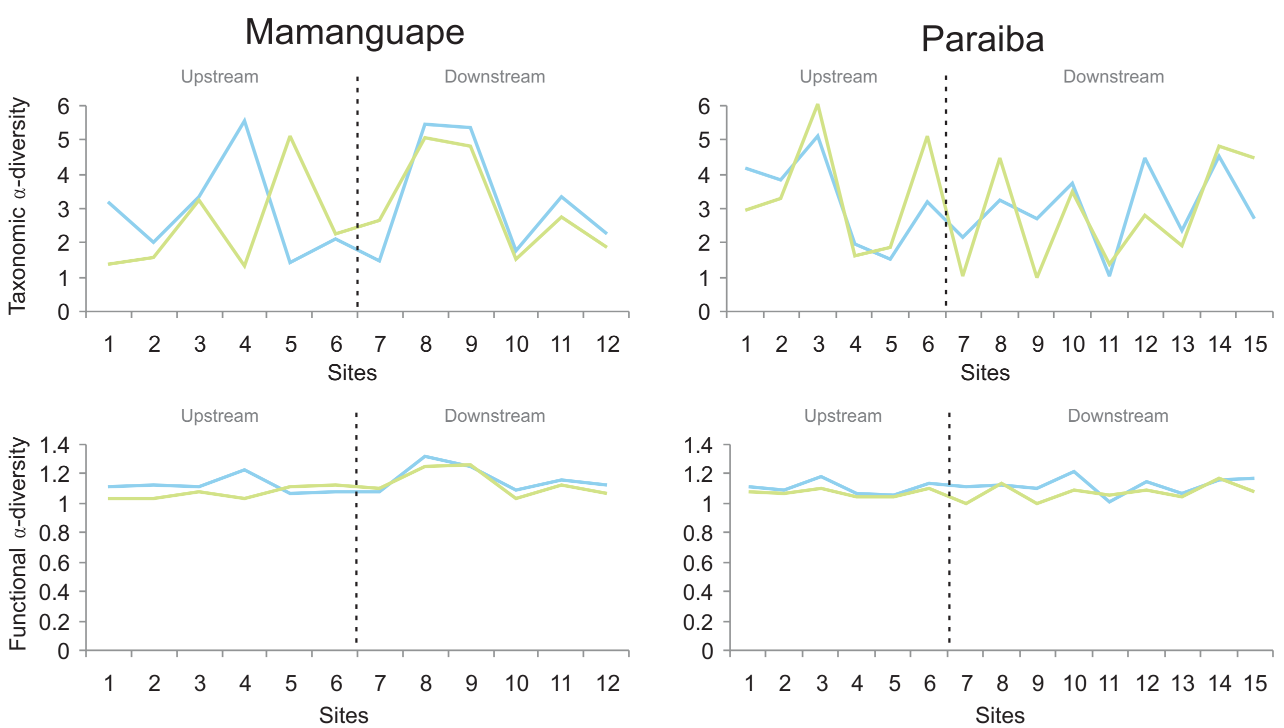

Fig. S2. Variation of the taxonomic α-diversity (*i.e.,* Simpson's D index) and the functional α-diversity (*i.e.,* Rao Quadratic Entropy index) along the estuarine gradient of each estuary, for the dry (green) and wet (blue) seasons.