



Checklist of the ichthyofauna of Mamirauá Sustainable Development Reserve, Middle Solimões, Amazonas, Brazil: high richness in a large protected area of Western-Central Amazonia

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Abstract: The present study reviews the records of occurrences of fish species found in the Mamirauá Sustainable Development Reserve (MSDR). The reserve is located in a large section of the middle Solimões River basin, in its interflow with Japurá River. For the elaboration of the list of fish species occurring in Mamirauá Reserve, we used a database of different studies on fish communities carried out in the area over the last three decades, in addition to the material deposited in the ichthyological collections of three scientific institutions, the National Institute for Amazon Research – INPA, the Mamirauá Sustainable Development Institute – IDSM and the Science and Technology Museum of the Catholic University of Rio Grande do Sul – PUCRS. The ichthyofauna of the MSDR is composed of 541 species, encompassing 45 families and 15 orders. These correspond to 20% of all valid species known for the entire Amazonia so far. As observed in other studies in the Neotropical Region, the more represented orders were Siluriformes (209 species) and Characiformes (185 species), followed by the Gymnotiformes (78 species). The results presented here demonstrate a considerable increase (86%) in the knowledge about the fish diversity found in Mamirauá Reserve, in relation to its first list of fish species, published in the 90's. This increase reflects not only the growth in number of studies on fish diversity in the area, with new surveys, but also the continuous taxonomic work on the collections, and descriptions of twenty-eight new species, with one hundred and ten type series. Further surveys are expected to take place in the Northwestern, more isolated areas of the Reserve, and will allow the identification of new occurrences, and may even unveil new fish species yet to be described to Science..

Keywords: Amazon; Checklist; Distribution; First record; Neotropical; Taxonomy.

Lista de verificação da ictiofauna da Reserva de Desenvolvimento Sustentável Mamirauá, Médio Solimões, Amazonas, Brasil: alto endemismo e riqueza em uma grande área protegida da Amazônia Centro-Ocidental

Resumo: Este estudo apresenta uma revisão dos registros de ocorrências das espécies de peixes encontradas na Reserva de Desenvolvimento Sustentável Mamirauá (RDSM), ampla área localizada na bacia do Médio Solimões, em seu interflúvio com o Rio Japurá. Para a elaboração da lista de peixes que ocorrem na Reserva Mamirauá foram utilizados os bancos de dados de diferentes estudos sobre comunidades de peixes realizados na área ao longo das últimas décadas, além de informações referentes ao material tombado nas coleções ictiológicas de três instituições científicas, o Instituto Nacional de Pesquisas da Amazônia- INPA, o Instituto de Desenvolvimento Sustentável Mamirauá – IDSM e o Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul – PUCRS. A ictiofauna da RDSM é composta por 541 espécies, incluindo 45 famílias e 15 ordens. Estes valores correspondem a cerca de 20% de todas espécies válidas conhecidas para toda a Amazônia até o momento. Assim como em outros estudos na região Neotropical as ordens que apresentaram as maiores riquezas

foram siluriformes (209 espécies) e Characiformes (185 espécies), seguidas de Gymnotiformes (78 espécies). Os resultados apresentados neste trabalho demonstram um aumento considerável (86%) no conhecimento sobre a diversidade de peixes encontrados na Reserva Mamirauá, em relação à primeira lista de peixes da RDSM, publicada na década de 1990. Este aumento reflete não apenas o crescimento no número de estudos sobre a diversidade de peixes na área, com a ocorrência de novos levantamentos, como também a intensificação dos trabalhos taxonômicos de classificação e descrição de vinte oito novas espécies com cento e dez séries tipos. Novos levantamentos deverão ocorrer nas áreas mais isoladas da Reserva, na sua porção noroeste. Estas atividades permitirão a identificação de novas ocorrências, e podem até revelar espécies novas a serem descritas..

Palavras-chave: *Amazônia; Lista de verificação; Distribuição; Primeiro registro; Neotropical; Taxonomia.*

Introduction

At the end of the XX century, an attempt to inventory the fish fauna of the Mamirauá Reserve was made, and produced a first list of 291 species (Crampton 1999). This first effort was limited by the lack of human and financial resources and did not encompass a representative portion of the reserve. Seemingly, the problems that led to a limited list of fish species for the Mamirauá area are the same observed for the entire Amazon basin. The current knowledge on the Amazonian fish diversity is far from adequate, and the estimates on the number of existing fish species varies greatly (Malabarba et al., 1998; Carvalho et al. 2009; Albert et al. 2011; van der Sleen & Albert 2017; Dagosta & De Pina, 2019; Oberdorff et al., 2019). But it is widely accepted that there are approximately 2700 already described fish species living in the Amazon basin (Dagosta & De Pina, 2019). Nevertheless, a strikingly high number of fish species are being described for the Amazon every year (Valsecchi et al., 2017). Unfortunately, a relevant portion of the currently known fish fauna, like in other important megadiverse freshwater ecosystems of the World, is now threatened (Darwall et al., 2016; Arthington et al. 2016; IBAMA, 2018). Although some of the areas of the Central Amazonia and its floodplains have been intensively surveyed during the last half century (Correa et al., 2008; Freitas et al., 2014; Siqueira-Souza et al., 2016), some areas remain virtually unknown, or very poorly known, demonstrating the importance of inventory studies in the region. There is very few information available about the fish diversity of the middle Solimões region, a vast and biologically important part of the Western Brazilian Amazonia.

For many centuries the floodplain areas of the Amazon, annually inundated by white sediment-rich waters, have been visited and studied. Most of the material collected in these expeditions was sent to foreign institutions, mainly in Europe (Filho, 2009). The majority of the large cities and small towns in the Amazon are located in the várzea ecosystem, and almost all the commercial fisheries in the Amazon is carried out in várzea water bodies. The Amazonian várzea is a particular type of wetland, a seasonal floodplain forest inundated by whitewater rivers, with an intricate mosaic of waterbodies and annually flooded shores (Junk et al., 2011; Junk et al., 2014). Probably this is why we have the existing information about its fish fauna (Santos et al., 1991; Goulding et al. 1996; Saint-Paul et al., 2000; Zuanon et al., 2008). Records are, however, focused on the large-bodied species, most of commercial value, and a very few information is available about occurrence and distribution of the fish fauna in most parts of the Amazonian várzea. This information is usually originated in species lists from very restricted areas, tend to be taxonomically unreliable and not supported by voucher specimens deposited in the main scientific fish collections. Despite these limitations, it is generally recognized that the ichthyofauna found in the Solimões-Amazonas várzea is placed among the more diverse of the Amazon, especially at the Western parts of the Central Brazilian Amazon, upstream from Manaus, the capital city of Amazonas State. This várzea ecosystem holds at least 647

fish species, including areas from the borders with Peru and Colombia, and the mouth, in the Atlantic coast (Zuanon et al., 2008).

Fish surveys and other similar studies in the Middle Solimões region were intensified in the early 1990's through an intense research program implemented to support the regulation of the management for the newly created Mamirauá Sustainable Development Reserve – RDSM. The RDSM was the first protected area of this category implemented in Brazil. One of the main characteristics of this type of protected area, is the participatory management of natural resources by the local populations, combined with the scientific research to support their activities (Queiroz 2005). In this way, a large inventory was made for the Mamirauá Reserve area and its adjacent rivers, generating a first list of fish species (Crampton 1999). The vast majority of the material collected at that time was deposited in large national collections such as INPA, and also the Science and Technology Museum of Pontifical Catholic University of Rio Grande do Sul (PUCRS). Part of this material collected at Mamirauá Reserve was used to build a small reference collection at Mamirauá Institute, located in the town of Tefé, Amazonas State.

Subsequently, with the consolidation of the Mamirauá Sustainable Development Institute (IDSM), several other inventories were carried out in the region, generating new lists of fish species for the RDSM, and representing a considerable increase in the knowledge about the richness of the fish fauna of that protected area. The previous reference collection was greatly improved with new deposits from this reserve and other protected areas, and also from different parts of the Western Brazilian Amazonia, which became the current IDSM ichthyological collection. However, this recently generated information on the RDSM was never compiled in a single checklist. Therefore, the goal of the present paper, is to provide an updated list of the fish fauna that occur in the Mamirauá Sustainable Development Reserve.

Material and Methods

1. Study area

The fish collections were all conducted during field expeditions to the Mamirauá Sustainable Development Reserve (RDSM), in the Brazilian Central Amazon floodplain (Figure 1). Mamirauá is a wetland site of international importance listed under the UN Ramsar Convention, and the largest protected area of flooded forests in Brazil. The whole reserve's area (1,124,000 ha) is formed exclusively by the lowland floodplains of the Solimões and Japurá rivers, a complex mosaic of flooded forests interspaced by different types of water bodies; lakes, “canos” (channels), rivers and “paraná” (river connections), each of them with particular physical and biological features, but connected at least once a year, since the entire reserve is completely flooded for 3 to 6 months annually (Henderson, 1999). The mosaic of forests (Wittmann et al. 2006) and water bodies, lakes and channels, at Mamirauá is typical of the várzea environment (Figure 2).

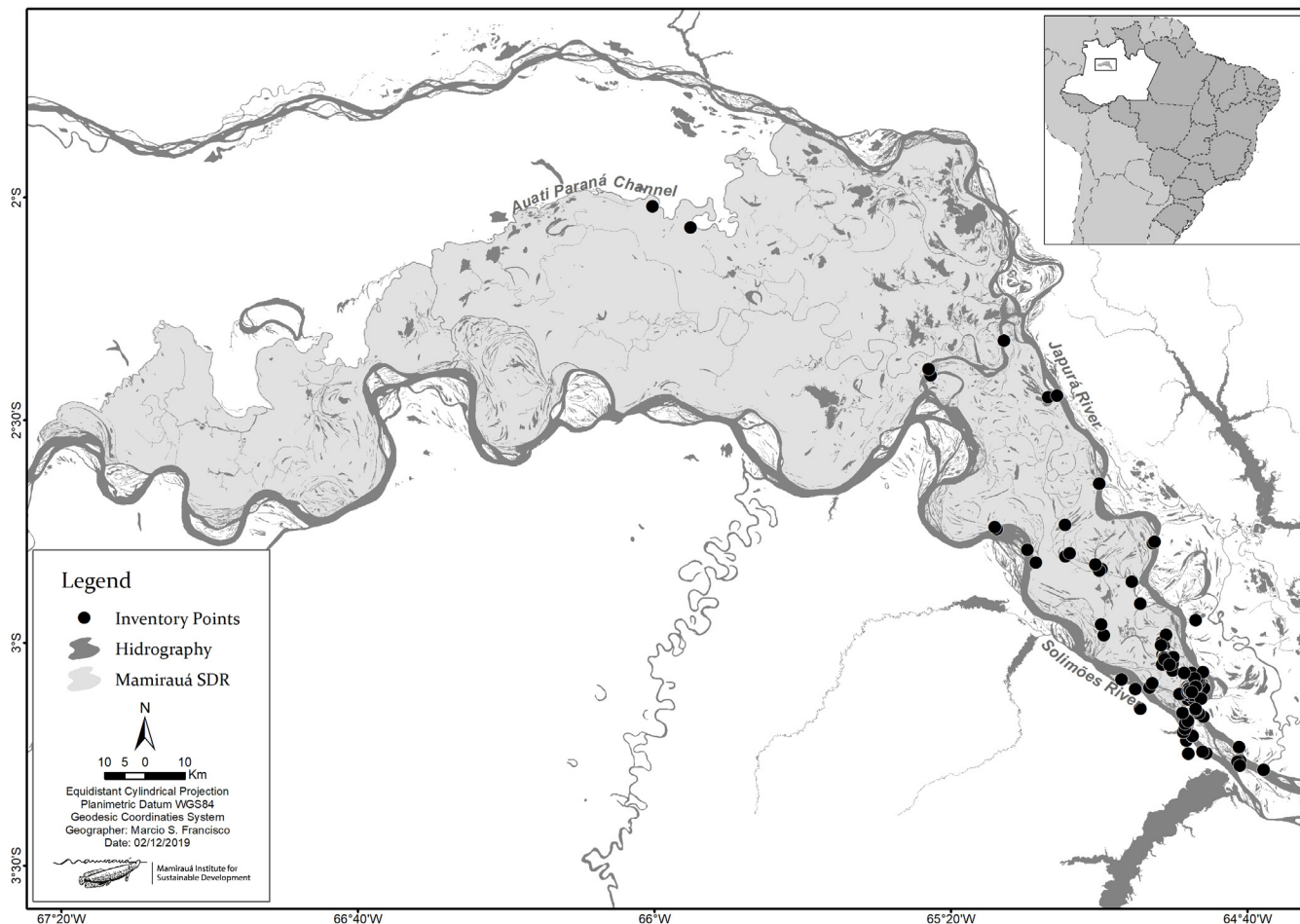


Figure 1. Map showing the Mamirauá Sustainable Development Reserve, Amazonas State, Brazil, with the geographical distribution of the points of distribution of fish sampling sites (black dots), and the main water bodies in the region (rivers, lakes and channels).

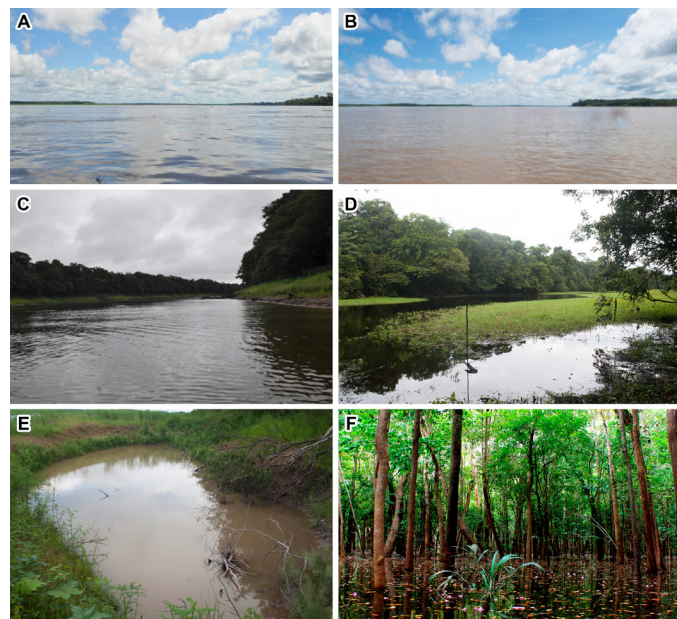


Figure 2. Examples of permanent and temporary aquatic environments sampled during the fish collections carried out at the Mamirauá Reserve: a) Japurá River; b) Solimões River; c) Mamirauá lake channel; d) Taracuzinho lake; e) Taxizal flood pool; f) Igapó (flooded forest) in Mamirauá system lake.

During a complete hydrological cycle, the water level in Mamirauá varies by more than 10 m (Ramalho et al. 2009), alternating wet and dry periods in a typical annual flood pulse (Junk et al., 1989). Four seasons can be identified, based on water level (Gaston & He, 2011). These are (i) high water season, from May until mid-July; (ii) falling water season, from mid-July to September; (iii) low water season, in the months of September, October and November; and (iv) rising water season, from December to April. These water bodies support a large fish fauna (Henderson & Crampton 1997), with diverse communities in each of the major aquatic habitats present (Henderson & Hamilton 1995).

The floodplain area in the confluence of Japurá and Solimões Rivers, where Mamirauá is located, is characterized by high atmospheric temperatures with average annual ranging from 28°C to 30°C, with maximum monthly ranging from 33°C to 35°C and minimum monthly ranging from 20°C to 22°C. The highest precipitations are concentrated between December and May (Ramalho et al., 2009) when it can reach 300 mm per month during the wettest years and the annual precipitation in the reserve is in average 3000 mm. The Japurá and Solimões Rivers consists of large white water rivers, carrying sediments from the erosion of the Andes, and forming large inundated habitats. Solimões River is one of the largest Amazonian rivers (discharge $53.3 \times 10^3 \text{ m}^3/\text{second}$) and the main channel of the Amazon Basin, until it gets the discharge of blackwaters from the Negro River and creates the mighty Amazon River. Japurá River, on the other hand,

although smaller (discharge $14,5 \times 10^3 \text{ m}^3/\text{second}$) is the Brazilian name for the Caquetá River, from Colombia. Successive erosion and deposition processes along the geological history of this floodplain created a complex mosaic of permanent and temporary waterbodies. The annual variation of water level responds for the various degrees of connectivity between those different waterbodies and the two main rivers. There are five main aquatic environments types in the Mamirauá Reserve relevant to the present work, since they were systematically surveyed over the years: the main rivers, lakes, canos and paranás, flooded forest and the temporary pools formed inside the forest, when the water level recedes. The paranás are channels connecting the main rivers, while the canos are channels that transport water from the rivers and from main channels to lower order aquatic environments within the floodplain, like smaller channels or lakes. Since canos are very shallow, some of them may dry completely during the low water periods. The lakes, on the other hand, may vary in shapes and sizes, and usually retain water during the entire hydrologic cycle. Therefore, lakes may retain a loose connection to the main channel during low water phase. During the high water period, all water bodies are connected and a direct communication is established among them all (Table 1).

2. Data collection

To prepare this checklist, a database was built with the information from different studies carried out mainly in the Southern, Eastern and Southeastern parts of the area (see black dots in Figure 1) over the last decades (Crampton, 1999; Chaves 2006; Santos 2007; Reis 2007). Whenever necessary, the collected material was revised in the fish collection of the IDSM. Additionally, we searched for all material collected at the RDSM in other important ichthyological collections in Brazil: Museum of Science and Technology (MCP) of the Pontifical Catholic University of Rio Grande do Sul, Museum of Zoology of the University of São Paulo (MZUSP), University of Campinas (ZUEC) and National Institute for Amazonian Research (INPA), available on SpeciesLink (www.specieslink.org.br). After the list was compiled, possible names and synonyms, and their occurrence, were confronted with information available in the Eschmeyer's Catalog of Fishes (Fricke et al. 2020). To avoid possible synonymies between species cataloged by the many studies in the area, we applied the precautionary principle and remove all risks of double entries.

Results

Until the present, the ichthyofauna of the Mamirauá Sustainable Development Reserve is composed of 541 species, including 45 families

and 15 orders (Table 2). These figures correspond to about 20% of all species valid for the Amazon (Dagosta and De Pinna 2019), and represent a 86% increase in relation to the first list produced for the RDSM, published in the end of the last century (Crampton, 1999). As detected in other studies and fish fauna surveys in Neotropical sites, the most represented orders were Siluriformes, with 209 species, and Characiformes, with 185 species (Beltrão and Soares 2018; Beltrão et al. 2019; Dagosta and De Pinna 2019). Together they represent more than 70% of the fish species richness at Mamirauá Reserve. Next in importance comes the Gymnotiformes, with 78 species. The gymnotids are remarkably diverse at the Mamirauá Reserve, where several new species have been described during the last two decades (Albert & Crampton 2001; Crampton et al. 2004; Crampton et al. 2005) (Figure 3f). At least, three new gymnotid species were recently discovered, two Apterodontids and one Hypopomids, and are under description. In the fourth place, the Cichliformes, with 40 species, is another species-rich order present. At Mamirauá we included in the checklist *Apistogrammoides pucallpaensis* Meinken, 1965, which had its first record for Brazil published recently (Oliveira et al. 2019) (Figure 3d).

The species richness at the family level also follows the general pattern found in the Neotropics. The five richest families are Characidae, with 61 species, Loricariidae with 55 species, Cichlidae with 37 species, Apterodontidae with 33 species and Auchenipteridae with 25 species. These numbers correspond to 39% of the total species richness at Mamirauá. Remarkably, family Characidae alone holds 11% of the total richness, demonstrating the diversity of this fish family at the protected area.

The richest aquatic environment present was the floodplain lakes (369 spp.), followed by the “canos” and paranás (301 spp.), and the rivers (261 spp.). In all aquatic environments Characiformes was the dominant order, followed by Siluriformes and Cichliformes. Such richness distribution among orders is expected for the Neotropical fish fauna, being reported from several prior studies (Queiroz et al., 2013; Sleen and Albert, 2018; Beltrão et al., 2019; Dagosta and De Pinna, 2019) (figure 4).

From the names included in the first fish species list published for Mamirauá Reserve (Crampton, 1999), we removed those identified only at the genus level, since they are not present in the material deposited in any known biological collection. They are *Saccoderma* sp.1, *Pimelodus* sp.1, *Pseudostegophilus* sp.1, *Hoplosternum* sp.1, *Plagioscion* sp.1 and “*Petalodoras* sp.1”. We also removed *Knodus*

Table 1. Physical and chemical parameters of water quality for the water bodies at Mamirauá Reserve based on Henderson (1999), Affonso et al. (2011 and 2015) and Pedro et al. (2013).

Parameters	Solimões River		Japurá River		Várzea Lakes		Várzea Canos and Paranás		Temp. Pools
	High Water	Low Water	High Water	Low Water	High Water	Low Water	High Water	Low Water	Low Water
Secchi (m)	1.2	0.6	1.35	0.56	1.7	0.43	1.7	0.40	0.30
pH	6.9	6.8	6.36	6.60	6.85	7.01	6.84	7.29	6.95
Eletr. Conduc. ($\mu\text{S}\cdot\text{cm}^{-1}$)	87.7	200.6	77.3	131.0	115.29	85.21	110.53	231.02	155.29
Turbidity (NTU)	57.74	62.21	23.82	28.75	6.33	43.19	6.97	51.93	-
Dis. Oxygen ($\text{mg}\cdot\text{l}^{-1}$)	0.6	0.2	0.77	0.34	2.59	5.12	2.3	6.12	0.18
Temperature ($^{\circ}\text{C}$)	27.1	31.3	27.8	30.9	27.27	31.52	26.62	31.32	28.14

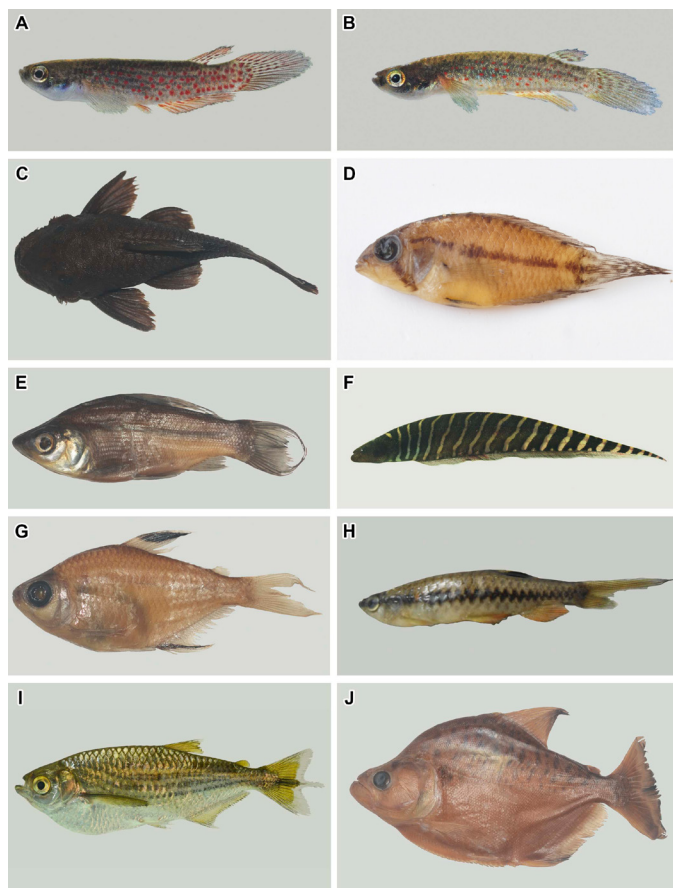


Figure 3. Representative individuals of some species collected at Mamirauá Reserve: a) *Anablepsoides* "mamiraua" sp.n. ♂; b) *Anablepsoides* "mamiraua" sp.n. ♀; c) *Ancistrus* cf. *hoplogenyis*; d) *Apistogrammoides pucallpaensis*; e) *Curimatopsis microlepis*; f) *Gymnotus mamiraua*; g) *Moenkhausia hemigrammoides*; h) *Pyrrhulina zigzag*; i) *Triportheus angulatus*; j) *Serrasalmus* sp. n.

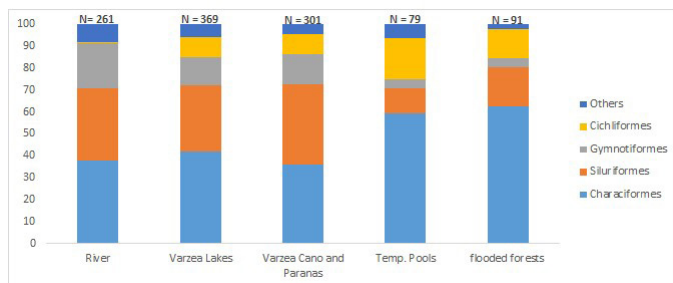


Figure 4. Ranking of richness by Orders and habitat of fish species found in the Mamirauá Sustainable Development Reserve (MSDR), N = Number of species.

sp.1 and *Tetragonopterus* sp.1, both included in a scientific report (M. Catarino, unpublished), informed as collected and identified only at the genus level. We found no correspondence with any material deposited in the collections consulted. Additionally, in the present version of the fish species list, we removed three names identified at the species level, mentioned in inventories and studies carried out at Mamirauá Reserve, but not deposited in any biological collection. They are *Microglanis carlae* Vera Alcaraz, da Graça & Shibatta, 2008, *Nannostomus harrisoni* (Eigenmann, 1909), *Crenicichla cametana* Steindachner, 1911 and *Lycengraulis grossidens* (Spix & Agassiz 1829). The decision to remove these four entries from the list was based on the consideration

that *Microglanis carlae* has its distribution restricted to the Paraguay River basin; *Nannostomus harrisoni* has its distribution restricted to the Demerara river basin in Guyana, and that *Crenicichla cametana*, occurs only in the Xingu and Tocantins-Araguaia river basins (Dagosta and De Pinna 2019). *Lycengraulis grossidens* is a marine/estuarine species, with not confirmed records for freshwater habitats, and freshwater specimens identified. Consequently, it is more likely that these were misidentifications made by those responsible for the reports of the inventories consulted.

The miniature Crenuchidae *Elachocharax pulcher* Myers, 1927 (sensu Weitzman and Vari 1988; Toledo-Piza et al. 2014), and the hemiodontid *Hemiodus atranalis* (Fowler, 1940) were added to this list because they were recently captured at the Mamirauá Reserve, and we also included in our list three more species that just had their first records for the Solimões river basin, *Curimatopsis microlepis*, *Moenkhausia hemigrammoides* Géry, 1965 and *Pyrrhulina zigzag* Zarske & Géry, 1997 (Figures 3e; 3g; 3h).

Serrasalmus cf. *spilopleura* and *Mesonauta insignis* have their geographic distribution falling far from the Mamirauá Reserve area, and their occurrence can be questioned (Dagosta and De Pinna 2019; Kullander and Silfvergrip, 1991). A careful review of the identification of these species should be conducted in the near future.

Fifty-seven taxa in the list were not identified at the species level, and thus have an uncertain identification at this level. They were included in the list because there are deposited material in scientific collections to voucher for their names. Forty of them were identified only at the genus level, such as *Potamotrygon* sp.1, *Microcharacidium* sp.1, *Microschemobrycon* sp.1 and *Ancistrus* sp.1 "mancha dorsal". Sixteen species were pre-determined with "cf.", such as *Metynnys* cf. *maculatus*, *Jupiaba* cf. *zonata* and *Ancistrus* cf. *hoplogenyis* (Figure 3f). Eight species are new and are now under the process of description, listed here as *Characidium* sp. n., *Serrasalmus* sp. n., *Paravandellia* sp. n., *Plectrochilus* sp. n., *Brachyhyopomus* sp. n., *Adontosternarchus* sp. n., *Sternarchella* sp. n. and *Anablepsoides* "mamiraua" sp. n. (Figures 3a; 3b; 3c).

Discussion

The fish fauna found at the Mamirauá Reserve is typical of the Amazonian várzea ecosystem. Like other parts of the várzea (Zuanon et al. 2008), the more represented or richest families detected at RDSM fish fauna were Characidae, Loricariidae and Cichlidae. Species found at várzea lakes at the vicinity of the Solimões river (Saint-Paul et al., 2000; Freitas et al., 2014; Siqueira-Souza et al., 2016) are very similar to those found at lakes in Mamirauá. Similarly, the species found in floating meadows mattresses at the Eastern Peruvian Amazon (Correa et al., 2008) are also similar to those found in the floating meadows at Mamirauá. However, in all those previous accounts, species richness was not as high as the one found at Mamirauá Reserve and its aquatic environments. The study area is located in a part of the várzea considered exceptionally species-rich, and holding a set of important endemic species (Zuanon et al., 2008).

By any account, the Amazon basin has a superlative number of fish species. Available estimates vary greatly, but most of them suggest a number that may reach 3,500 species (Malabarba et al., 1998; Junk et al. 2007; Carvalho et al. 2009; Albert et al. 2011; van der Sleen & Albert 2017;

Dagosta & De Pina, 2019). However, some other authors suggest a significant upward trend, and that this number may reach up to 5,000 species in the next 70 years, if we maintain the current rate of description of new species (Ota et al. 2015). These values suggest that the Amazon fish fauna may represent about 15% of all freshwater fish species described in the world at the present (Oberdorff et al. 2019). The Congo River basin, in Africa, is considered the second most diverse river basin in the world, with less than half the number of fish species registered for the Amazon River basin (Snoeks et al. 2011).

Species richness in a particular area is the result of several processes operating at multiple spatial and temporal scales (Peláez & Pavanelli 2018), comprising numerous evolutionary lineages, resulting from the interaction of geological factors associated with vicariant and dispersion agents (Lundberg, 1998; Dagosta and de Pinna 2017). The distribution of fish species in the Amazonian sub-basins and adjacent drainage systems is complex, and amounts to numerous distribution overlaps and superlative degrees of biogeographic congruence (Dagosta and De Pinna 2017). The diversity patterns of this mega-fauna and the processes that generate these patterns are still only partially known (Dagosta and De Pinna 2019). However, recent studies suggest that the richness pattern of the Amazonian ichthyofauna is supported mainly by three factors: area, climate and energy availability (Oberdorff et al. 2019). The pattern shown here for Mamirauá fish species diversity is consistent with the recent predictions, but the pattern of fish endemism at Mamirauá is much higher than expected (Oberdorff et al., 2019).

The total number of species listed for the Mamirauá Reserve is considerably higher than in other studies, with the species richness at Middle Solimões basin reaching figures higher than those from other Amazonian sub-basins, such as the Tapajós River basin (with 529 species), the Xingu River basin (with 502 species), even though the study area of the Middle-Solimões corresponds to a small proportion of those two sub-basins. In addition, its known species richness reaches about 63% to 85% of the total species registered for the main channel of the Amazon River, depending on the source adopted (Zuanon et al., 2008; Dagosta and De Pinna 2019). This high value we found is probably the result of two combined factors. The

first would be the high sampling effort applied during the last decades to the study area (Figure 5). The ichthyofauna of many Amazonian regions remain under-sampled, some of them are still nearly unknown to science, with no biological collection performed so far. Consequently, the differences in species richness found may simply reflect the difference in collection efforts (Queiroz et al. 2013). The two sub-basins under the greatest sampling effort are the same with the highest richness, the Negro River, with 1165 registered species (Beltrão et al. 2019), and the Madeira River, with 1062 species. Besides those two we have, of course, the main river channel, the Solimões-Amazonas, with 922 species recorded (Dagosta and De Pinna 2019).

The other explaining factor that may be responsible for the high species richness recorded would be the location of the Mamirauá Reserve and its environmental diversity. Located in the interflow of two great rivers, Solimões and Japurá, and in a large floodplain area, Mamirauá Reserve has a complex mosaic of bodies of water that are repeatedly connected and isolated, at least once a year. This type of ecosystem and the dynamics of its permanent or temporary aquatic environments provide several habitats and microhabitats that are distinct, and therefore can support a very high species richness (Figure 4). In this part of the Amazonian floodplains the water level rises annually around 11m (Ramalho et al., 2009), invading a mosaic of equally diverse array of forest types, and connecting and isolating all the local water bodies, sometimes for many consecutive months, probably with important implications for the richness of fish species in the area (Junk, et al. 1989; Arantes et al., 2017). In each part of the hydrological cycle, the aquatic environments present at the várzea can show a striking variation in water quality parameters (see Table 2). Besides that, Mamirauá Reserve lays at the confluence of the Japurá River, and the mouths of Tefé, Jutai and Juruá Rivers are also very close, just few kilometers away. This high proximity to many other river basins and their fish faunas, with distinct levels of dissimilarity among them, could be another source of diversity and species richness. The distribution of the fish species in the Amazon sub-basins and adjacent drainage systems is complex, and amounts to numerous distributional

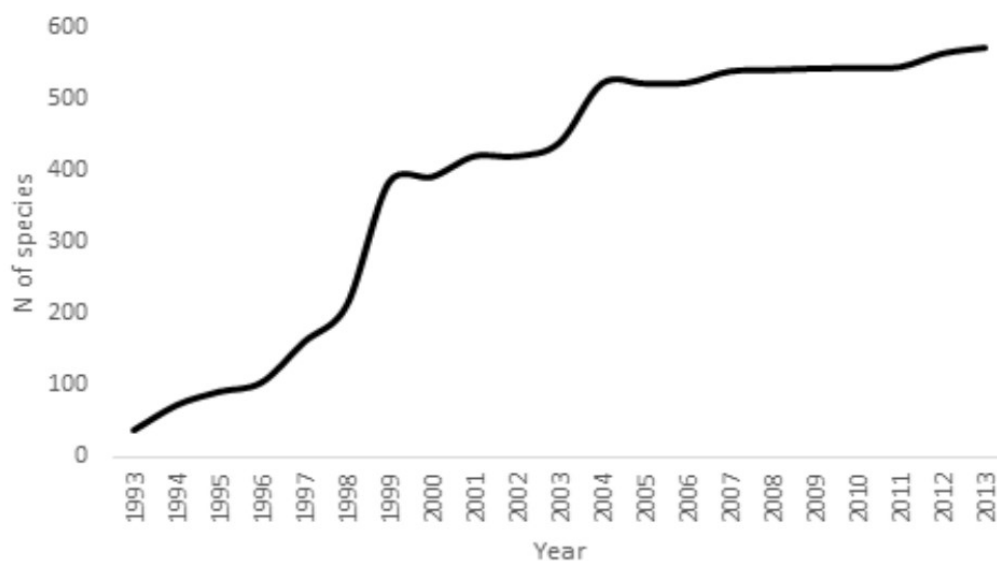


Figure 5. Species accumulation curve per year in the list of fish species recorded for Mamirauá Sustainable Development Reserve.

overlaps and superlative degrees of biogeographic congruence (Dagosta and de Pinna 2017). In the same way the high species richness of the Solimões River near Manaus can also be explained by its close proximity to the mouth of the Negro River (Zuanon et al., 2008).

None of the species recorded for the study area is listed as threatened of extinction, according with the International Union for Conservation of Nature (IUCN) and IBAMA (2018). Since the 2000's, several new species have been described for the area, almost all of them belonging to the Gymnotiformes, demonstrating a high species richness of this particular order at the Mamirauá Reserve, as in other várzea areas with habitats of similar diversity and structural complexity. This is probably due to the high number of taxonomic studies on this particular group of fish at Mamirauá (Albert & Crampton 2001; Crampton et al. 2004; Crampton et al. 2005; Correa et al. 2006; Albert and Crampton 2006; de Santana & Crampton 2007; de Santana & Crampton 2010; de Santana & Vari 2010; Lundberg et al. 2013; Sullivan et al. 2013; Carvalho & Albert 2015; Crampton et al. 2016; Evans et al. 2017).

It is expected that, as new undersampled areas are explored and surveyed, especially in the Northwestern part of Mamirauá Reserve, another significant increase in the fish species list will be achieved. As can be said for the whole Amazon, improvements in the sampling effort, together with continued taxonomic revision of the collected material, will result in the increase in the number of records, of new occurrences, and even in the description of new fish species for the study area. Recent studies on the Neotropical fish fauna have led to a significant improvement on the knowledge on fish diversity in the Amazon as never before (Sleen and Albert 2018; Dagosta and De Pinna 2019; Oberdorff et al. 2019), and we expect that this trend will be maintained or improved for the next decades.

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Author Contributions

Alexandre Pucci Hercos: elaboration of study's concept and design; data collection, analysis and preparation of manuscript.

Jonas Alves de Oliveira: elaboration of study's concept and design; data collection and analysis.

Jomara Cavalcante de Oliveira: elaboration of study's concept and design; data collection, analysis and preparation of manuscript.

Elizabeth Kathleen de Queiroz Rodrigues: elaboration of study's concept and design; data collection, analysis and preparation of manuscript.

Rita Louro Barbosa: data collection, analysis and preparation of manuscript.

Helder Lima de Queiroz: elaboration of study's concept and design; data collection, analysis and preparation of manuscript.

Table 2. List of fish species found at the Mamirauá Sustainable Development Reserve, during inventories, surveys and research on fish autoecology, biology and fish community ecology. * Paratype; **Holotype; ***Neotype. IDSM = Instituto de Desenvolvimento Sustentável Mamirauá; MCP = Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul; INPA = Instituto Nacional de Pesquisa da Amazônia; MZUSP = Museu de Zoologia da Universidade de São Paulo; ZUEC = Museu de Zoologia da Universidade Estadual de Campinas.

ESPÉCIE	FONTE
MYLIOBATIFORMES: Potamotrygonidae	
<i>Potamotrygon constellata</i> (Vaillant, 1880)	IDSM3017
<i>Potamotrygon henlei</i> (Castelnau, 1855)	MCP32907
<i>Potamotrygon hystrix</i> (Müller & Henle, 1839)	IDSM3018
<i>Potamotrygon motoro</i> (Müller & Henle, 1841)	IDSM3019
<i>Potamotrygon</i> sp.1	MCP32891
OSTEOGLOSSIFORMES: Osteoglossidae	
<i>Osteoglossum bicirrhosum</i> (Cuvier, 1829)	IDSM254; IDSM1106; INPA-ICT18698
OSTEOGLOSSIFORMES: Arapaimidae	
<i>Arapaima gigas</i> (Schinz, 1822)	IDSM3020
CLUPEIFORMES: Engraulidae	
<i>Anchoviella alleni</i> (Myers, 1940)	INPA-ICT18808; MCP29620; MCP29621
<i>Anchoviella guianensis</i> (Eigenmann, 1912)	IDSM1918
<i>Jurengraulis juruensis</i> (Boulenger, 1898)	IDSM23; INPA-ICT19407; INPA-ICT18782
<i>Lycengraulis batesii</i> (Günther, 1868)	IDSM24; IDSM41; MCP29902; MCP29903
<i>Lycengraulis</i> cf. <i>figueiredoi</i>	MCP30002
CLUPEIFORMES: Pristigasteridae	

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<i>Ilisha amazonica</i> (Miranda Ribeiro, 1920)	IDSM1099; INPA-ICT19280
<i>Pellona castelnaeana</i> (Valenciennes, 1847)	IDSM53
<i>Pellona flavipinnis</i> (Valenciennes, 1837)	IDSM25; IDSM1837; IDSM2289; INPA-ICT18828
<i>Pristigaster cayana</i> Cuvier, 1829	IDSM43; IDSM1091; IDSM1836; MCP29649; MCP29650
<i>Pristigaster whiteheadi</i> Menezes, de & Pinna, 2000	INPA-ICT18718
CHARACIFORMES: Crenuchidae	
<i>Characidium</i> aff. <i>Zebra</i>	IDSM1932
<i>Crenuchus spilurus</i> Günther, 1863	IDSM3021
<i>Characidium</i> sp. n.	IDSM3016
<i>Microcharacidium</i> sp.1	MCP29347; MCP29348; MCP29349; MCP29350; MCP29436; MCP29437; MCP29438; MCP29439
CHARACIFORMES: Erythrinidae	
<i>Erythrinus erythrinus</i> (Bloch & Schneider, 1801)	IDSM116; IDSM167; IDSM328; INPA-ICT19242; MCP29924; MCP29925; MCP29926; MCP29927
<i>Hoplerythrinus unitaeniatus</i> (Spix & Agassiz, 1829)	IDSM117; INPA-ICT19246
<i>Hoplias malabaricus</i> (Bloch, 1794)	IDSM196; IDSM214; IDSM238; IDSM285; IDSM1135; IDSM2653; MCP32755; MCP32756; MCP32757; MCP32759; MCP32760
CHARACIFORMES: Cynodontidae	
<i>Cynodon gibbus</i> Spix & Agassiz, 1829	IDSM397; IDSM1965; MCP29921
<i>Hydrolycus scomberoides</i> (Cuvier, 1819)	IDSM1104; IDSM1966; IDSM35; IDSM137
<i>Rhaphiodon vulpinus</i> Spix & Agassiz, 1829	MCP30586
CHARACIFORMES: Serrasalmidae	
<i>Colossoma macropomum</i> (Cuvier, 1818)	IDSM2996
<i>Metynnis altidorsalis</i> Ahl, 1923	IDSM1394; IDSM1395; IDSM1396; IDSM1397; IDSM1398; IDSM1399; IDSM1400; IDSM1401; IDSM1402; IDSM1403; IDSM1473
<i>Metynnis hypsauchen</i> (Müller & Troschel, 1844)	In the process of cataloging
<i>Metynnis luna</i> Cope, 1878	IDSM1467; IDSM1468; IDSM1470; IDSM1471; IDSM1472; IDSM1517; IDSM1727; IDSM1521; MCP31637
<i>Metynnis maculatus</i> (Kner, 1858)	IDSM1739
<i>Myloplus asterias</i> (Müller & Troschel, 1844)	IDSM1453; IDSM1454; IDSM1455; IDSM1456; IDSM1457; IDSM1459; IDSM1460; IDSM1461; IDSM1462; IDSM1463; IDSM1464; IDSM1465; IDSM1466; IDSM1516
<i>Myloplus rhomboidalis</i> (Cuvier, 1818)	In the process of cataloging
<i>Myloplus rubripinnis</i> (Müller & Troschel, 1844)	IDSM1732; IDSM1452; MCP31638
<i>Myloplus schomburgkii</i> (Jardine & Schomburgk, 1841)	In the process of cataloging
<i>Myloplus torquatus</i> (Kner, 1858)	IDSM1093
<i>Mylossoma aureum</i> (Spix & Agassiz, 1829)	IDSM233; IDSM1014; IDSM1518; IDSM1519; IDSM1689; IDSM1505; IDSM1514; IDSM1695; IDSM1696; IDSM1703; IDSM1704; IDSM1733; IDSM1737; IDSM1740; IDSM1741; IDSM1742; MCP31679; MCP31681
<i>Mylossoma albiscopum</i> (Cope 1872)	IDSM194; IDSM232; IDSM283; IDSM1035; IDSM1504; IDSM1506; IDSM1507; IDSM1508; IDSM1509; IDSM1510; IDSM1511; IDSM1513; IDSM1530; IDSM1645; IDSM1690; IDSM1692; IDSM1693; IDSM1694; IDSM1697; IDSM1698; IDSM1699; IDSM1700; IDSM1701; IDSM1702; IDSM1705; IDSM1706; IDSM1707; IDSM1708; IDSM1709; IDSM1710; IDSM1711; IDSM1712; IDSM1714; IDSM1715; IDSM1726; IDSM1728; IDSM1729; IDSM1730; IDSM1731; IDSM1734; IDSM1735; IDSM1736; IDSM1738; IDSM1743; MCP31654; MCP31656
<i>Piaractus brachypomus</i> (Cuvier, 1818)	IDSM205; IDSM1120; IDSM1691
<i>Pristobrycon calmoni</i> (Steindachner, 1908)	MCP29976; MCP29977; MCP29978; MCP29979; MCP29980; MCP29981; MCP29982; MCP29983
<i>Pristobrycon striolatus</i> (Steindachner, 1908)	IDSM1412; IDSM1421; IDSM1422; IDSM1423; IDSM1424; IDSM1425

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<i>Pristobrycon</i> sp.1	MCP33149
<i>Pygocentrus nattereri</i> Kner, 1858	IDSMS127; IDSMS234; IDSMS1114; IDSMS1426; IDSMS1427; IDSMS1428; IDSMS1429; IDSMS1430; IDSMS1431; IDSMS1432; IDSMS1433; IDSMS1434; IDSMS1435; IDSMS1436; IDSMS1437; IDSMS1438; IDSMS1439; IDSMS1440; IDSMS1441; IDSMS1442; IDSMS1443; IDSMS1444; IDSMS1445; IDSMS1446; IDSMS1448; IDSMS1449; IDSMS1450; IDSMS1451; IDSMS1520; IDSMS1522; IDSMS1523; IDSMS1524; IDSMS1526; IDSMS1527; IDSMS1528; MCP32747; MCP32748; MCP32749
<i>Serrasalmus</i> cf. <i>altipinis</i>	MCP33213; MCP33214;
<i>Serrasalmus eigenmanni</i> Norman, 1929	IDSMS1416; IDSMS1417; IDSMS1418; IDSMS1419; IDSMS1420; IDSMS163; IDSMS1414
<i>Serrasalmus elongatus</i> Kner, 1858	IDSMS136; IDSMS235; IDSMS1406; IDSMS1515; IDSMS2308; MCP31652; MCP32900; MCP32901; MCP32902; MCP32904
<i>Serrasalmus maculatus</i> Kner, 1858	IDSMS1407; IDSMS1408; IDSMS1411; IDSMS1883
<i>Serrasalmus medinae</i> Ramírez, 1965	IDSMS2302; IDSMS256; IDSMS1713
<i>Serrasalmus rhombeus</i> (Linnaeus, 1766)	IDSMS261; IDSMS333; IDSMS113; IDSMS1251; IDSMS1405; IDSMS1409; IDSMS1481; IDSMS1482; IDSMS1483; IDSMS1484; IDSMS1485; IDSMS1486; IDSMS1487; IDSMS1489; IDSMS1490; IDSMS1492; IDSMS1494; IDSMS1495; IDSMS1496; IDSMS1497; IDSMS1498; IDSMS1499; IDSMS1500; IDSMS1501; IDSMS1502; IDSMS1503; IDSMS1512; IDSMS1716; IDSMS1717; IDSMS2299; IDSMS2300; IDSMS2301; IDSMS2304; IDSMS2305; IDSMS2307; IDSMS2309; IDSMS2310; IDSMS1744; IDSMS255; MCP32905
<i>Serrasalmus serrulatus</i> (Valenciennes, 1850)	MCP33038
<i>Serrasalmus</i> sp. n.	IDSMS1474; IDSMS1475; IDSMS1476; IDSMS1477; IDSMS1478; IDSMS1479; IDSMS1480
<i>Serrasalmus</i> sp.1	MCP31677; MCP31678; MCP32753; MCP32754; MCP32894; MCP32895; MCP32897; MCP32909; MCP33198; MCP33200; MCP33201; MCP33202; MCP33203; MCP33205; MCP33206; MCP33207; MCP33209
<i>Serrasalmus</i> aff. <i>spilopleura</i> Kner, 1858	MCP33032
CHARACIFORMES: Hemiodontidae	
<i>Anodus elongatus</i> Agassiz, 1829	IDSMS2202; MCP30042
<i>Hemiodus gracilis</i> Günther, 1864	In the process of cataloging
<i>Hemiodus argenteus</i> Pellegrin, 1908	In the process of cataloging
<i>Hemiodus atranalis</i> (Fowler, 1940)	IDSMS3063
<i>Hemiodus immaculatus</i> Kner, 1858	MCP31710
<i>Hemiodus microlepis</i> Kner, 1858	IDSMS3064
<i>Hemiodus unimaculatus</i> (Bloch, 1794)	IDSMS3015
CHARACIFORMES: Anostomidae	
<i>Abramites hypselonotus</i> (Günther, 1868)	IDSMS1046; IDSMS1652; IDSMS1796; IDSMS1828
<i>Anostomoides atrianalis</i> Pellegrin, 1909	IDSMS3022
<i>Laemolyta proxima</i> (Garman, 1890)	INPA-ICT18852; INPA-ICT18853; IDSMS91
<i>Laemolyta taeniata</i> (Kner, 1859)	IDSMS1105; IDSMS1955; IDSMS1964; IDSMS1970
<i>Leporinus agassizi</i> Steindachner, 1876	IDSMS151; IDSMS334; IDSMS1033; INPA-ICT19293
<i>Leporinus</i> cf. <i>niceforoi</i>	IDSMS1971; IDSMS1973; INPA-ICT18805
<i>Leporinus fasciatus</i> (Bloch, 1794)	IDSMS1971; IDSMS1973; INPA-ICT18805
<i>Leporinus friderici</i> (Bloch, 1794)	IDSMS29; IDSMS152; IDSMS226; IDSMS1878; INPA-ICT19347; INPA-ICT19346; INPA-ICT19341; INPA-ICT19340; INPA-ICT19339; INPA-ICT19338; INPA-ICT19335; INPA-ICT19333; INPA-ICT19332; INPA-ICT19330; INPA-ICT19329; INPA-ICT19327; INPA-ICT19326; INPA-ICT19325; INPA-ICT19324; INPA-ICT19319; MCP31647 MCP32810; MCP32811; MCP32812; MCP32813; MCP32814; MCP32815

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<i>Leporinus jamesi</i> Garman, 1929	MCP33034; MCP33121
<i>Megaleporinus trifasciatus</i> Steindachner, 1876	IDSM149; IDSM153; IDSM1884; IDSM2103; INPA-ICT19351; INPA-ICT19350; INPA-ICT19349; INPA-ICT19348; MCP29754; MCP29755; MCP29756
<i>Pseudanos gracilis</i> (Kner, 1858)	IDSM2997
<i>Pseudanos trimaculatus</i> (Kner, 1858)	IDSM1084; INPA-ICT19309; INPA-ICT19308
<i>Rhytiodus argenteofuscus</i> Kner, 1858	IDSM259; IDSM1073; INPA-ICT19306; MCP32935
<i>Rhytiodus microlepis</i> Kner, 1858	IDSM125; IDSM154; IDSM165; IDSM1054; INPA-ICT19289; <i>INPA-ICT19288</i> ; <i>MCP29923</i>
<i>Schizodon fasciatus</i> Spix & Agassiz, 1829	IDSM1638; IDSM1972; IDSM155; IDSM198; IDSM1638; <i>INPA-ICT19546</i> ; <i>INPA-ICT18712</i> ; <i>MCP29992</i> ; <i>MCP29993</i> ; <i>MCP29994</i> ; <i>MCP29995</i>
CHARACIFORMES: Chilodontidae	
<i>Caenotropus labyrinthicus</i> (Kner, 1858)	IDSM30; MCP33026; MCP33027
<i>Caenotropus</i> sp.1	IDSM1143; IDSM2118
<i>Chilodus punctatus</i> Müller & Troschel, 1844	IDSM3065
CHARACIFORMES: Curimatidae	
<i>Curimata incompta</i> Vari, 1984	IDSM2204
<i>Curimata knerii</i> Steindachner, 1876	MCP30627
<i>Curimata vittata</i> (Kner, 1858)	IDSM105; IDSM1121
<i>Curimatella alburna</i> (Müller & Troschel, 1844)	IDSM146; IDSM330; IDSM1077; IDSM1891; IDSM1949; INPA-ICT19264
<i>Curimatella dorsalis</i> (Eigenmann & Eigenmann, 1889)	In the process of cataloging
<i>Curimatella meyeri</i> (Steindachner, 1882)	MCP29607; MCP30621
<i>Curimatopsis evelynae</i> Géry, 1964	IDSM1865
<i>Curimatopsis macrolepis</i> (Steindachner, 1876)	IDSM1079
<i>Curimatopsis microlepis</i> Eigenmann & Eigenmann, 1889	IDSM2998
<i>Cyphocharax abramoides</i> (Kner, 1859)	IDSM1859
<i>Cyphocharax festivus</i> Vari, 1992	IDSM103; IDSM108; INPA-ICT19262
<i>Cyphocharax plumbeus</i> (Eigenmann & Eigenmann, 1889)	MCP33043
<i>Cyphocharax gouldingi</i> Vari, 1992	IDSM2999
<i>Cyphocharax spiluropsis</i> (Eigenmann & Eigenmann, 1889)	MCP29543; MCP29545; IDSM3000
<i>Potamorhina altamazonica</i> (Cope, 1878)	IDSM27; IDSM1900; MCP29381
<i>Potamorhina latior</i> (Spix & Agassiz, 1829)	IDSM26; IDSM1103; IDSM1818; IDSM1899; MCP32936
<i>Psectrogaster amazonica</i> Eigenmann & Eigenmann, 1889	IDSM225; IDSM3001
<i>Psectrogaster essequibensis</i> (Günther, 1864)	IDSM1946
<i>Psectrogaster rutiloides</i> (Kner, 1858)	IDSM135; IDSM1806; IDSM1846; MCP29795; MCP29796
<i>Steindachnerina bimaculata</i> (Steindachner, 1876)	MCP33140
<i>Steindachnerina hypostoma</i> (Boulenger, 1887)	IDSM1851; IDSM1847; MCP29931
<i>Steindachnerina leucisca</i> (Günther, 1868)	IDSM28; IDSM1061; IDSM1947; IDSM1948; MCP33141 MCP33142; MCP33143; MCP33144
CHARACIFORMES: Prochilodontidae	
<i>Prochilodus nigricans</i> Spix & Agassiz, 1829	IDSM99; IDSM223; IDSM1137; IDSM1803; MCP29711; MZUSP27925.0
<i>Semaprochilodus insignis</i> (Jardine, 1841)	IDSM1804; IDSM1108; IDSM204
<i>Semaprochilodus taeniurus</i> (Valenciennes, 1821)	IDSM224
CHARACIFORMES: Lebiasinidae	
<i>Copeina guttata</i> (Steindachner, 1876)	IDSM3002
<i>Copella</i> gr. <i>nattereri</i>	IDSM3038
<i>Copella callolepis</i> (Regan, 1912)	IDSM1138; IDSM1906; IDSM2657

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<i>Nannostomus eques</i> Steindachner, 1876	IDSMS1908; IDSMS1957
<i>Nannostomus unifasciatus</i> Steindachner, 1876	IDSMS1907; IDSMS1956
<i>Nannostomus trifasciatus</i> Steindachner, 1876	In the process of cataloging
<i>Pyrrhulina australis</i> Eigenmann & Kennedy 1903	IDSMS2658
<i>Pyrrhulina brevis</i> Steindachner, 1876	IDSMS222
<i>Pyrrhulina filamentosa</i> Valenciennes, 1847	In the process of cataloging
<i>Pyrrhulina semifasciata</i> Steindachner, 1876	IDSMS183; IDSMS207; IDSMS1122; IDSMS1905; IDSMS2654
<i>Pyrrhulina vittata</i> Regan, 1912	IDSMS3003
<i>Pyrrhulina zigzag</i> Zarske & Géry, 1997	IDSMS2607; IDSMS2671; IDSMS2672; IDSMS2673
CHARACIFORMES: Ctenoluciidae	
<i>Boulengerella maculata</i> (Valenciennes, 1850)	IDSMS3066
<i>Boulengerella cuvieri</i> (Spix & Agassiz, 1829)	MCP32767
CHARACIFORMES: Chalceidae	
<i>Chalceus erythrus</i> (Cope, 1870)	IDSMS1083; IDSMS1653; IDSMS1890; INPA-ICT18619; INPA-ICT19286
CHARACIFORMES: Triportheidae	
<i>Agoniates anchovia</i> Eigenmann, 1914	IDSMS31; IDSMS1038; IDSMS1549; IDSMS1759; IDSMS1936; IDSMS2137; INPA-ICT19531; INPA-ICT19529; MCP29799; MCP29801; MCP29804
<i>Triportheus albus</i> Cope, 1872	IDSMS1102; IDSMS1931; MCP29940; MCP29941; MCP299942
<i>Triportheus angulatus</i> (Spix & Agassiz, 1829)	IDSMS1755; IDSMS1789; IDSMS1053; INPA-ICT19303; INPA-ICT18767; MCP29943***; MCP29944; MCP29945; MCP29947
<i>Triportheus auritus</i> (Valenciennes, 1864)	IDSMS1100; IDSMS1756
CHARACIFORMES: Gasteropelecidae	
<i>Carnegiella marthae</i> Myers, 1927	IDSMS2622; IDSMS2660; IDSMS1118; IDSMS1825
<i>Carnegiella strigata</i> (Günther, 1864)	IDSMS2627
<i>Gasteropelecus sternicla</i> (Linnaeus, 1758)	IDSMS237; IDSMS997; INPA-ICT18821
<i>Thoracocharax stellatus</i> (Kner, 1858)	IDSMS55; IDSMS1060; IDSMS1101; IDSMS1758; IDSMS1791; IDSMS1830; IDSMS1838; IDSMS1839; IDSMS1852; IDSMS1860; IDSMS1937; IDSMS2136; IDSMS2625; INPA-ICT18816; MCP29568; MCP29569
CHARACIFORMES: Bryconidae	
<i>Brycon amazonicus</i> (Spix & Agassiz, 1829)	INPA-ICT19118; INPA-ICT19108; INPA-ICT19107; MCP29758; IDSMS0111; IDSMS228; MZUSP27924.0
<i>Brycon falcatus</i> Müller & Troschel, 1844	IDSMS176
<i>Brycon melanopterus</i> (Cope, 1872)	In the process of cataloging
CHARACIFORMES: Iguanodectidae	
<i>Bryconops melanurus</i> (Bloch, 1794)	In the process of cataloging
<i>Iguanodectes geisleri</i> Géry, 1970	IDSMS1911; IDSMS2133
<i>Iguanodectes purusii</i> (Steindachner, 1908)	IDSMS3005
<i>Iguanodectes spilurus</i> (Günther, 1864)	IDSMS1126; MCP30630
<i>Piabucus dentatus</i> (Koelreuter, 1763)	IDSMS3006
CHARACIFORMES: Acestrorhynchidae	
<i>Acestrorhynchus abbreviatus</i> (Cope, 1878)	IDSMS1968; INPA-ICT19179; INPA-ICT19178; INPA-ICT19177; MCP29973
<i>Acestrorhynchus falcatus</i> (Bloch, 1794)	IDSMS213
<i>Acestrorhynchus falcirostris</i> (Cuvier, 1819)	IDSMS114; INPA-ICT18833; MCP29558; MCP29559
<i>Acestrorhynchus microlepis</i> (Schomburgk, 1841)	IDSMS115; MCP30588; MCP30590
<i>Acestrorhynchus nasutus</i> Eigenmann, 1912	IDSMS3007
<i>Gnathocharax steindachneri</i> Fowler, 1913	IDSMS3008
CHARACIFORMES: Characidae	
<i>Aphyocharax gr. dentatus</i>	IDSMS2290

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<i>Aphyocharax pusillus</i> Günther, 1868	IDSMS44; IDSMS45; IDSMS1037; IDSMS1130; IDSMS1667; IDSMS1787; IDSMS1809; IDSMS1933; MCP29551; MCP29552; MCP29553; MCP29580; MCP29581; MCP32769
<i>Astyanax</i> sp.1	IDSMS2188; IDSMS2212
<i>Astyanax bimaculatus</i> (Linnaeus, 1758)	IDSMS3024
<i>Boehlkea fredcochui</i> Géry, 1966	IDSMS1141
<i>Brachyhalcinus copei</i> (Steindachner, 1882)	IDSMS1930; IDSMS2162
<i>Charax condei</i> (Géry & Knöppel, 1976)	IDSMS3025
<i>Charax gibbosus</i> (Linnaeus, 1758)	INPA-ICT18779
<i>Charax tectifer</i> (Cope, 1870)	IDSMS1843
<i>Chrysobrycon</i> sp.1	IDSMS2159
<i>Ctenobrycon hauxwellianus</i> (Cope, 1870)	IDSMS2171
<i>Ctenobrycon spilurus</i> (Valenciennes, 1850)	IDSMS1136; IDSMS1525; IDSMS1566; IDSMS1781; IDSMS1896; IDSMS1951; IDSMS2624; INPA-ICT18793
<i>Galeocharax gulo</i> (Cope, 1870)	IDSMS1082; IDSMS1919; IDSMS2186
<i>Gymnocorymbus thayeri</i> Eigenmann, 1908	IDSMS1864; IDSMS2184; IDSMS2185; IDSMS2606; IDSMS2644
<i>Hemigrammus belottii</i> (Steindachner, 1882)	IDSMS3009
<i>Hemigrammus analis</i> Durbin, 1909	IDSMS1912
<i>Hemigrammus haraldi</i> Géry 1961	IDSMS193; IDSMS1945; IDSMS2111; IDSMS1858
<i>Hemigrammus hyanuary</i> Durbin, 1918	IDSMS3010
<i>Hemigrammus levis</i> Durbin, 1908	IDSMS1915
<i>Hemigrammus luelingi</i> Géry, 1964	IDSMS2656
<i>Hemigrammus ocellifer</i> (Steindachner, 1882)	IDSMS1617; IDSMS1139; IDSMS2626
<i>Hemigrammus rodwayi</i> Durbin, 1909	IDSMS1914
<i>Hemigrammus unilineatus</i> (Gill, 1858)	IDSMS1124; IDSMS1824; IDSMS1897; IDSMS2189; IDSMS2623; IDSMS2630
<i>Hemigrammus</i> aff. <i>worderwinkleri</i>	IDSMS3026
<i>Hyphessobrycon bentosi</i> Durbin, 1908	IDSMS3027
<i>Hyphessobrycon copelandi</i> Durbin, 1908	In the process of cataloging
<i>Jupiaba</i> cf. <i>zonata</i>	IDSMS150
<i>Microschemobrycon</i> sp.1	IDSMS039
<i>Moenkhausia ceros</i> Eigenmann, 1908	IDSMS2569
<i>Moenkhausia chrysargyrea</i> (Günther, 1864)	In the process of cataloging
<i>Moenkhausia collettii</i> (Steindachner, 1882)	IDSMS1823; IDSMS2655
<i>Moenkhausia collettii</i> "alta"	In the process of cataloging
<i>Moenkhausia comma</i> Eigenmann, 1908	In the process of cataloging
<i>Moenkhausia cotinho</i> Eigenmann, 1908	IDSMS1096
<i>Moenkhausia dichrourea</i> (Kner, 1858)	IDSMS229; IDSMS1095; IDSMS1913; IDSMS1765; IDSMS1888; IDSMS1895; IDSMS1954; IDSMS1969; IDSMS1974; INPA-ICT18703; INPA-ICT18702
<i>Moenkhausia gracilima</i> (Eigenmann, 1908)	IDSMS1921; IDSMS1938
<i>Moenkhausia grandisquamis</i> (Müller & Troschel, 1845)	In the process of cataloging
<i>Moenkhausia hemigrammoides</i> Géry, 1965	IDSMS1909
<i>Moenkhausia intermedia</i> Eigenmann, 1908	IDSMS85; IDSMS1782; IDSMS1040; IDSMS1885; INPA-ICT18701; INPA-ICT18700; INPA-ICT18699
<i>Moenkhausia lata</i> Eigenmann, 1908	IDSMS2567
<i>Moenkhausia lepidura</i> (Kner, 1858)	IDSMS1065; IDSMS1953; IDSMS2092
<i>Moenkhausia megalops</i> (Eigenmann, 1907)	In the process of cataloging
<i>Moenkhausia melogramma</i> Eigenmann, 1908	IDSMS1075; IDSMS1866; IDSMS1910; IDSMS2209; IDSMS2659
<i>Moenkhausia</i> cf. <i>naponis</i>	IDSMS1762; IDSMS1784; IDSMS1934; IDSMS2101

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<i>Moenkhausia oligolepis</i> (Günther, 1864)	IDSMS1123; INPA-ICT18721; INPA-ICT18723
<i>Odontostilbe fugitiva</i> Cope, 1870	IDSMS2573; IDSMS2574
<i>Paragoniates alburnus</i> Steindachner, 1876	MCP29612; MCP29850
<i>Phenacogaster pectinatus</i> (Cope, 1870)	IDSMS3028
<i>Phenacogaster</i> sp.1	In the process of cataloging
<i>Poptella compressa</i> (Günther, 1864)	IDSMS1134; IDSMS1532; IDSMS1780; IDSMS2196
<i>Prionobrama filigera</i> (Cope, 1870)	IDSMS1557
<i>Prodontocharax alleni</i> Böhlke, 1953	MCP29863; MCP31917
<i>Prodontocharax melanotus</i> Pearson, 1924	IDSMS54; IDSMS1760; IDSMS1792; IDSMS1795; IDSMS1810; IDSMS1849; IDSMS1854; IDSMS2571; IDSMS2572
<i>Protocheiroidon pi</i> (Vari, 1978)	IDSMS1808; IDSMS2591
<i>Roeboides affinis</i> (Günther, 1868)	IDSMS1564; IDSMS1935; IDSMS1920; IDSMS1840; IDSMS999; IDSMS1845; INPA- ICT19543; INPA-ICT19540; INPA-ICT19539; INPA-ICT19538; MCP29988
<i>Roeboides myersii</i> Gill, 1870	IDSMS76; IDSMS86; IDSMS230; IDSMS231; IDSMS260; IDSMS1036; IDSMS1805; INPA-ICT19521; INPA-ICT19520; INPA-ICT19519; INPA- ICT19518; INPA-ICT19517; INPA-ICT19516; INPA-ICT18736; MCP30577; MCP30578; MCP30580; MCP30581; MCP30582; MCP30583; MCP30584
<i>Serrapinnus</i> gr. <i>gracilis</i>	IDSMS998; IDSMS1898
<i>Stethaprion erythroptus</i> Cope, 1870	IDSMS2126; IDSMS2170; INPA-ICT19564; MCP29909; MCP29910
<i>Stichonodon insignis</i> (Steindachner, 1876)	IDSMS1080
<i>Tetragonopterus argenteus</i> Cuvier, 1816	IDSMS75; IDSMS282; IDSMS1783; IDSMS1802; IDSMS1844; IDSMS1967; IDSMS2105; INPA-ICT18693; INPA-ICT18692
<i>Tetragonopterus chalcus</i> Spix & Agassiz, 1829	INPA-ICT18707
GYMNOTIFORMES: Apterodontidae	
<i>Adontosternarchus balaenops</i> (Cope, 1878)	IDSMS2175; IDSMS2293; IDSMS1820; IDSMS211; IDSMS1003; INPA-ICT18272; INPA-ICT18271; INPA-ICT18270; INPA-ICT18269; INPA-ICT18268; INPA- ICT18266; INPA-ICT11520; MCP33386; MCP33387; MCP33390; MCP39314; MCP39315; MCP39316; MCP39317; MCP39318; MCP39319; MCP39320; MCP39321; MCP39322; MCP39323; MCP39324; MCP39325; MCP39326; MCP39327; MCP39328; MCP39329
<i>Adontosternarchus clarkae</i> Mago-Leccia, Lundberg & Baskin, 1985	IDSMS1004; IDSMS1801; IDSMS1799; IDSMS1829; IDSMS1877; IDSMS2076; IDSMS2639; IDSMS785; IDSMS289; IDSMS2096; INPA-ICT18230; INPA- ICT18229; INPA-ICT15809; INPA-ICT9971; MCP39330; MCP39331; MCP39332; MCP39333; MCP39334; MCP39335; MCP39336; MCP39337; MCP39338; MCP39339; MCP39340; MCP39341; MCP39342
<i>Adontosternarchus sachsi</i> (Peters, 1877)	IDSMS279; INPA-ICT18278; INPA-ICT15808; INPA-ICT11519; MCP39352; MCP39353; MCP39354; MCP39355
<i>Adontosternarchus nebulosus</i> Lundberg & Cox Fernandes 2007	INPA-ICT17311*
<i>Adontosternarchus</i> sp. n.	MCP39302*; MCP39303*; MCP39304**; MCP39305*; MCP39306*; MCP39307*; MCP39308*; MCP39309*; MCP39310; MCP39311; MCP39312; MCP39313
<i>Apterodontus albifrons</i> (Linnaeus, 1766)	IDSMS828; IDSMS1066; IDSMS1867; INPA-ICT18179
<i>Apterodontus apurensis</i> Fernández-Yépez, 1968	INPA-ICT18298; INPA-ICT18256; INPA-ICT18255; INPA-ICT18254; INPA- ICT18156; INPA-ICT15834; INPA-ICT15811; INPA-ICT15803
<i>Apterodontus bonapartii</i> (Castelnau, 1855)	IDSMS744; IDSMS745; IDSMS775; IDSMS776; IDSMS994; IDSMS1798; IDSMS1822; IDSMS1826; IDSMS1868; IDSMS1944; IDSMS2061; IDSMS2070; IDSMS2174; IDSMS2082; IDSMS2031; IDSMS2032; IDSMS2033; IDSMS2034; INPA-ICT09970
<i>Compsaraia compsa</i> (Mago-Leccia, 1994)	In the process of cataloging
<i>Compsaria samueli</i> Albert & Crampton, 2009	IDSMS276
<i>Pariosternarchus amazonensis</i> Albert & Crampton, 2006	MCP34916**; MCP34917*

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<i>Parapteronotus hasemani</i> (Ellis, 1913)	IDSM1001; IDSM59; IDSM637; IDSM746; IDSM754; IDSM758; IDSM2047; IDSM002056; IDSM002057; IDSM002095; IDSM002129; IDSM002147; IDSM002173; IDSM001869; INPA-ICT018315; INPA-ICT018314; INPA-ICT018313; INPA-ICT018312; INPA-ICT 018310; INPA-ICT018309; INPA-ICT018308; INPA-ICT018307; INPA-ICT018305; INPA-ICT018302; INPA-ICT018258; INPA-ICT018257; INPA-ICT015807; INPA-ICT9969; MCP33437; MCP33438; MCP33439; MCP33440; MCP33441; MCP33442
<i>Platyrosternarchus macrostomus</i> (Günther, 1870)	IDSM1986; IDSM2183; INPA-ICT15828; MCP41660
<i>Porotergus duende</i> de, Santana & Crampton, 2010	MCP37360*
<i>Porotergus gimbeli</i> Ellis, 1912	IDSM1006; INPA-ICT15804; MCP37523; MCP37524; MCP37525; MCP37526; MCP37527; MCP37529; MCP37530; MCP37531
<i>Porotergus gymnotus</i> Ellis, 1912	IDSM2291
<i>Sternarchella calhamazon</i> Lundberg, Cox Fernandes, Campos, da, Paz & Sullivan, 2013	MCP49414; MCP49415; MCP49416; MCP49417; MCP49418; MCP49419; MCP49420; MCP49421; MCP49422*
<i>Sternarchella duccis</i> (Lundberg, Cox Fernandes & Albert, 1996)	INPA-ICT15818
<i>Sternarchella raptor</i> (Lundberg, Cox Fernandes & Albert, 1996)	IDSM60; INPA-ICT15819; MCP33291; MCP33292
<i>Sternarchella rex</i> Evans, Crampton & Albert 2017	MCP49422**; MCP49423*
<i>Sternarchella schotti</i> (Steindachner, 1868)	IDSM2177; IDSM2634; IDSM1873; IDSM2132; IDSM295; IDSM1050; IDSM1797; IDSM2148; IDSM2298; IDSM1942; INPA-ICT18264; INPA-ICT18263; INPA-ICT 18262; INPA-ICT18261; INPA-ICT18260; INPA-ICT18191; INPA-ICT15801; INPA-ICT09979; MCP33371; MCP33372; MCP33373; MCP33389; MCP49424; MCP49425; MCP49426; MCP49427; MCP49428; MCP49429; MCP49430; MCP49431; ZUEC-PIS12339
<i>Sternarchella terminalis</i> (Eigenmann & Allen, 1942)	IDSM275; INPA-ICT18150; ZUEC-PIS12340; MCP33370; MCP49432; MCP49433; MCP49434; MCP49435; MCP49436
<i>Sternarchella</i> sp. n.	ZUEC-PIS12337*; ZUEC-PIS12338*
<i>Sternarchogiton nattereri</i> (Steindachner, 1868)	IDSM2176; IDSM2632; IDSM2146; IDSM2131; IDSM1800; IDSM1761; IDSM996; IDSM278; INPA-ICT18297; INPA-ICT18178; INPA-ICT18177; INPA-ICT15799; INPA-ICT11522; MCP38306
<i>Sternarchogiton porcinum</i> Eigenmann & Allen, 1942	MCP37532; MCP37533; MCP37534; MCP37535; MCP37536; MCP37537; MCP37539; MCP37540; MCP37541; MCP37542
<i>Sternarchogiton</i> sp.1	MCP33311; MCP37543
<i>Sternarchorhamphus muelleri</i> (Steindachner, 1881)	IDSM290; INPA-ICT18259; INPA-ICT15823; MCP33461; MCP33462; MCP33463; MCP33464; MCP33465; MCP33466; MCP41652; MCP41653; MCP41655; MCP41656; MCP41657; MCP41658
<i>Sternarchorhynchus cramptoni</i> de, Santana & Vari, 2010	MCP41637*; MCP41638*
<i>Sternarchorhynchus curvirostris</i> (Boulenger, 1887)	IDSM2130
<i>Sternarchorhynchus mormyrus</i> (Steindachner, 1868)	MCP33285; MCP41640; MCP41641; MCP41642
<i>Sternarchorhynchus oxyrhynchus</i> (Müller & Troschel, 1849)	IDSM1879; INPA-ICT18274; INPA-ICT18194; MCP33382; MCP33383; MCP33384; MCP33391
<i>Sternarchorhynchus</i> sp.1	MCP41639; MCP41643; MCP41645; MCP41646; MCP41647; MCP41648; MCP41649; MCP41650; MCP41651
<i>Tenebrosternarchus preto</i> (de Santana & Crampton, 2007)	INPA-ICT15806*; INPA-ICT18164*; MCP37548*; MCP37549*; MCP37550*; MCP37554*; MCP37555*; MCP37556*; MCP37557*

GYMNOTIFORMES: Sternopygidae

<i>Distocyclus conirostris</i> (Eigenmann & Allen, 1942)	IDSM1876; IDSM2190; IDSM2150; IDSM2172; IDSM995; INPA-ICT18301; INPA-ICT18300; INPA-ICT18299; INPA-ICT18031; INPA-ICT15812; INPA-ICT11517; MCP33286; MCP33287; MCP33288; MCP33289; MCP33290
<i>Eigenmannia limbata</i> (Schreiner & Miranda Ribeiro, 1903)	IDSM98; IDSM128; IDSM732; IDSM778; IDSM779; IDSM1111; IDSM2051; IDSM2052; IDSM2097; INPA-ICT18684; INPA-ICT18683; INPA-ICT18681; INPA-ICT18288; INPA-ICT18287; INPA-ICT18286; INPA-ICT18285; INPA-ICT18282; INPA-ICT18281; INPA-ICT18202; INPA-ICT9976
<i>Eigenmannia macrops</i> (Boulenger, 1897)	IDSM96; IDSM1052; IDSM1870; IDSM2090; IDSM2098; IDSM2179; IDSM288
<i>Eigenmannia</i> gr. <i>trilineata</i> López & Castello, 1966	INPA-ICT15795

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<i>Eigenmannia virescens</i> (Valenciennes, 1842)	IDSMS404; IDSMS407; IDSMS780; IDSMS781; IDSMS786; IDSMS787; IDSMS859; IDSMS860; IDSMS861; IDSMS1005; IDSMS1874; IDSMS1848; IDSMS2060; INPA-ICT35171; MCP33293; MCP33294; MCP33295; MCP33296; MCP33297
<i>Eigenmannia</i> sp.1	MCP47752
<i>Rhabdolichops caviceps</i> (Fernández-Yépez, 1968)	IDSMS274; INPA-ICT15791; INPA-ICT9981; MCP35999; MCP36000; MCP36001; MCP36002; MCP36004; MCP36005; MCP36006; MCP36007; MCP36008; MCP36010; MCP36011; MCP36022
<i>Rhabdolichops eastwardi</i> Lundberg & Mago-Leccia, 1986	IDSMS2180; IDSMS273; INPA-ICT18220; INPA-ICT18218; INPA-ICT18217; INPA-ICT18212; INPA-ICT018211; INPA-ICT011518; MCP36012; MCP36013; MCP36014; MCP36015; MCP36018; MCP36019; MCP36020; MCP36023; MCP36024; MCP36025
<i>Rhabdolichops electrogrammus</i> Lundberg & Mago-Leccia, 1986	MCP36027; MCP36028; MCP36029
<i>Rhabdolichops lundbergi</i> Correa, Crampton & Albert, 2006	IDSMS1010; INPA-ICT18226; INPA-ICT18222; INPA-ICT25254*; MCP36031*; MCP36032*; MCP36033*; MCP36034*; MCP36035*; MCP36036*; MCP36037**; MCP36038*; MCP36039*; MCP36040*; MCP36042*; MCP36043*; MCP36044*; MCP36051
<i>Rhabdolichops navalha</i> Correa, Crampton & Albert, 2006	IDSMS2094; IDSMS2149; IDSMS2182; IDSMS1116; IDSMS1872; IDSMS1816
<i>Rhabdolichops nigrimans</i> Correa, Crampton & Albert, 2006	IDSMS294; IDSMS1007; IDSMS1850; IDSMS1871; IDSMS1943; INPA-ICT18371; INPA-ICT18370; INPA-ICT18369; INPA-ICT18239; INPA-ICT18225; INPA-ICT18224; INPA-ICT18223; INPA-ICT18221; INPA-ICT15794
<i>Rhabdolichops troscheli</i> (Kaup, 1856)	INPA-ICT18162; INPA-ICT9973; MCP36055; MCP36057; MCP36058
<i>Sternopygus branco</i> Crampton, Hulén & Albert, 2004	INPA-ICT18166; INPA-ICT15786*; MCP32241*; MCP32242*; MCP32243*; MCP32244*; MCP32245*; MCP32246*; MCP32451**
<i>Sternopygus macrurus</i> (Bloch & Schneider, 1801)	IDSMS728; IDSMS755; IDSMS757; IDSMS769; IDSMS771; IDSMS181; IDSMS849; IDSMS1011; IDSMS1763; IDSMS1976; IDSMS2035; IDSMS2036; IDSMS2037; IDSMS2038; IDSMS2039; IDSMS2040; IDSMS2041; IDSMS2042; IDSMS2043; IDSMS2044; IDSMS2045; IDSMS2053; IDSMS2054; IDSMS2055; IDSMS2109; IDSMS2128; INPA-ICT18316; INPA-ICT18190; INPA-ICT15802; INPA-ICT9974; MCP032247; MCP32248; MCP32250; MCP32251; MCP32252; MCP32258; MCP33374; MCP33375

GYMNOTIFORMES: Gymnotidae

<i>Electrophorus varii</i> de Santana, Wosiacki, Crampton, Sabaj, Dillman, Mendes-Júnior & Castro e Castro, 2019	IDSMS143; IDSMS2667; IDSMS2670; INPA-ICT57626; INPA-ICT15820
<i>Gymnotus arapaima</i> Albert & Crampton, 2001	IDSMS142; IDSMS800; IDSMS765; IDSMS773; IDSMS804; IDSMS805; IDSMS806; IDSMS808; IDSMS2046; IDSMS2048; IDSMS2049; IDSMS2050; INPA-ICT18391; INPA-ICT18390; INPA-ICT18389; INPA-ICT15833*; INPA-ICT14532*; INPA-ICT9963*; MCP33298; MCP33365; MCP33434; MCP33435; MCP33436; MCP49987*; MZUSP75166.0 MZUSP75167.0; MZUSP75179.0
<i>Gymnotus carapo</i> Linnaeus, 1758	IDSMS1788; IDSMS734; IDSMS801; IDSMS1008; IDSMS1978; IDSMS809
<i>Gymnotus jonasi</i> Albert & Crampton, 2001	IDSMS122; IDSMS217; IDSMS802; IDSMS810; IDSMS811; INPA-ICT18318; INPA-ICT11513; INPA-ICT15830*; MCP33331; MCP33332; MCP33334; MCP33335; MCP33336; MCP33337; MCP33338; MCP033339; MCP33340; MCP33341; MCP33342; MCP33343; MCP33366; MCP46931
<i>Gymnotus mamiraua</i> Albert & Crampton, 2001	IDSMS191; IDSMS218; IDSMS219; IDSMS733; IDSMS764; IDSMS766; IDSMS767; IDSMS772; IDSMS803; IDSMS807; IDSMS812; IDSMS869; IDSMS870; IDSMS871; IDSMS872; IDSMS873; IDSMS874; IDSMS1009; IDSMS1861; IDSMS1982; IDSMS2114; IDSMS2651; IDSMS2665; IDSMS2666; INPA-ICT18421; INPA-ICT18420; INPA-ICT18419; INPA-ICT18418; INPA-ICT18417; INPA-ICT18416; INPA-ICT18415; INPA-ICT18414; INPA-ICT18413; INPA-ICT18412; INPA-ICT18411; INPA-ICT18410; INPA-ICT18409; INPA-ICT18408; INPA-ICT18407; INPA-ICT18406; INPA-ICT18405; INPA-ICT18404; INPA-ICT18403; INPA-ICT18402; INPA-ICT18401; INPA-ICT18400; INPA-ICT18399; INPA-ICT18398; INPA-ICT18397; INPA-ICT18396; INPA-ICT18395; INPA-ICT18394; INPA-ICT18393; INPA-ICT18392; INPA-ICT27577; INPA-ICT18159; INPA-ICT14537; INPA-ICT13504; INPA-ICT15832*; INPA-ICT9962*; INPA-ICT13503**; MCP29805; MCP33282; MCP33283; MCP33284; MCP33348; MCP33349; MCP33350; MCP33351; MCP33352; MCP33353; MCP33354

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<i>Gymnotus melanopleura</i> Albert & Crampton, 2001	INPA-ICT9966*
<i>Gymnotus obscurus</i> Crampton, Thorsen & Albert, 2005	IDSM2636; MZUSP60604.0; MZUSP60605.0; MZUSP60606.0
<i>Gymnotus onca</i> Albert & Crampton, 2001	INPA-ICT11512** IDSM000797; IDSM798; IDSM281; INPA-ICT18424*; INPA-ICT18423*; INPA-ICT018422*; MZUSP60601.0; MZUSP60602.0; MZUSP60603.0; MZUSP75158.0*; MZUSP75159.0*; MZUSP75160.0*; MZUSP75161.0*; MZUSP75162.0*; MZUSP75163.0*; MZUSP75164.0*
<i>Gymnotus varzea</i> Crampton, Thorsen & Albert, 2005	
GYMNOTIFORMES: Hypopomidae	
<i>Brachyhypopomus batesi</i> Crampton, de, Santana, Waddell & Lovejoy, 2016	IDSM2065
<i>Brachyhypopomus beebei</i> (Schultz, 1944)	IDSM120; IDSM739; IDSM814; IDSM816; IDSM863; IDSM864; IDSM2074; IDSM2083; IDSM2091; INPA-ICT18341; INPA-ICT18338; INPA-ICT18337; INPA-ICT18336; INPA-ICT18335; INPA-ICT9943; MCP45313; MCP45342; MCP45343; MCP45344; MCP45358; MCP45361; MCP45380; MCP45381; MCP45382; MCP45383; MCP45385; MCP45387; MCP45420; MCP45421; MCP45422; MCP45424; MCP45427; MCP45428; MCP45450
<i>Brachyhypopomus belindae</i> Crampton, de, Santana, Waddell & Lovejoy, 2016	MCP45267*; MCP45430*; MCP45431*; MCP47867*; MCP45360** IDSM174; IDSM220; IDSM729; IDSM730; IDSM736; IDSM741; IDSM742; IDSM748; IDSM749; IDSM1987; IDSM1988; IDSM1989; IDSM1990; IDSM1991; IDSM1992; IDSM1993; IDSM1994; IDSM1995; IDSM1996; IDSM1997; IDSM1998; IDSM1999; IDSM2000; IDSM2001; IDSM2002; IDSM2003; IDSM2004; IDSM2005; IDSM2006; IDSM2007; IDSM2008; IDSM2009; IDSM2010; IDSM2011; IDSM2012; IDSM2013; IDSM2014; IDSM2015; IDSM2016; IDSM2017; IDSM2018; IDSM2019; IDSM820; IDSM821; IDSM788; IDSM789; IDSM830; IDSM825; IDSM827; IDSM2025; IDSM2026; IDSM2027; IDSM2028; IDSM2029; IDSM2030; IDSM2064; IDSM2022; IDSM2089; IDSM836; IDSM837; IDSM840; IDSM866; IDSM867; IDSM868; IDSM843; IDSM1128; IDSM1766; IDSM2069; IDSM2072; IDSM2073; IDSM1863; IDSM2077; MCP33278; MCP33280; MCP33281; MCP45251; MCP45252; MCP45253; MCP45254; MCP45255; MCP45256; MCP45257; MCP45315; MCP45316; MCP45330; MCP45345; MCP45346; MCP45347; MCP45348; MCP45359; MCP45384; MCP45388; MCP45389; MCP45390; MCP45391; MCP45392; MCP45394; MCP45399; MCP45400; MCP45401; MCP45429; MCP45451; MCP45465; MCP46934; MCP47021; MZUSP75152.0*; MZUSP75153.0*; MZUSP75154.0*; MZUSP75155.0*; MZUSP75156.0*; MZUSP75157.0*
<i>Brachyhypopomus bennetti</i> Sullivan, Zuanon, Cox & Fernandes, 2013	IDSM121; IDSM774; IDSM743; IDSM822; IDSM835; IDSM845; IDSM1110; IDSM1132; IDSM1928; IDSM1767; IDSM2600; IDSM1984; IDSM1886; IDSM2211; IDSM2108; INPA-ICT18252; INPA-ICT18251; INPA-ICT18250; INPA-ICT18249; INPA-ICT18248; INPA-ICT18247; INPA-ICT18343; INPA- ICT18342; MCP33367; MCP44758; MCP45259; MCP45260; MCP45261; MCP45262; MCP45317; MCP45318; MCP45319; MCP45323; MCP45326; MCP45331; MCP45362; MCP45363; MCP45386; MCP45395; MCP45396; MCP45402; MCP45403; MCP45404; MCP46927; MCP46930; MCP46935; IDSM123; IDSM124; IDSM126; IDSM203; IDSM815; IDSM824; IDSM838; IDSM2020; IDSM2021; IDSM2062; IDSM2161; IDSM2079; IDSM2080; IDSM2084; IDSM2085; IDSM2646; MCP45264; MCP45265*; MCP45266*; MCP45329; MCP45349*; MCP45350*; MCP45364; MCP45365; MCP45367*; MCP45368; MCP45405*; MCP45406*; MCP45425*; MCP45453
<i>Brachyhypopomus brevirostris</i> (Steindachner, 1868)	
<i>Brachyhypopomus flavipomus</i> Crampton, de, Santana, Waddell & Lovejoy, 2016	IDSM844
<i>Brachyhypopomus hendersoni</i> Crampton, de, Santana, Waddell & Lovejoy, 2016	MCP45268; MCP45269*; MCP45482**
<i>Brachyhypopomus hamiltoni</i> Crampton, de, Santana, Waddell & Lovejoy, 2016	IDSM731; IDSM737; IDSM738; IDSM792; IDSM175; IDSM215; IDSM248; IDSM464; IDSM817; IDSM826; IDSM829; IDSM832; IDSM839; IDSM853; IDSM2063; IDSM1129; IDSM1977; MCP45275; MCP45276; MCP45277; MCP45278; MCP45279; MCP45280; MCP45281; MCP45328; MCP45351; MCP45370; MCP45398; MCP45409; MCP45410; MCP45433; MCP45435; MCP45436; MCP45437; MCP45438; MCP45455; MCP46928

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<i>Brachyhypopomus walteri</i> Sullivan, Zuanon, Cox & Fernandes, 2013	IDSM221; IDSM833; IDSM834; IDSM1927; IDSM1881; IDSM1768; IDSM1140; IDSM2023; IDSM2024; IDSM2087; MCP33368; MCP33369; MCP44607; MCP44649*; MCP44742; MCP45290; MCP45291; MCP45292; MCP45293; MCP45295*; MCP45320*; MCP45321; MCP45327; MCP45412*; MCP45413; MCP45441; MCP45443; MCP45444*; MCP45445; MCP45458*; MCP45487; MCP45488*; MCP45490; MCP46933
<i>Brachyhypopomus regani</i> Crampton, de, Santana, Waddell & Lovejoy, 2016	IDSM740; IDSM2075; IDSM2288; IDSM2597; IDSM2598; IDSM2601; IDSM2618; IDSM2192; IDSM2156; IDSM858; IDSM865; MCP45282; MCP45283; MCP45284; MCP45285; MCP45286; MCP45333*; MCP45334*; MCP45335*; MCP45411*; MCP45439*; MCP45446*; MCP45456; MCP45473; MCP45484*; MCP47022**
<i>Brachyhypopomus</i> sp. n.	MCP33279; MCP44744*; MCP44760; MCP45324*; MCP45459; MCP46021
GYMNOTIFORMES: Rhamphichthyidae	
<i>Hypopygus lepturus</i> Hoedeman, 1962	IDSM855
<i>Steatogenys elegans</i> (Steindachner, 1880)	IDSM761; IDSM253; IDSM793; IDSM993; IDSM1757; IDSM1794; IDSM1827; IDSM1880; IDSM2099; IDSM2115; INPA-ICT18231; INPA-ICT18171; INPA-ICT18169; INPA-ICT18168; INPA-ICT18167; INPA-ICT9957; MCP31923; MCP31929; MCP31930; MCP31931; MCP31936; MCP31937; MCP31938; MCP31939; MCP31941; MCP31942; MCP31943; MCP31944; MCP31945; MCP31948
<i>Gymnorhamphichthys rondoni</i> (Miranda Ribeiro, 1920)	In the process of cataloging
<i>Gymnorhamphichthys hypostomus</i> Ellis, 1912	IDSM3031
<i>Rhamphichthys heleios</i> Carvalho & Albert, 2015	INPA-ICT18332*; INPA-ICT18323*
<i>Rhamphichthys lineatus</i> Castelnau, 1855	INPA-ICT18276; MCP33456; MCP33457; MCP44757
<i>Rhamphichthys marmoratus</i> Castelnau, 1855	IDSM542; IDSM735; IDSM750; IDSM794; IDSM1980; IDSM1985; IDSM2100; IDSM2178; MCP33380; MCP33381; MCP33450; MCP33452; MCP33454; MCP33455; MCP44604; MCP46929; MCP46932
<i>Rhamphichthys rostratus</i> (Linnaeus, 1766)	IDSM1807; MCP33444; MCP33446
<i>Rhamphichthys</i> sp.1	MCP33378; MCP47019
SILURIFORMES: Trichomycteridae	
<i>Apomatoceros</i> sp.1	MCP33162; MCP33163; MCP33164; MCP33165
<i>Homodiaetus</i> sp.1	MCP29342
<i>Henonemus punctatus</i> (Boulenger, 1887)	IDSM2138; IDSM2152; IDSM2181
<i>Megalocentor echthrus</i> de Pinna & Britski, 1991	IDSM2198; MCP29548; MCP30637; MCP30646;
<i>Paravandellia</i> sp. n.	MCP29562*
<i>Pareiodon microps</i> Kner, 1855	MCP29949; MCP29950
<i>Plectrochilus machadoi</i> Miranda Ribeiro, 1917	IDSM2153
<i>Plectrochilus wieneri</i> (Pellegrin, 1909)	IDSM2635
<i>Plectrochilus</i> sp. n.	MCP29560*; MCP31629
<i>Pseudostegophilus nemurus</i> (Günther, 1869)	IDSM132; IDSM2151; MCP30010; MCP30013; MCP30015
<i>Potamoglanis hasemani</i> (Eigenmann, 1914)	In the process of cataloging
<i>Stegophilus septentrionalis</i> Myers, 1927	MCP29554; MCP29557
<i>Tridensimilis</i> sp.1	In the process of cataloging
<i>Vandellia cirrhosa</i> Valenciennes, 1846	MCP30643
<i>Vandellia sanguinea</i> Eigenmann, 1917	MCP30633
<i>Vandellia</i> sp.1	MCP29343; MCP29344; MCP29561
SILURIFORMES: Callichthyidae	
<i>Callichthys callichthys</i> (Linnaeus, 1758)	IDSM168; IDSM2652; IDSM2640; IDSM2112; MCP33116; MCP33117; MCP33118; MCP33119
<i>Corydoras acutus</i> Cope, 1872	In the process of cataloging
<i>Corydoras ambiacus</i> Cope, 1872	In the process of cataloging

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<i>Corydoras elegans</i> Steindachner, 1876	IDSM2603; IDSM2604; IDSM2123
<i>Corydoras latus</i> Pearson, 1924	IDSM2617
<i>Corydoras leopardus</i> Myers, 1933	IDSM1777
<i>Corydoras multiradiatus</i> (Orcés V., 1960)	In the process of cataloging
<i>Corydoras pygmaeus</i> Knaack, 1966	IDSM2605; IDSM2631
<i>Corydoras splendens</i> (Castelnau, 1855)	In the process of cataloging
<i>Corydoras</i> gr. <i>zygatus</i>	In the process of cataloging
<i>Dianema longibarbis</i> Cope, 1872	IDSM145; IDSM1979; IDSM2168; IDSM2650
<i>Hoplosternum littorale</i> (Hancock, 1828)	IDSM147; IDSM286; IDSM1983; MCP29443; MCP29444; MCP29445; MCP29446; MCP29447; MCP29448; MCP29449; MCP29450; MCP29450; MCP29451; MCP29452; MCP29453; MCP29454; MCP29455; MCP29456; MCP29457
<i>Leptoplosternum altamazonicum</i> Reis, 1997	MCP29317; MCP29319; MCP29320; MCP29321; MCP29322; MCP29323; MCP29324; MCP29325; MCP29326; MCP29327; MCP29328; MCP34561; MCP34562
<i>Leptoplosternum pectorale</i> (Boulenger, 1895)	IDSM177; IDSM247; IDSM2674; IDSM2677; IDSM2678
<i>Leptoplosternum ucumara</i> Reis & Kaefer, 2005	MCP29316; MCP29318; MCP29329; MCP29582
<i>Megalechis picta</i> (Müller & Troschel, 1849)	IDSM185; IDSM1; IDSM1131; IDSM2110; IDSM2167
<i>Megalechis thoracata</i> (Valenciennes, 1840)	IDSM2675; IDSM2676; MCP32940; MCP32941; MCP32943; MCP32944; MCP32945; MCP32946
SILURIFORMES: Loricariidae	
<i>Acanthicus hystrix</i> Spix & Agassiz 1829	IDSM2122
<i>Ancistrus dolichopterus</i> Kner, 1854	IDSM1030; IDSM1158; IDSM1745; IDSM1751; IDSM1752
<i>Ancistrus hoplogenyis</i> (Günther, 1864)	MCP29784; IDSM1227
<i>Ancistrus</i> sp.1 "mancha dorsal"	IDSM1170; IDSM1226; IDSM1244; IDSM1383; IDSM1384; IDSM1386; IDSM1167; IDSM1031; IDSM1159; IDSM1191; IDSM1197
<i>Ancistrus</i> sp.2 "robusto"	IDSM1245
<i>Ancistrus</i> sp.3	MCP29730; MCP29736
<i>Aphanotorulus emarginatus</i> (Valenciennes, 1840)	IDSM1023; IDSM1169; IDSM1229; IDSM1192; IDSM1318; IDSM1684; INPA-ICT19490; INPA-ICT19489; MCP30623; MCP30627; MCP33268; MCP33269; MCP33270; MCP33272; MCP33273
<i>Aphanotorulus</i> cf. <i>emarginatus</i>	IDSM1317; IDSM1247; IDSM1180
<i>Dekeyseria amazonica</i> Rapp Py-Daniel, 1985	IDSM1076; IDSM1258; IDSM1259; IDSM1260; IDSM1261; IDSM1262; IDSM1263; IDSM1264; IDSM1265; IDSM1266; IDSM1267; IDSM1268; IDSM1269; IDSM1270; IDSM1271; INPA-ICT19496; INPA-ICT19495; INPA- ICT19494; MCP29765
<i>Dekeyseria scaphirhyncha</i> (Kner, 1854)	INPA-ICT37654
<i>Farlowella amazonum</i> (Günther, 1864)	MCP29738
<i>Farlowella</i> gr. <i>gracilis</i>	IDSM1117
<i>Farlowella henriquei</i> MirandaRibeiro, 1918	MCP29769
<i>Farlowella nattereri</i> Steindachner, 1910	IDSM1153; IDSM1165; MCP29714; MCP29713; MCP29714; MCP29715; MCP29716; MCP29718
<i>Farlowella oxyrryncha</i> (Kner, 1853)	IDSM1026
<i>Farlowella rugosa</i> Boeseman, 1971	IDSM1629
<i>Hemiodontichthys acipenserinus</i> (Kner, 1853)	IDSM1670; IDSM1068; MCP29790; MCP29791; MCP29792; MCP29793; MCP29794
<i>Hypoptopoma bianale</i> Aquino & Schaefer, 2010	MCP29584; MCP29591; MCP33115
<i>Hypoptopoma brevirostratum</i> Aquino & Schaefer, 2010	MCP29592

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<i>Hypoptopoma</i> gr. <i>gulare</i> Cope, 1878	IDSM1027; IDSM1045; IDSM1160; IDSM1194; IDSM1195; IDSM1199; IDSM1202; IDSM1272; IDSM1273; IDSM1274; IDSM1275; IDSM1276; IDSM1277; IDSM1278; IDSM1279; IDSM1280; IDSM1281; IDSM1282; IDSM1283; IDSM1284; IDSM1285; IDSM1286; IDSM1287; IDSM1288; IDSM1289; IDSM1290; IDSM1291; IDSM1292; IDSM1293; IDSM1294; IDSM1295; IDSM1296; IDSM1297; IDSM1298; IDSM1299; IDSM1301; IDSM1302; IDSM1303; IDSM1304; IDSM1305; IDSM1724; IDSM1725; IDSM2680; IDSM2681; IDSM1234; INPA-ICT19065; INPA-ICT19064; INPA-ICT19062; MCP33106; MCP33107; MCP33108; MCP33109; MCP33112; MCP33113; MCP33114
<i>Hypoptopoma psilogaster</i> Fowler, 1915	IDSM1775
<i>Hypoptopoma thoracatum</i> Günther, 1868	IDSM1204; IDSM1043; IDSM1155; IDSM1171; IDSM1237
<i>Hypostomus</i> aff. <i>plecostomus</i>	IDSM402; IDSM1224; IDSM1243; IDSM2140
<i>Hypostomus carinatus</i> (Steindachner, 1881)	IDSM482; IDSM1161; IDSM1168; IDSM1230; IDSM1238; IDSM1310
<i>Hypostomus</i> cf. <i>hoplonites</i>	IDSM118
<i>Hypostomus</i> gr. <i>pyrineusi</i>	IDSM1018; IDSM1142
<i>Limatulichthys griseus</i> (Eigenmann, 1909)	INPA-ICT19090; INPA-ICT19089; IDSM1150
<i>Limatulichthys</i> sp.1	MCP29814; MCP29818
<i>Loricaria cataphracta</i> Linnaeus, 1758	INPA-ICT19087; INPA-ICT19086; INPA-ICT19085
<i>Loricaria simillima</i> Regan, 1904	IDSM1357; IDSM1658
<i>Loricaria</i> sp.1	MCP30613; MCP31668; MCP31669; MCP31670; MCP31672; MCP31673; MCP31674
<i>Loricariichthys acutus</i> (Valenciennes, 1840)	IDSM240; IDSM138; INPA-ICT18926; MCP29706; MCP29709
<i>Loricariichthys maculatus</i> (Bloch, 1794)	IDSM139; IDSM1074; IDSM1313; IDSM1355; IDSM1356; IDSM1358; IDSM1366; IDSM1369
<i>Loricariichthys nudirostris</i> (Kner, 1853)	IDSM1314; IDSM140; MCP29779; MCP29780; MCP29781
<i>Loricariichthys stuebelii</i> (Steindachner, 1882)	INPA-ICT18967; INPA-ICT18966
<i>Loricariichthys</i> sp.1	IDSM1315
<i>Otocinclus vestitus</i> Cope, 1872	IDSM1776
<i>Oxyropsis carinata</i> (Steindachner, 1879)	IDSM1149; IDSM1175; IDSM1183; IDSM1184; IDSM1185; IDSM1186; IDSM1188; IDSM1190; IDSM1196; IDSM1198; IDSM1200; IDSM1201; IDSM1203; IDSM1206; IDSM1209; IDSM1210; IDSM1211; IDSM1212; IDSM1300; IDSM1306; IDSM1307; IDSM1308; IDSM1309; IDSM1235; MCP29577
<i>Oxyropsis wrightiana</i> Eigenmann & Eigenmann, 1889	MCP29615; MCP30639
<i>Peckoltia brevis</i> (La Monte, 1935)	IDSM1024; IDSM1189; IDSM1225; IDSM1232; IDSM1236; IDSM2620
<i>Peckoltichthys bachi</i> (Boulenger, 1898)	IDSM1025; IDSM2594; IDSM2621; IDSM1205; MCP33228
<i>Pseudorinelepis genibarbis</i> (Valenciennes, 1840)	IDSM1371; IDSM1320; IDSM1321; IDSM1322; MCP29674; MCP29675; MCP29789; MCP30624
<i>Pterosturisoma microps</i> (Eigenmann & Allen, 1942)	MCP33231
<i>Pterygoplichthys gibbiceps</i> (Kner, 1854)	IDSM1223; IDSM1241; IDSM1319; IDSM1718; IDSM2682; IDSM1679 IDSM303; IDSM1375; IDSM1239; IDSM1240; IDSM1242; IDSM87; IDSM1022; IDSM1172; IDSM1179; IDSM239; IDSM1176; IDSM1207; IDSM1193; IDSM1219; IDSM1220; IDSM1221; IDSM1222; IDSM1228; IDSM1231; IDSM1252; IDSM1253; IDSM1254; IDSM1255; IDSM1256; IDSM1257; IDSM1380; IDSM1311; IDSM1312; IDSM1316; IDSM1719; IDSM1720; IDSM1721; IDSM1722; IDSM1723; INPA-ICT18862; MCP31698; MCP31699; MCP31700; MCP31701; MCP31702
<i>Pterygoplichthys pardalis</i> (Castelnaud, 1855)	IDSM1029; IDSM1187; IDSM1337; IDSM1338; IDSM1328; IDSM1344; IDSM1345; IDSM1349; IDSM1350; IDSM1351; IDSM2207; IDSM1364; IDSM1561
<i>Rinelocaria</i> cf. <i>fallax</i>	IDSM717; INPA-ICT18674; INPA-ICT18673; MCP29749; MCP29823; MCP29822; MCP33249; MCP33250; MCP33251
<i>Rineloricaria castroi</i> Isbrücker & Nijssen, 1984	

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<i>Rineloricaria formosa</i> Isbrücker & Njissen, 1979	IDSM262; IDSM264; IDSM1144; IDSM1325; IDSM1327; IDSM1330; IDSM1331; IDSM1332; IDSM1334; IDSM1335; IDSM1336; IDSM1340; IDSM1341; IDSM1359; IDSM1360; IDSM2642; IDSM1778
<i>Rineloricaria</i> cf. <i>formosa</i>	In the process of cataloging
<i>Rineloricaria hasemani</i> Isbrücker & Njissen, 1979	In the process of cataloging
<i>Rineloricaria lanceolata</i> (Günther, 1868)	IDSM1028; IDSM1348
<i>Rineloricaria phoxocephala</i> (Eigenmann & Eigenmann, 1889)	IDSM2647; IDSM2613; INPA-ICT18670; INPA-ICT18667; INPA-ICT18665; MCP29825; MCP29827; MCP33229; MCP29833
<i>Rineloricaria</i> sp.1	MCP29830
<i>Spatuloricaria</i> sp.1	IDSM2690
<i>Sturisoma</i> aff. <i>brevirostre</i>	IDSM1248; IDSM1086
SILURIFORMES: Cetopsidae	
<i>Cetopsis coecutiens</i> (Lichtenstein, 1819)	IDSM298; MCP32816
<i>Cetopsis</i> sp.1	MCP33235; MCP33253
<i>Cetopsis</i> sp.2	MCP30622; MCP33252; MCP33254;
SILURIFORMES: Aspredinidae	
<i>Bunocephalus aleuropsis</i> Cope, 1870	MCP29654
<i>Bunocephalus coracoideus</i> (Cope, 1874)	IDSM162; IDSM1067; IDSM1078; IDSM1875; IDSM2102; IDSM2117; IDSM2119; IDSM2679; MCP29643
<i>Bunocephalus verrucosus</i> (Walbaum, 1792)	IDSM1087; IDSM2637; IDSM2649
<i>Pterobunocephalus depressus</i> (Haseman, 1911)	MCP29622; INPA-ICT18725; MCP29842; MCP29843
SILURIFORMES: Auchenipteridae	
<i>Ageneiosus intrusus</i> Ribeiro, Rapp Py-Daniel & Walsh, 2017	MCP32961; MCP32962; MCP32965
<i>Ageneiosus inermis</i> (Linnaeus, 1766)	IDSM1058; IDSM186; IDSM718; IDSM292; IDSM1929; IDSM1811
<i>Ageneiosus lineatus</i> Ribeiro, Rapp Py-Daniel & Walsh, 2017	MCP29895; MCP29897; MCP29899
<i>Ageneiosus ucayalensis</i> Castelnau, 1855	IDSM293; IDSM2633; INPA-ICT18922; MCP29898; MCP32832; MCP32833; MCP32834; MCP32960; MCP32967
<i>Ageneiosus uranophthalmus</i> Ribeiro, Rapp & Py-Daniel, 2010	MCP32963
<i>Ageneiosus vittatus</i> Steindachner, 1908	IDSM680; IDSM3
<i>Auchenipterus ambyiacus</i> Fowler, 1915	IDSM2206; MCP29402; MCP29403; MCP29404; MCP29406; MCP29407
<i>Auchenipterichthys coracoideus</i> (Eigenmann & Allen, 1942)	IDSM2593; MCP29217; MCP29219; MCP29220; IDSM000157
<i>Auchenipterus nuchalis</i> (Spix & Agassiz, 1829)	MCP29882; MCP29884; MCP29885; MCP30602
<i>Centromochlus existimatus</i> Mees, 1974	IDSM134; INPA-ICT19031; INPA-ICT19029; MCP29838; MCP29839; MCP29840; MCP29841
<i>Centromochlus heckelii</i> (De Filippi, 1853)	IDSM38; IDSM2154; MCP29618; MCP29619
<i>Epapterus dispilurus</i> Cope, 1878	IDSM36; IDSM268; IDSM271; IDSM2157; MCP29331; MCP29332; MCP29333
<i>Pseudepapterus hasemani</i> (Steindachner, 1915)	MCP029606
<i>Tatia intermedia</i> (Steindachner, 1877)	IDSM2599
<i>Trachelyopterus galeatus</i> (Linnaeus, 1766)	IDSM89; IDSM95; IDSM178; IDSM187; IDSM241; IDSM1771; IDSM1773; IDSM2579; MCP29412; MCP29354; MCP29412; MCP32804; MCP32805; MCP32809; MCP32809
<i>Trachelyopterus</i> sp. "placa larga"	IDSM1113; IDSM2576; IDSM2577
<i>Trachycorystes porosus</i> Eigenmann & Eigenmann, 1888	IDSM1002; IDSM1680; IDSM2210; IDSM2578
<i>Trachycorystes trachycorystes</i> (Valenciennes, 1840)	IDSM158
<i>Tympanopleura atronasus</i> (Eigenmann & Eigenmann, 1888)	IDSM37; IDSM269; IDSM1041; IDSM1857; INPA-ICT18986; INPA-ICT18983; MCP33178; MCP33179
<i>Tympanopleura brevis</i> Steindachner, 1881	IDSM682; IDSM683; IDSM2586
<i>Tympanopleura longipinna</i> Walsh, Ribeiro, Rapp & Py-Daniel, 2015	MCP29602; MCP29603

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<i>Tympanopleura piperata</i> (Eigenmann, 1912)	IDSMS1047; IDSMS1814
<i>Tympanopleura rondoni</i> (Miranda Ribeiro, 1914)	INPA-ICT18962; INPA-ICT18961; INPA-ICT18960; INPA-ICT18959; MCP29874; MCP29875; MCP29876; MCP29877
<i>Tympanopleura cf. brevis</i>	IDSMS3034
<i>Tympanopleura sp.1</i>	MCP33177; MCP33180; MCP33183; MCP33184; MCP33185; MCP33186
SILURIFORMES: Doradidae	
<i>Acanthodoras cataphractus</i> (Linnaeus, 1758)	IDSMS3035; IDSMS3036
<i>Agamyxis pectinifrons</i> (Cope, 1870)	IDSMS129; IDSMS1032; IDSMS1960; IDSMS1855; IDSMS2093; MCP33150; MCP33151; MCP33152; MCP33153; INPA-ICT19104
<i>Amblyodoras affinis</i> (Kner, 1855)	IDSMS1950; IDSMS1959
<i>Anadoras grypus</i> (Cope, 1872)	IDSMS1882; IDSMS1926; IDSMS1963; IDSMS2664; IDSMS1109; IDSMS1770; INPA-ICT19581; INPA-ICT19579; INPA-ICT19578; INPA-ICT19577; INPA- ICT19576; INPA-ICT19569; INPA-ICT19568; MCP29526; MCP29527; MCP29529; MCP29530
<i>Anadoras weddellii</i> (Castelnau, 1855, 1908)	IDSMS3037
<i>Astrodoras asterifrons</i> (Kner, 1853)	IDSMS169
<i>Centroadoras brachiatus</i> (Cope, 1872)	MCP29380
<i>Hassar cf. wilderi</i>	IDSMS3039
<i>Hemidoras morrissi</i> Eigenmann, 1925	IDSMS131; IDSMS296; IDSMS015; IDSMS2135; INPA-ICT19253; MCP29660; MCP32996; MCP32998; MCP33005
<i>Hemidoras stenopeltis</i> (Kner, 1855)	IDSMS1016; IDSMS1545; IDSMS1841; IDSMS1939; IDSMS2155; IDSMS2195; IDSMS2197; INPA-ICT19371; INPA-ICT19365; MCP29887; MCP29891; MCP29892; MCP29893
<i>Leptodoras gr. Acipenserinus</i>	IDSMSI265
<i>Lithodoras dorsalis</i> (Valenciennes, 1840)	IDSMS3040
<i>Megalodoras uranoscopus</i> (Eigenmann & Eigenmann, 1888)	IDSMS172; IDSMS107; IDSMS1051; IDSMS1901; IDSMS1769; IDSMS2295; MCP33195; MCP33197
<i>Nemadoras elongatus</i> (Boulenger, 1898)	IDSMS2134; INPA-ICT19273; INPA-ICT19272; MCP33125; MCP33126; MCP41546
<i>Nemadoras hemipeltis</i> (Eigenmann, 1925)	MCP33122; MCP33124
<i>Nemadoras humeralis</i> (Kner, 1855)	IDSMS1055; INPA-ICT37004; INPA-ICT18889; INPA-ICT18886; INPA- ICT18883; INPA-ICT18882; INPA-ICT18881; INPA-ICT18880; INPA- ICT18878; INPA-ICT18877; MCP29531; MCP29532; MCP29534; MCP29535; MCP29536; MCP29538; MCP29539; MCP29541; MCP29542; MCP29646
<i>Opsodoras boulengeri</i> (Steindachner, 1915)	IDSMS1817
<i>Opsodoras morei</i> (Steindachner, 1881)	INPA-ICT19254; INPA-ICT19252
<i>Opsodoras stuebelii</i> (Steindachner, 1882)	IDSMS2160; IDSMS1819; IDSMS1981; INPA-ICT19251; INPA-ICT19250
<i>Opsodoras sp.1</i>	MCP32997
<i>Ossancora asterophysa</i> Birindelli, Sabaj & Pérez, 2011	MCP29644; MCP29645; MCP29668
<i>Ossancora fimbriata</i> (Kner, 1855)	MCP29786; MCP2956
<i>Ossancora punctata</i> (Kner, 1855)	IDSMS173; IDSMS1772; IDSMS2187; IDSMS1856; IDSMS2648; INPA-ICT18737; MCP29662; MCP29663; MCP29665; MCP29666; MCP29667; MCP29806; MCP29807; MCP29808
<i>Oxydoras niger</i> (Valenciennes, 1821)	IDSMS88; IDSMS266; MCP29463
<i>Platyodoras armatulus</i> (Valenciennes, 1840)	IDSMS170; IDSMS2104; MCP33193
<i>Platyodoras hancockii</i> (Valenciennes, 1840)	IDSMS3041
<i>Pterodoras granulatus</i> (Valenciennes, 1821)	IDSMS94; IDSMS267; IDSMS2116; INPA-ICT19486; INPA-ICT19484; INPA-ICT19480; INPA-ICT19478; INPA-ICT19477; INPA-ICT19476; INPA-ICT19475; INPA-ICT18735; MCP31686; MCP31687; MCP31688; MCP31691; MCP31692

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<i>Rhynchodoras xingui</i> Klausewitz & Rösse, 1961	IDSM3042
<i>Scorpidoras heckelii</i> (Kner, 1855)	In the process of cataloging
<i>Tenellus ternetzi</i> (Eigenmann, 1925)	IDSM2145; IDSM133; IDSM141; IDSM291; IDSM2205
<i>Tenellus trimaculatus</i> (Boulenger, 1898)	IDSM48; IDSM49; IDSM50; IDSM1059; IDSM2194; INPA-ICT19369; INPA-ICT19367; MCP29834; MCP29835; MCP29836; MCP29837
<i>Trachydoras brevis</i> (Kner, 1853)	INPA-ICT36472
<i>Trachydoras microstomus</i> (Eigenmann, 1912)	IDSM3043
<i>Trachydoras nattereri</i> (Steindachner, 1881)	IDSM1017; INPA-ICT19100
<i>Trachydoras steindachneri</i> (Perugia, 1897)	IDSM2; IDSM1020; IDSM1813; IDSM1831; IDSM2638; INPA-ICT19459; MCP29231; MCP29233; MCP29235; MCP29236; MCP29687
SILURIFORMES: Heptapteridae	
<i>Brachyrhamdia marthae</i> Sands & Black, 1985	MCP49174
<i>Brachyrhamdia meesi</i> Sands & Black, 1985	MCP29849
<i>Cetopsorhamdia</i> sp.1	IDSM2592
<i>Gladioglanis conquistador</i> Lundberg, Bornbusch & Mago-Leccia, 1991	In the process of cataloging
<i>Goeldiella eques</i> (Müller & Troschel, 1849)	IDSM159
<i>Imparfinis stictonotus</i> (Fowler, 1940)	MCP29575
<i>Pimelodella altipinnis</i> (Steindachner, 1864)	IDSM3045
<i>Pimelodella cristata</i> (Müller & Troschel, 1849)	IDSM1062; IDSM1125; IDSM2165; IDSM1962; MCP33256; MCP33258; MCP33259; MCP33262; MCP33264
<i>Pimelodella geryi</i> Hoedeman, 1961	In the process of cataloging
<i>Pimelodella</i> aff. <i>eigenmanni</i>	IDSM219
<i>Pimelodella</i> sp.1	MCP29858; MCP29859; MCP29900
<i>Rhamdia quelen</i> (Quoy & Gaimard, 1824)	IDSM2164; IDSM144
SILURIFORMES: Pimelodidae	
<i>Brachyplatystoma filamentosum</i> (Lichtenstein, 1819)	IDSM57; IDSM2294
<i>Brachyplatystoma vaillantii</i> (Valenciennes, 1840)	IDSM3046
<i>Brachyplatystoma juruense</i> (Boulenger, 1898)	IDSM3047
<i>Brachyplatystoma platynemum</i> Boulenger, 1898	IDSM3048
<i>Brachyplatystoma rousseauxii</i> (Castelnau, 1855)	IDSM3049
<i>Calophysus macropterus</i> (Lichtenstein, 1819)	IDSM74; IDSM208; IDSM1069; IDSM1835; IDSM2641; INPA-ICT18937; INPA-ICT18936; INPA-ICT18935; INPA-ICT18934; INPA-ICT18933; INPA-ICT18932; INPA-ICT18931; INPA-ICT18930; INPA-ICT18929; MCP32762; MCP32763; MCP32764; MCP32765; MCP32766;
<i>Cheirocerus eques</i> Eigenmann, 1917	IDSM1070; IDSM1832; IDSM2193; IDSM2139
<i>Cheirocerus goeldii</i> (Steindachner, 1908)	IDSM1056; IDSM1790; IDSM1833; IDSM1940; MCP29578; MCP29911; MCP29915
<i>Duopalatinus peruanus</i> Eigenmann & Allen, 1942	INPA-ICT19038
<i>Exallodontus aguanai</i> Lundberg, Mago-Leccia & Nass, 1991	MCP24733; MCP29624
<i>Hemisorubim platyrhynchos</i> (Valenciennes, 1840)	IDSM1107; INPA-ICT19447; MCP29783
<i>Hypophthalmus edentatus</i> Spix & Agassiz, 1829	IDSM2201
<i>Hypophthalmus fimbriatus</i> Kner, 1858	IDSM3050
<i>Hypophthalmus marginatus</i> Valenciennes, 1840	IDSM39; IDSM58; IDSM1834; IDSM2158; MCP33160
<i>Leiarius marmoratus</i> (Gill, 1870)	IDSM83
<i>Leiarius pictus</i> (Müller & Troschel, 1849)	IDSM3051
<i>Megalonema</i> sp.1	MCP29854; MCP29855
<i>Phractocephalus hemioliopertus</i> (Bloch & Schneider, 1801)	IDSM148

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<i>Pimelodina flavipinnis</i> Steindachner, 1876	MCP30046; MCP30047; MCP30048; MCP30049; MCP30052
<i>Pimelodus albofasciatus</i> Mees, 1974	IDSM2163
<i>Pimelodus altissimus</i> Eigenmann & Pearson, 1942	IDSM297; MCP29869;
<i>Pimelodus blochii</i> Valenciennes, 1840	IDSM90; IDSM242; IDSM252; IDSM1000; MCP29222; MCP29223; MCP29224; MCP29458; MCP29460
<i>Pimelodus pictus</i> Steindachner, 1876	MCP29853
<i>Pimelodus ornatus</i> Kner, 1858	In the process of cataloging
<i>Pinirampus pirinampu</i> (Spix & Agassiz, 1829)	IDSM209; IDSM51; IDSM2191; IDSM1013; MCP32910; MCP32911; MCP32912; MCP32913; MCP32914
<i>Platysilurus mucosus</i> (Vaillant, 1880)	IDSM1019; IDSM1812; IDSM1821; IDSM2166; INPA-ICT19050; MCP29878; MCP29879; MCP29881
<i>Platynemateichthys notatus</i> (Jardine, 1841)	IDSM3053
<i>Platystomatichthys sturio</i> (Kner, 1858)	IDSM1071; MCP31695
<i>Propimelodus caesi</i> Parisi, Lundberg & DoNascimento, 2006	MCP29918; MCP29919; MCP29920
<i>Propimelodus</i> sp.1	MCP29870
<i>Pseudoplatystoma punctifer</i> (Castelnau 1855)	IDSM3054
<i>Pseudoplatystoma tigrinum</i> (Valenciennes, 1840)	IDSM161; IDSM1764; IDSM1952; MCP29886
<i>Sorubim elongatus</i> Littmann, Burr, Schmidt & Isern, 2001	IDSM1637; MCP30575
<i>Sorubim lima</i> (Bloch & Schneider, 1801)	IDSM327; IDSM1021; INPA-ICT18855
<i>Sorubim maniradii</i> Littmann, Burr & Buitrago-Suarez, 2001	INPA-ICT26636
<i>Sorubimichthys planiceps</i> (Spix & Agassiz, 1829)	IDSM3055
<i>Zungaro zungaro</i> (Humboldt, 1821)	IDSM1941; IDSM2213; INPA-ICT19498
SILURIFORMES: Pseudopimelodidae	
<i>Batrochoglanis raninus</i> (Valenciennes, 1840)	IDSM1112; IDSM2127; IDSM2169; INPA-ICT28580
<i>Batrochoglanis villosus</i> (Eigenmann, 1912)	IDSM1127; INPA-ICT18795
<i>Microglanis poecilus</i> Eigenmann, 1912	IDSM2292
<i>Microglanis</i> sp. 1	IDSM180; MCP29625; MCP29626; MCP29627; MCP29629
<i>Pseudopimelodus</i> sp.1	MCP29845
SYNBRANCHIFORMES: Synbranchidae	
<i>Synbranchus lamprea</i> Favorito, Zanata & Assumpção, 2005	MCP29363; MCP29364; MCP29365; MCP29366; MCP29367; MCP29368; MCP29369; MCP29370; MCP29371; MCP29372; MCP29373; MCP29374; MCP29375; MCP32915; MCP33025
<i>Synbranchus madeirae</i> Rosen & Rummey, 1972	IDSM1085; IDSM1862; IDSM1887; INPA-ICT18912; INPA-ICT18911; INPA- ICT18868
<i>Synbranchus</i> sp.1	IDSM189; IDSM1089; IDSM1779; IDSM1925; INPA-ICT18867; INPA- ICT18866; INPA-ICT18865; INPA-ICT18869; INPA-ICT52853; MCP33007; MCP33008; MCP33009; MCP33010; MCP33011; MCP33012; MCP33013; MCP33014; MCP33015; MCP33127; MCP33128; MCP33129
CICHLIFORMES: Cichlidae	
<i>Acarichthys heckelii</i> (Müller & Troschel, 1849)	IDSM102; IDSM287
<i>Acaronia nassa</i> (Heckel, 1840)	IDSM164; IDSM250; IDSM346; MCP29335; MCP29336; IDSM3057
<i>Aequidens tetramerus</i> (Heckel, 1840)	IDSM8
<i>Apistogramma agassizii</i> (Steindachner, 1875)	IDSM2619
<i>Apistogramma bitaeniata</i> Pellegrin, 1936	IDSM3011
<i>Apistogramma cacatuoides</i> Hoedeman, 1951	IDSM2611; IDSM2615
<i>Apistogramma eunotus</i> Kullander, 1981	IDSM3012
<i>Apistogramma pertensis</i> (Haseman, 1911)	IDSM1565
<i>Apistogramma regani</i> Kullander, 1980	IDSM2121

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<i>Apistogrammoides pucallpaensis</i> Meinken, 1965	IDSM202; IDSM2616
<i>Astronotus ocellatus</i> (Agassiz, 1831)	IDSM97; IDSM190; IDSM243; IDSM2668
<i>Biotodoma cupido</i> (Heckel, 1840)	IDSM3058
<i>Bujurquina</i> sp.1	IDSM3014
<i>Chaetobranchius flavescens</i> Heckel, 1840	IDSM216
<i>Chaetobranchius semifasciatus</i> Steindachner, 1875	IDSM249; MZUSP27926.0
<i>Cichla monoculus</i> Spix & Agassiz, 1831	IDSM201; IDSM246
<i>Cichlasoma amazonarum</i> Kullander, 1983	IDSM84; IDSM244; IDSM245; IDSM199; IDSM795; IDSM1639; MCP33135; MCP33137; MCP33138
<i>Crenicara punctulata</i> (Günther, 1863)	IDSM3013
<i>Crenicichla cincta</i> Regan, 1905	MCP29338
<i>Crenicichla inpa</i> Ploeg, 1991	INPA-ICT19388; MCP32986; MCP32987; MCP32988; MCP32989; MCP32990; MCP32991; MCP33187; MCP33188; MCP33189; MCP33190; MCP33191; MCP33192
<i>Crenicichla lugubris</i> Heckel, 1840	In the process of cataloging
<i>Crenicichla regani</i> Ploeg, 1989	MCP29608; MCP29611
<i>Crenicichla reticulata</i> (Heckel, 1840)	IDSM40; IDSM2602; INPA-ICT19201; MCP33039; MCP33040
<i>Crenicichla proteus</i> Cope, 1872	INPA-ICT18790; INPA-ICT18788
<i>Crenicichla</i> sp.1	MCP38632
<i>Geophagus proximus</i> (Castelnau, 1855)	IDSM3060
<i>Geophagus</i> cf. <i>altifrons</i>	In the process of cataloging
<i>Heros efasciatus</i> Heckel, 1840	IDSM455; IDSM15; MCP32920; MZUSP27929.0
<i>Hypselecar temporalis</i> (Günther, 1862)	IDSM1894
<i>Laetacara thayeri</i> (Steindachner, 1875)	IDSM101; IDSM2662; MCP29595; MCP29596; MCP29597; MCP29598
<i>Mesonauta insignis</i> (Heckel, 1840)	IDSM14
<i>Pterophyllum leopoldi</i> (Gosse, 1963)	IDSM13; IDSM2141
<i>Pterophyllum scalare</i> (Schultze, 1823)	IDSM2142
<i>Satanoperca acuticeps</i> (Heckel, 1840)	In the process of cataloging
<i>Satanoperca jurupari</i> (Heckel, 1840)	MCP32818
<i>Satanoperca</i> sp.1	MCP32819; MCP32820;
<i>Symphysodon tarzoo</i> Lyons, 1959	IDSM3061
CYPRINODONTIFORMES: Rivulidae	
<i>Anablepsoides micropus</i> (Steindachner, 1863)	IDSM272; IDSM1916; IDSM2612; IDSM2628; IDSM2661;
<i>Anablepsoides ornatus</i> Garman, 1895	IDSM1904
<i>Anablepsoides</i> sp.1	IDSM796*; INPA-ICT58224*; INPA-ICT58223**
CYPRINODONTIFORMES: Fluviphylacidae	
<i>Fluviphylax</i> cf. <i>pygmaeus</i>	IDSM3062
BELONIFORMES: Belonidae	
<i>Potamorhaphis guianensis</i> (Jardine, 1843)	IDSM1958; INPA-ICT19000
<i>Pseudotyloturus microps</i> (Günther, 1866)	IDSM1098; IDSM1853; IDSM1923; MCP30038
TETRAODONTIFORMES: Tetradontidae	
<i>Colomesus asellus</i> (Müller & Troschel, 1849)	IDSM1064; IDSM1662; MCP33033
PERCIFORMES: Scianidae	
<i>Plagioscion montei</i> Soares & Casatti, 2000	MCP30598; MCP32750
<i>Plagioscion squamosissimus</i> (Heckel, 1840)	INPA-ICT19002; INPA-ICT19001; MCP31705
GOBIIFORMES: Eleotridae	
<i>Microphilypnus</i> sp.1	MCP30631; MCP30638
PLEURONECTIFORMES: Achiridae	
<i>Hypoclinemus mentalis</i> (Günther, 1862)	IDSM2688; IDSM1049
CERATODONTIFORMES: Lepidosirenidae	
<i>Lepidosiren paradoxa</i> Fitzinger, 1837	IDSM1088; IDSM2113; IDSM2645; INPA-ICT18697; INPA-ICT18696; INPA-ICT18695; INPA-ICT18694

Conflicts of Interest

The authors declare that there are no conflicts of interests related to the publication of this manuscript.

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