

**TABLE S3** | Assignment of functional traits to potamodromous species. The classification was based on Agostinho *et al.* (2008), Vitorino Jr. *et al.* (2016), Perônico *et al.* (2020), and Pereira *et al.* (2021). Length: maximum length (cm). Body: FSF = fusiform; LC = lateral compression; DVC = dorsoventral compression; RLC = lateral compression (rounded). Swimming: Caran = Carangiform. Migration: 3 = medium distance; 4 = long distance; 5 = continental.

Species	Length	Body	Swimming	Feeding	Fertilization	Embryo	Parental care	Migration	Habitat	Barbels	Caudal fin	Mouth	Mouth	Spike	Plates	Trophic level
<i>Ageneiosus inermis</i>	64.8	LC	CARAN	Carnivore	Internal	External	No	3	Pelagic	Yes	Emarginate	Suction	Terminal	Yes	No	4
<i>Ageneiosus lineatus</i>	12	LC	CARAN	Carnivore	Internal	External	No	3	Pelagic	No	Emarginate	Suction	Terminal	Yes	No	3.8
<i>Ageneiosus ucayalensis</i>	35.2	LC	CARAN	Carnivore	Internal	External	No	3	Pelagic	No	Emarginate	Suction	Terminal	Yes	No	3.7
<i>Ageneiosus vittatus</i>	22	LC	CARAN	Carnivore	Internal	External	No	3	Pelagic	No	Emarginate	Suction	Terminal	Yes	No	3.7
<i>Aguarunichthys tocantinsensis</i>	40	DVC	CARAN	Piscivore	External	External	No	4	Benthopelagic	Yes	Furcate	Suction	Inferior	Yes	No	4
<i>Anodus orinocensis</i>	35	FSF	CARAN	Planktivore	External	External	No	3	Benthopelagic	No	Furcate	Suction	Terminal	No	No	2.8
<i>Argonectes robertsi</i>	35	FSF	CARAN	Omnivore	External	External	No	3	Benthopelagic	No	Furcate	Suction	Inferior	No	No	2.8
<i>Brachyplatystoma filamentosum</i>	230	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.5
<i>Brachyplatystoma platynemum</i>	100	DVC	CARAN	Piscivore	External	External	No	5	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.5
<i>Brachyplatystoma rousseauxi</i>	200	DVC	CARAN	Piscivore	External	External	No	5	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.5
<i>Brachyplatystoma vaillantii</i>	100	DVC	CARAN	Piscivore	External	External	No	5	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.5
<i>Brycon falcatus</i>	40	LC	CARAN	Omnivore	External	External	No	4	Pelagic	No	Emarginate	Bite	Terminal	No	No	2.7
<i>Brycon gouldingi</i>	47	LC	CARAN	Omnivore	External	External	No	4	Pelagic	No	Emarginate	Bite	Terminal	No	No	3
<i>Brycon nattereri</i>	38	LC	CARAN	Omnivore	External	External	No	3	Pelagic	No	Emarginate	Bite	Terminal	No	No	2.7
<i>Colossoma macropomum</i>	100	RLC	CARAN	Omnivore	External	External	No	4	Pelagic	No	Furcate	Bite	Terminal	No	No	2
<i>Curimata acutirostris</i>	20	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2
<i>Curimata cyprinoides</i>	20	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2.4
<i>Curimata inornata</i>	25	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2
<i>Curimata ocellata</i>	22.5	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2
<i>Curimata vittata</i>	25	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2
<i>Curimatella alburnus</i>	18.8	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2.1
<i>Curimatella dorsalis</i>	20	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2.2
<i>Curimatella immaculata</i>	9.3	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2.3
<i>Curimatopsis macrolepis</i>	6	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scrapper	Subterminal	No	No	2
<i>Hemisorubim platyrhynchos</i>	60	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Terminal	Yes	No	4.5
<i>Hydrolycus armatus</i>	120	LC	CARAN	Piscivore	External	External	No	4	Pelagic	No	Emarginate	Bite	Supraterminal	No	No	4.5
<i>Hydrolycus tatauaia</i>	60	LC	CARAN	Piscivore	External	External	No	4	Pelagic	No	Emarginate	Bite	Supraterminal	No	No	4.3
<i>Hypophthalmus marginatus</i>	45	LC	CARAN	Planktivore	External	External	No	4	Pelagic	Yes	Furcate	Suction	Terminal	No	No	3.4
<i>Leporinus fasciatus</i>	37	FSF	CARAN	Omnivore	External	External	No	3	Benthopelagic	No	Furcate	Bite	Terminal	No	No	3
<i>Leporinus friderici</i>	40	FSF	CARAN	Omnivore	External	External	No	4	Benthopelagic	No	Furcate	Bite	Terminal	No	No	3.3
<i>Lithodoras dorsalis</i>	100	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	Yes	2
<i>Megaleporinus trifasciatus</i>	45	FSF	CARAN	Omnivore	External	External	No	4	Benthopelagic	No	Furcate	Bite	Terminal	No	No	2



TABLE S3 | (Continued)

Species	Length	Body	Swimming	Feeding	Fertiliza- tion	Embryo	Parental care	Migration	Habitat	Barbels	Caudal fin	Mouth	Mouth	Spike	Plates	Trophic level
<i>Megalodoras uranoscopus</i>	60	FSF	CARAN	Omnivore	External	External	No	4	Benthopelagic	Yes	Furcate	Suction	Terminal	Yes	Yes	2.7
<i>Myloplus rubripinnis</i>	35	RLC	CARAN	Omnivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	2
<i>Mylesinus paucisquamatus</i>	35	RLC	CARAN	Herbivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Mylosetiger</i>	27	RLC	CARAN	Omnivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Myloplus arnoldi</i>	25	RLC	CARAN	Omnivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Myloplus asteria</i>	25	RLC	CARAN	Herbivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Myloplus nigrolineatus</i>	23.8	RLC	CARAN	Herbivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Myloplus schomburgkii</i>	25	RLC	CARAN	Herbivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Myloplus torquatus</i>	25	RLC	CARAN	Herbivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	N/A
<i>Mylossoma duriventre</i>	25	RLC	CARAN	Omnivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	2.8
<i>Mylossoma unimaculatum</i>	25.6	RLC	CARAN	Herbivore	External	External	No	3	Benthopelagic	No	Emarginate	Bite	Terminal	No	No	2.6
<i>Oxydoras niger</i>	100	DVC	CARAN	Omnivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Inferior	Yes	Yes	2.8
<i>Pellona castelnaeana</i>	70	LC	CARAN	Piscivore	External	External	No	4	Pelagic	No	Furcate	Suction	Terminal	No	No	3.7
<i>Pellona flavipinnis</i>	65	LC	CARAN	Piscivore	External	External	No	4	Pelagic	No	Furcate	Suction	Terminal	No	No	4.5
<i>Phractocephalus hemioliopterus</i>	150	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Emarginate	Suction	Terminal	Yes	No	4.2
<i>Piaractus brachyponus</i>	70	RLC	CARAN	Omnivore	External	External	No	4	Pelagic	No	Furcate	Bite	Terminal	No	No	2.5
<i>Piaractus mesopotamicus</i>	40.5	RLC	CARAN	Omnivore	External	External	No	4	Pelagic	No	Furcate	Bite	Terminal	No	No	2
<i>Pimelodina flavipinnis</i>	40	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.2
<i>Pimelodus albofasciatus</i>	29.5	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.3
<i>Pimelodus blochii</i>	27	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.1
<i>Pimelodus luciae</i>	8.7	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.2
<i>Pimelodus ornatus</i>	35	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.3
<i>Pimelodus quadratus</i>	15.2	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.2
<i>Pimelodus speciosus</i>	15.2	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.2
<i>Pimelodus tetramerus</i>	17.2	DVC	CARAN	Omnivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	3.3
<i>Pirirampus pirirampu</i>	120	DVC	CARAN	Carnivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.5
<i>Platynematachthys notatus</i>	80	DVC	CARAN	Carnivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.3
<i>Platystomatichthys sturio</i>	40	DVC	CARAN	Piscivore	External	External	No	3	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	4
<i>Prochilodus nigricans</i>	45	LC	CARAN	Detritivore	External	External	No	4	Benthopelagic	No	Furcate	Scraper	Subterminal	No	No	2.4
<i>Psectrogaster amazonica</i>	20	LC	CARAN	Detritivore	External	External	No	3	Benthopelagic	No	Furcate	Scraper	Subterminal	No	No	2
<i>Pseudoplatystoma fasciatum</i>	110	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.4
<i>Pseudoplatystoma punctifer</i>		DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.3
<i>Pseudoplatystoma reticulatum</i>	130	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Subterminal	Yes	No	4.2
<i>Pterodoras granulosus</i>	70	DVC	CARAN	Omnivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Inferior	Yes	Yes	2.6
<i>Rhaphiodon vulpinus</i>	65	LC	CARAN	Piscivore	External	External	No	3	Pelagic	No	Emarginate	Bite	Supraterminal	No	No	4.5



TABLE S3 | (Continued)

Species	Length	Body	Swimming	Feeding	Fertilization	Embryo	Parental care	Migration	Habitat	Barbels	Caudal fin	Mouth	Mouth	Spike	Plates	Trophic level
<i>Salminus hilarii</i>	56	LC	CARAN	Piscivore	External	External	No	4	Pelagic	No	Emarginate	Bite	Terminal	No	No	2.7
<i>Semaprochilodus brama</i>	40	LC	CARAN	Detritivore	External	External	No	4	Benthopelagic	No	Furcate	Scraper	Subterminal	No	No	2.4
<i>Sorubim lima</i>	80	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	4.1
<i>Sorubimichthys planiceps</i>	150	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Inferior	Yes	No	4.5
<i>Tometes ancylorhynchus</i>	39.5	RLC	CARAN	Herbivore	External	External	No	4	Benthopelagic	No	Furcate	Bite	Terminal	No	No	N/A
<i>Tometes siderocarajensis</i>	35.2	RLC	CARAN	Herbivore	External	External	No	4	Benthopelagic	No	Furcate	Bite	Terminal	No	No	N/A
<i>Triportheus albus</i>	15.1	LC	CARAN	Omnivore	External	External	No	3	Pelagic	No	Emarginate	Bite	Terminal	No	No	3.4
<i>Triportheus auritus</i>	26.5	LC	CARAN	Omnivore	External	External	No	3	Pelagic	No	Emarginate	Bite	Terminal	No	No	2.8
<i>Triportheus trifurcatus</i>	22	LC	CARAN	Omnivore	External	External	No	3	Pelagic	No	Emarginate	Bite	Terminal	No	No	2.8
<i>Zungaro zungaro</i>	160	DVC	CARAN	Piscivore	External	External	No	4	Benthonic	Yes	Furcate	Suction	Terminal	Yes	No	4.5

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