Morphological attribute	Description of measured morphological	Preditor of	Ecological explanation
Standard Length (SL)	Measured from the snout tip to the base of the caudal fin	Habitat use/Locomotion	Attribute associated with manoeuvres and to escape predators in aquatic environments full of obstacles (Balon et al. 1986).
Body depth (BD)	Maximum vertical distance between the dorsal and ventral body edges	Habitat use/Locomotion	Enhances the ability to execute vertical and inverted turns in response to varying current velocities (Balon et al., 1986).
Body width (BW)	Maximum width of the body across both sides	Habitat use/Locomotion	Indicative of adaptation to hydrodynamic habitats, influencing vertical movement efficiency (Balon et al., 1986).
Head length (HL)	Distance from the snout tip to the posterior margin of the operculum, excluding its membrane	Trophic	Suggests capacity to capture larger prey, often characteristic of predatory species (Balon et al., 1986).
Head depth (HD)	Vertical distance from the head's ventral edge to its dorsal edge along the eye's height	Trophic	Correlates with the relative prey size; higher values typically represent piscivorous species (Balon et al., 1986).
Pectoral fin length (PFiL)	Length measured from the fin's base to the tip of its longest ray	Locomotion	Essential for braking, steering, and propulsion speed during swimming (Balon et al., 1986; Breda et al., 2005).
Dorsal fin length (DFiL)	Length from the dorsal fin's origin to the tip of its longest ray	Locomotion	Maintains stability, particularly during sharp turns, by reducing body rotations (Balon et al., 1986; Breda et al., 2005).
Caudal fin length (CFiL)	Distance from the posterior end of the hypural bones to the tip of the longest ray of the caudal fin	Locomotion	Critical for propulsion in both steady and burst swimming maneuvers (Balon et al., 1986; Breda et al., 2005).
Caudal peduncle depth (CPD)	Vertical depth of the caudal peduncle at its midpoint	Locomotion	Greater depth enhances strike thrust and stability in lateral movements (Sibbing & Nagelkerke, 2000; Winemiller et al., 1995).
Caudal peduncle width (CPW)	Maximum width of the caudal peduncle	Locomotion	Compressed peduncles indicate slow swimmers and poor maneuverability, which may affect performance in fast sprints as body height increases between different species (Balon et al. 1986; Breda et al. 2005)
Oral gape width (GW)	Maximum width of the mouth when fully open	Trophic	Reflects the maximum size of ingestible prey (Balon et al., 1986).

Supplementary Material 2. Description of morphometric variables and their ecological roles of Cichliforms in Mata de Itamacaoca, middle Munim River basin, Brazil.

Oral gape height (GH)	Maximum vertical opening of the mouth	Trophic	Indicates prey size and provides insights into hydrodynamic feeding morphology (Balon et al., 1986).
Eye diameter (ED)	Diameter of the eye orbit	Trophic	Affects prey detection; larger eyes are common in predatory species, with dorsal placement in benthic fish and lateral placement in pelagic species (Balon et al., 1986).
Postorbital length (POrL)	Distance from the posterior eye margin to the operculum's posterior end	Trophic/Habitat use	Associated with suction feeding and prey capture (Sibbing & Nagelkerke, 2000).
Gill raker length (GiRL)	Length of the longest lateral gill raker on the second branchial arch	Trophic/Habitat use	Linked to filter-feeding efficiency; shorter rakers reduce branchial resistance (Sibbing & Nagelkerke, 2000).
Gill inter-raker distance (GiRD)	Distance between the longest gill raker and its neighbor on the same arch	Trophic/Habitat use	Associated the species fishes that have been forced to shift their niche from zooplankton to benthic invertebrates by environmental changes (Sibbing & Nagelkerke 2000)