Check List 2007: 3(2)
ISSN: 1809-127X

LISTS OF SPECIES

Fish, Lajeado Reservoir, rio Tocantins drainage, State of Tocantins, Brazil

Paulo H. F. Lucinda
Iriene S. Freitas
Anderson B. Soares
Elineide E. Marques
Carlos S. Agostinho
Rafael J. de Oliveira

Núcleo de Estudos Ambientais (NEAMB), Universidade Federal do Tocantins, Campus de Porto Nacional. Caixa Postal 136, CEP 77500-000, Porto Nacional, TO, Brazil. E-mail: lucinda@uft.edu.br

Abstract
The Lajeado HR is the fourth hydroelectric power plant constructed in the rio Tocantins. The implementation of hydroelectric plants in the rio Tocantins basin is of high environmental concern because they may result in severe damage to the ichthyofauna. A species list of the area of influence of the Lajeado HR is provided, in the hope that it will contribute to the knowledge of this potentially threatened ichthyofauna. A few comments on the ichthyofauna of the rio Tocantins drainage are also provided.

Introduction

The Lajeado Hydroelectric Reservoir (HR) is the fourth hydroelectric power plant constructed in the rio Tocantins, and the first one built upstream of the Tucuruí reservoir. It is located in an area dominated by natural savanna-like Cerrado vegetation. Deforestation in the region has accelerated in the last few years due to agriculture and cattle raising and has contributed to changes in the aquatic environment.

Prior to damming, the area occupied by the Lajeado HR was in the middle and upper portions of the rio Tocantins channel and characterized by a lotic environment with many rapids and falls. Therefore, after the dam was finished in October 2001, the hydrological environment was permanently changed with severe consequences for the ichthyofauna.

Information about the fish fauna in this region is rare. The ichthyofauna of the rio Tocantins drainage is badly known, especially for the middle and upper portions. The area contains a large proportion of endemic species for several groups of fishes (Géry 1969; Kullander 1983; Vari 1988). Several new species have been described from this basin in the last decades (*e.g*. Lucena 1987; Menezes and Lucena 1998; Malabarba and Vari 2000; Littmann *et al.* 2001; Bertaco and Lucinda 2005, 2006). Nonetheless, many species remain unknown to science, exhibit serious taxonomic problems or await formal description. Many studies on faunal composition have been published in technical reports (*e.g*. Santos *et al*. 1985; Zuanon *et al*. 2004), or are restricted to small taxonomic groups (*e.g*. Santos and Jégu 1990). Thus, the knowledge of this fauna is incomplete.

Nevertheless, the middle and upper rio Tocantins basin is suffering severe alterations from the installation of hydroelectric plants. Energy production initiatives have been promoting constant alterations causing the disappearance of many microhabitats within the drainage as well as modifying fish assemblages. Therefore, information on the biodiversity of this drainage is being lost and it is possible that some species are being extirpated before they are formally described.

The aim of this paper is to provide a species list of the area influenced by the Lajeado HR.

Material and methods

The area influenced by the Lajeado HR was sampled at the locations illustrated in Figure 1. Sample environments included: (1) rivers (upstream from the reservoir: rio Santa Tereza, rio São Valério, rio Manoel Alves; tributaries to the reservoir: rio Crixás, rio Areias, rio Mangues, rio Santa Luzia, and rio Lajeadinho; and downstream the reservoir: rio Sono); (2) lagoons: Água Branca, Dionísio, Capivara, and Feia; (3) the reservoir itself, in the rio Tocantins; (4) the rio Tocantins upstream the reservoir; and (5) the rio Tocantins downstream the reservoir.

LISTS OF SPECIES

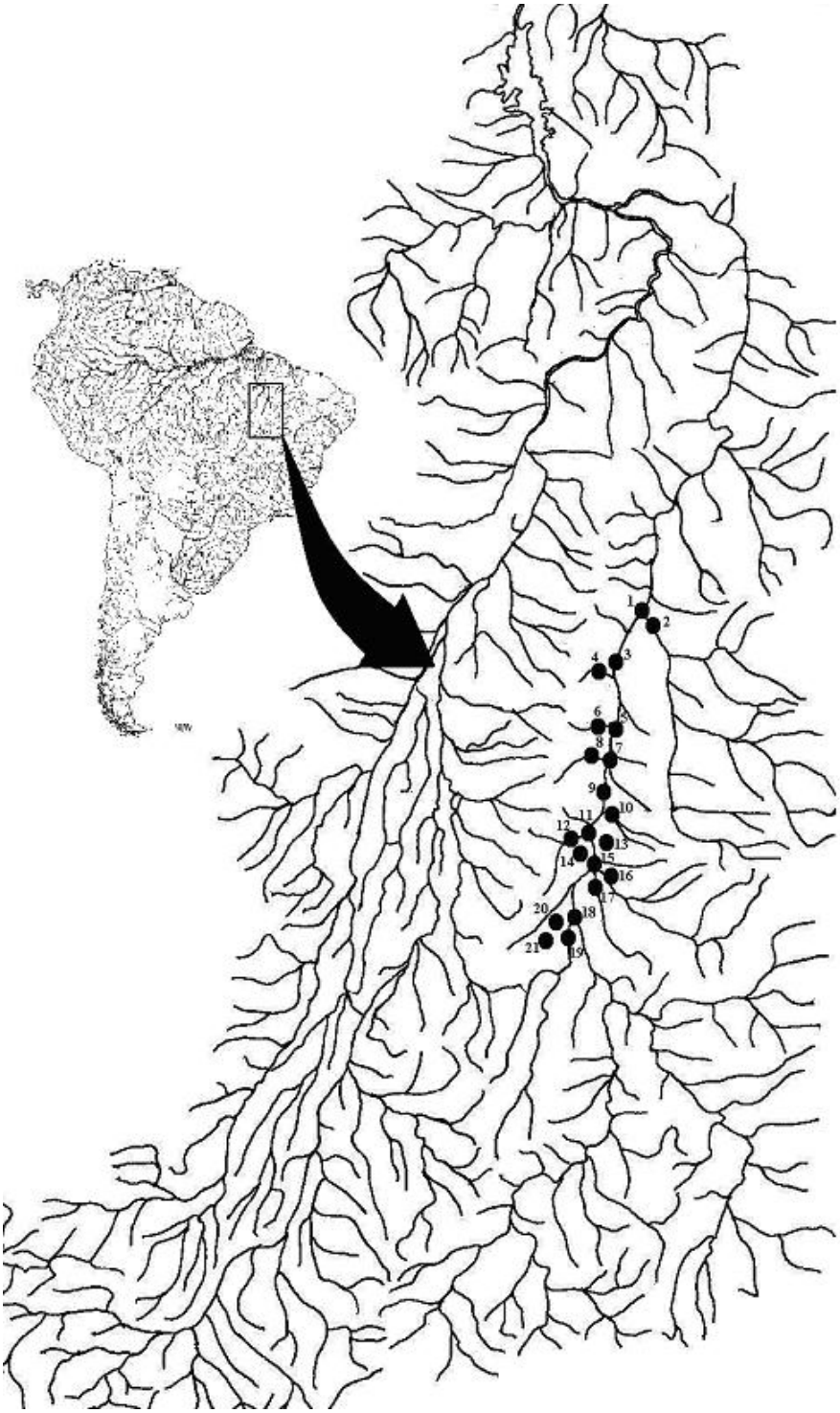

Figure 1. Sampling points: 1. Rio Tocantins, near the confluence with rio Sono; 2. Rio Sono; 3. Rio Tocantins downstream the Lajeado HR (Tocantins, Funil); 4. Rio Lajeadinho; 5. Rio Tocantins, near its confluence with rio Santa Luzia; 6. Rio Santa Luzia; 7. Rio Tocantins, near its confluence with rio Mangues; 8. Rio Mangues; 9. Rio Tocantins near Porto Nacional; 10. Rio Areias; 11. Rio Tocantins near Brejinho de Nazaré; 12. Rio Crixás; 13. Lagoa Feia; 14. Lagoa Capivara; 15. Rio Tocantins, near its confluence with rio Manoel Alves; 16. Rio Manoel Alves; 17. Rio São Valério; 18. Rio Tocantins, near its confluence with rio Santa Tereza; 19. Rio Santa Tereza; 20. Lagoa Dionísio; and 21. Lagoa Água Branca.

LISTS OF SPECIES

Fish species were collected from October 1999 to September 2004, using gill nets, seine nets, cast nets, and electro-fishing equipment. Fishes were collected under IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis) permits (# 01/1999, 01/2000, 01/2001, 01/2002, 01/2003, 01/2004). Standardized samplings were carried out monthly with the aid of (1) gill-nets mesh with 2.4 to 16 cm between-knot mesh sizes, with approximately 20 m total length (total effort = 490,370 m^2); (2) seine nets with approximately 20 m total length and 0.5 cm mesh (total effort 272,484 m^2); (3) long lines with 20 fish hooks and *pindas* with a single fish hook (total effort 23,000 hooks); and (4) electro-fishing (total effort 2,614 m^2) in several places at streams. The sampling totalized 770 days with the fish gear in the water in different places, during the sampling period.

Voucher specimens are in the UNT (Coleção de Peixes do Laboratório de Ictiologia Sistemática, Universidade Federal do Tocantins, Porto Nacional). The classification of fishes mostly followed Reis *et al*. (2003), which is based on current phylogenetic knowledge on Neotropical freshwater fishes, except the allocation of the genus *Chalceus* in the family Alestidae, which follows Zanata and Vari (2005).

Results and discussion

This inventory yielded 343 species distributed in 42 families and 12 orders (Appendix 1).

The Characiformes represented 50.2 % of the total number of specimens, whereas the Siluriformes represented 30.7 %. Perciformes, Gymnotiformes, and remaining orders represented 8.3 %, 5.0 %, and < 2.0 % of the total number of specimens, respectively. The dominant characiform families were Characidae (31.6 %), Anostomidae (6.8 %), and Curimatidae (4.1 %). Among the Siluriformes, the most abundant families were Loricariidae (12.4 %), Pimelodidae (5.0 %), Doradidae, Auchenipteridae, and Trichomycteridae (2.6 % each). The Gymnotiformes included representatives of the families Sternopygidae (six species), Rhamphichthyidae (three species), Gymnotidae (two species), and Hypopomidae (one species).

The perciform family Cichlidae corresponded to 6.5 % of the total number of specimens. The number of species within families in the remaining fish orders were: Potamotrygonidae (10 species), Pristigasteridae, Engraulidae, and Rivulidae (three species each), Poeciliidae, Arapaimatidae, Belonidae, Synbranchidae, Tetraodontidae, and Achiridae (one species each). Among listed species 4.4 % (15 species) are provisionally identified, and 29-38 % of the total number of species corresponds to undescribed species. 38 species (about 11 %), are endemic to the rio Tocantins drainage.

The rio Tocantins drainage is an area of endemism for several Neotropical freshwater fish groups as identified by several authors (*e.g*. Vari 1988; Menezes and Lucena 1998; Lima and Moreira 2003). Especially in its upper portions, it appears also as a highly endemic center for the Ancistrini, as shown by the presence of three recently described species of *Hemiancistrus* (Cardoso and Lucinda 2003), and four endemic species of *Ancistrus* (Fisch-Muller *et al*. 2001; 2005).

Moreover, new species have been described at an accelerating pace in the last few years, *e.g*. *Cetopsis arcana*, *C. caiapo*, *C. sarcodes*, and *Denticetopsis epa* (Vari *et al*. 2005), *Astyanax elachylepis* (Bertaco and Lucinda 2005), *Hypostomus ericae* (Carvalho and Weber 2005), *Hyphessobrycon hamatus* (Bertaco and Malabarba 2005), and *Moenkhausia pankilopteryx* (Bertaco and Lucinda 2006). Several species are unknown or exhibit serious taxonomic and nomenclatural difficulties (*e.g*. *Potamotrygon* spp., *Leporinus* spp., *Hemigrammus* spp., *Knodus* spp., *Moenkhausia* spp., *Metynnis* spp., *Myleus* spp., *Serrasalmus* spp., *Hoplias* spp., *Pimelodus* spp., *Hypostomus* spp., *Gymnotus cf. carapo*, *Eigenmannia cf. macrops*, *Crenicichla* spp.). Others are rarely captured (*e.g*. *Astronotus crassipinis, Otocinclus hoppei, Sartor tucuruiense*).

All these facts indicate the poor level of taxonomic knowledge of this ichthyofauna. Actually, the situation is alike for Neotropical freshwater fishes as a whole (Vari and Malabarba 1998). Hydroelectric projects have caused serious

alterations of several kinds of microenvironments inside the basin, and some are disappearing along with their ichthyofaunas. Thus, a substantial amount of information about fish diversity on the rio Tocantins is disappearing. Migratory species may be the most affected component of fish communities by damming. Several migratory species inhabit the rio Tocantins drainage, among which 32 species were recorded during this study.

Our knowledge of Neotropical freshwater fishes is limited by two main obstacles: (1) the scarcity of information on phylogenetic relationships among and between several fish groups from these areas, and (2) incomplete information on species-level diversity. It is therefore imperative to sample and document the diversity of areas such as the middle and upper rio Tocantins, where industrial and agricultural activities are rapidly modifying natural communities.

Acknowledgements
This paper benefited from the criticism of L. Malabarba (MCP), R. Benine (UNESP) and one anonymous reviewer. This study was financially supported by Investco S.A. We are grateful to the Núcleo de Estudos Ambientais (NEAMB) for the logistic and technical support. ABS is financially supported by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq, process 505286/ 2004–1). PHFL is partially supported by a research grant from CNPq (process 304838/2005–5). We thank R. Reis (MCP) and W. Crampton (UFC) for comments on the English.

Literature cited

Bertaco, V. A. and L. R. Malabarba. 2005. A new species of *Hyphessobrycon* (Teleostei: Characidae) from the upper rio Tocantins drainage, with bony hooks on fins. Neotropical Ichthyology 3(1): 83-88.

Bertaco, V. A. and P. H. F. Lucinda. 2005. *Astyanax elachylepis* (Teleostei: Characidae), a new characid fish from rio Tocantins drainage, Brazil. Neotropical Ichthyology 3(3): 389-394.

Bertaco, V. A. and P. H. F. Lucinda. 2006. *Moenkhausia pankilopteryx*, a new species from rio Tocantins drainage, Brazil (Ostariophysi: Characiformes, Characidae). Zootaxa 1120: 57-68.

Cardoso, A. R. and P. H. F. Lucinda, 2003. Three new species of *Hemiancistrus* (Teleostei: Siluriformes: Loricariidae) from the rio Tocantins basin with comments on the genus. Ichthyological Exploration of Freshwaters 14(1): 73-84.

Carvalho, P. H. and C. Weber. 2005. Five new species of the *Hypostomus cochliodon* group (Siluriformes: Loricariidae) from the middle and lower Amazon System. Revue Suisse de Zoologie 111(4): 953-978.

Fisch-Muller, S., R. Mazonni, and C. Weber. 2001. Genetic and morphological evidences for two new sibling species of *Ancistrus* (Siluriformes: Loricariidae) in upper rio Tocantins drainage, Brazil. Ichthyological Exploration of Freshwaters 12(4): 289-304.

Fisch-Muller, S., A. R. Cardoso, J. F. P. Silva, and V. A. Bertaco. 2005. Three new species of *Ancistrus* Kner (Teleostei: Siluriformes: Loricariidae) from the upper Tapajós and Tocantins rivers. Revue Suisse de Zoologie 112(2): 559-572.

Géry, J. 1969. The freshwater fishes of South America. Pp. 828-848. In E. J. Fittkau, J. Illies, H. Klinge, G. Shwabe, and H. Sioli (ed.), Biogeography and Ecology in South America. Vol. 2. The Hague, W. Junk.

Kullander, S. O. 1983. A revision of the South American cichlid fish genus *Cichlasoma* (Teleostei, Cichlidae). Naturhistoriska Riksmuseet, Genus *Cichlasoma*: 1- 296.

Lima, F. C. T. and C. R. Moreira. 2003. Three new species of *Hyphessobrycon* (Characiformes: Characidae) from the upper rio Araguaia basin in Brazil. Neotropical Ichthyology 1(1): 21-33.

Littmann, M. W., B. M. Burr., R. E. Schmidt, and E. R. Isern. 2001. *Sorubim elongatus* a new catfish (Siluriformes, Pimelodidae) from tropical South America syntopic with *S. Lima*. Ichthyological Exploration of Freshwaters 12(1): 1-16.

Lucena, C. A. S. 1987. Revisão e redefinição do gênero neotropical *Charax* Scopoli, 1777 com a descrição de quatro espécies novas (Pisces; Characifores; Characidae). Comunicações do Museu de Ciencias e Tecnologia da PUCRS (Zoologia) 40: 5-124.

LISTS OF SPECIES

Malabarba, L. R. and R. P. Vari. 2000. *Caiapobrycon tucurui*, a new genus and species of characid from the rio Tocantins basin, Brazil (Characiformes: Characidae). Ichthyological Exploration of Freshwaters 11(4): 315-326.

Menezes, N. A. and C. A. S. Lucena. 1998. Revision of the subfamily Roestinae (Ostariophysi: Characiformes: Cynodontidae). Ichthyological Exploration of Freshwaters 9(3): 279-291.

Reis, R. E., S. O. Kullander, and C. J. Ferraris Jr. (eds.). 2003. Check List of Freshwater Fishes of South and Central America. Porto Alegre, Edipucrs, 729 p.

Santos, G. M. and M. Jégu. 1990. Inventário taxonômico e redescrição das espécies anostomideos (Characiformes, Anostomidae) do baixo rio Tocantins, PA, Brasil. Acta Amazonica 19: 159-213.

Santos, G., M. Jegú, and B. Merona. 1985. Catálogo dos peixes comerciais do baixo Tocantins. Manaus, ELETRONORTE/ CNPq/ INPA, 83 p.

Santos, G. M., A. A. Juras, B. Merona, and M. Jégu. 2004. Peixes do baixo rio Tocantins. Vinte anos depois da Usina Hidrelétrica Tucuruí. Brasilia, Eletronorte. 215 p.

Vari, R. P. and L. R. Malabarba. 1998. Neotropical Ichthyology: an overview. Pp. 1-11. In L. R. Malabarba, R. E. Reis, R. P. Vari, Z. M. S. Lucena, and C. A. S. Lucena (eds.), Phylogeny and Classification of Neotropical Fishes. Porto Alegre, Edipucrs.

Vari, R. P. 1988. The Curimatidae, a lowland neotropical fish family (Pisces: Characiformes): Distribution, endemism, and phylogenetic biogeography. Pp. 343-377. In P. E. Vanzolini and W. R. Heyer (eds.), Proceedings of a workshop on Neotropical distribution patterns. Rio de Janeiro, Academia Brasileira de Ciências.

Vari, R. P., C. J. Ferraris Jr., and M. C. C. de Pinna. 2005. The neotropical whale catfishes (Siluriformes: Cetopsidae: Cetopsinae), a revisionary study. Neotropical Ichthyology 3(2): 127-238.

Zanata, A. M. and R. P. Vari. 2005. The family Alestidae (Ostariophysi, Characiformes): a phylogenetic analysis of a trans-Atlantic clade. Zoological Journal of the Linnean Society 145: 1-144.

Zuanon, J., E. J. G. Ferreira, G. M. Santos, S. A. Amadio, M. M. Bitencourt, A. J. Darwich, L. F. Alves, P. A. S. Mera, M. C. L. B. Ribeiro, B. D. Amaral, and M. C. L. B. Prado. 2004. Ictiofauna do Parque Estadual do Cantão. 263 p.

Received October 2006
Accepted March 2007
Published online April 2007

Appendix 1. Fish species collected in the area of influence of the Lajeado HR region from October 1999 to September 2004.

Class CHONDRICHTHYES
Subclass ELASMOBRANCHII
Superorder EUSELACHI
Order MYLIOBATIFORMES
Sub-order MYLIOBATOIDEI
Superfamily DASYATOIDEA
Family POTAMOTRYGONIDAE
Paratrygon aiereba
Potamotrygon orbignyi
Potamotrygon sp. A
Potamotrygon sp. B
Potamotrygon sp. C
Potamotrygon sp. D

LISTS OF SPECIES

Potamotrygon sp. E
Potamotrygon sp. F
Potamotrygon sp. G

Class ACTINOPERYGII
Subclass NEOPTERYGII
Division TELEOSTEI
Superorder OSTEOGLOSSOMORPHA
Order OSTEOGLOSSIFORMES
Sub-order OSTEOGLOSSOIDEI
Family ARAPAIMATIDAE
Arapaima gigas
Subdivision CLUPEOCEPHALA
Superorder CLUPEOMORPHA
Order CLUPEIFORMES
Sub-order CLUPEOIDEI
Family PRISTIGASTERIDAE
Pellona flavipinnis
Pristigaster cayana
Family ENGRAULIDAE
Anchoviella cf. carrikeri
Lycengraulis batesii
Superorder OSTARIOPHYSI
Series OTOPHYSI
Order CHARACIFORMES
Family ACESTRORHYNCHIDAE
Acestrorhynchus falcatus
Acestrorhynchus microlepis
Family ALESTIDAE
Chalceus epakros
Family ANOSTOMIDAE
Abramites hypselonotus
Anostomus ternetzi
Laemolyta fernandezi
Leporellus vittatus
Leporinus affinis
Leporinus desmotes
Leporinus aff. friderici
Leporinus cf. granti
Leporinus maculatus
Leporinus octomaculatus
Leporinus pachycheilus
Leporinus sp. A
Leporinus sp. B
Leporinus sp. C
Leporinus sp. D
Leporinus sp. E
Leporinus sp. F
Leporinus taeniofasciatus
Leporinus tigrinus
Leporinus trifasciatus

LISTS OF SPECIES

Sartor tucuruiense
Schizodon vittatus
Family CHARACIDAE
GENERA INCERTAE SEDIS
Astyanax cf. goyacensis
Astyanax elachylepis
Astyanax sp.
Bryconops sp. A
Bryconops sp. B
Bryconops sp. C
Bryconops sp. D
Caiapobrycon tucurui
Creagrutus atrisignum
Creagrutus britskii
Creagrutus cracentis
Creagrutus figueiredoi
Creagrutus menezesi
Creagrutus mucipu
Ctenobrycon hauxwellianus
Exodon paradoxus
Hemigrammus sp. A
Hemigrammus sp. B
Hemigrammus sp. C
Hemigrammus sp. D
Hyphessobrycon sp. A
Hyphessobrycon sp. B
Hyphessobrycon sp. C
Hyphessobrycon sp. D
Hyphessobrycon sp. E
Jupiaba apenima
Jupiaba polylepis
Jupiaba sp. A
Jupiaba sp. B
Knodus sp. A
Knodus sp. B
Knodus sp. C
Knodus sp. D
Knodus sp. E
Knodus sp. F
Knodus sp. G
Knodus sp. H
Leptobrycon sp.
Microschemobrycon sp.
Moenkhausia cf. sanctaefilomenae
Moenkhausia aff. dichroura
Moenkhausia loweae
Moenkhausia pankilopteryx
Moenkhausia pyrophthalma
Moenkhausia sp. A
Moenkhausia sp. B
Moenkhausia sp. C

LISTS OF SPECIES

Moenkhausia sp. D
Moenkhausia sp. E
Moenkhausia sp. F
Moenkhausia sp. G
Moenkhausia sp. H
Moenkhausia sp. I
Moenkhausia sp. L
Moenkhausia tergimacula
Roeboexodon geryi
Salminus hilarii
Triportheus albus
Triportheus auritus
Triportheus trifurcatus
Tyttobrycon sp. A
Tyttobrycon sp. B
Sub-family AGONIATINAE
Agoniates halecinus
Sub-family APHYOCHARACINAE
Aphyocharax sp.
Sub-family BRYCONINAE
Brycon falcatus
Brycon gouldingi
Brycon sp. A
Brycon sp. B
Sub-family CHARACINAE
Acestrocephalus sardina
Charax leticiae
Galeocharax gulo
Phenacogaster sp.
Roeboides affinis
Sub-family CHEIRODONTINAE
Serrapinnus sp. A
Serrapinnus sp. B
Serrapinnus sp. C
Serrapinnus sp. D
Serrapinnus sp. E
Sub-family CLUPEACHARACINAE
Clupeacharax anchoveoides
Sub-family SERRASALMINAE
Acnodon normani
Colossoma macropomum
Metynnis hypsauchen
Metynnis sp. A
Metynnis sp. B
Mylesinus paucisquamatus
Myleus cf. torquatus
Myleus setiger
Myleus sp. A
Myleus sp. B
Myleus sp. C
Myleus sp. D

LISTS OF SPECIES

Myleus sp. E
Myloplus sp.
Mylossoma duriventre
Piaractus brachypomus
Piaractus mesopotamicus
Pygocentrus nattereri
Serrasalmus eigenmanni
Serrasalmus maculatus
Serrasalmus rhombeus
Serrasalmus sp.
Tometes sp.
Sub-family STETHAPRIONINAE
Brachychalcinus copei
Poptella compressa
Sub-family TETRAGONOPTERINAE
Tetragonopterus argenteus
Tetragonopterus chalceus
Tetragonopterus sp. A
Tetragonopterus sp. B
Family CHILODONTIDAE
Caenotropus labyrinthicus
Chilodus punctatus
Family CRENUCHIDAE
Characidium sp.
Melanocharacidium dispilomma
Family CTENOLUCIIDAE
Boulengerella cuvieri
Family CURIMATIDAE
Curimata acutirostris
Curimata cyprinoides
Curimata inornata
Curimatella dorsalis
Curimatella immaculata
Cyphocharax festivus
Cyphocharax gouldingi
Cyphocharax plumbeus
Cyphocharax signatus
Cyphocharax spilurus
Psectrogaster amazonica
Steindachnerina amazonica
Steindachnerina gracilis
Steindachnerina sp.
Family CYNODONTIDAE
Cynodon gibbus
Hydrolycus armatus
Hydrolycus tatauaia
Rhaphiodon vulpinus
Family ERYTHRINIDAE
Hoplerythrinus unitaeniatus
Hoplias cf. malabaricus
Hoplias cf. lacerdae

LISTS OF SPECIES

Family GASTEROPELECIDAE
Thoracocharax stellatus
Family HEMIODONTIDAE
Argonectes robertsi
Bivibranchia fowleri
Bivibranchia velox
Hemiodus microlepis
Hemiodus ternetzi
Hemiodus unimaculatus
Famíla LEBIASINIDAE
Pyrrhulina brevis
Family PARODONTIDAE
Apareiodon machrisi
Apareiodon argenteus
Family PROCHILODONTIDAE
Prochilodus nigricans
Semaprochilodus brama
Order SILURIFORMES
Family PSEUDOPIMELODIDAE
Batrochoglanis sp. A
Batrochoglanis sp. B
Microglanis sp. A
Microglanis sp. B
Family HEPTAPTERIDAE
Pimelodella sp.
Pimelodella cristata
Phenacorhamdia sp.
Rhamdia itacaiunas
Rhamdia sp.
Family PIMELODIDAE
Aguarunichthys tocantinsensis
Brachyplatystoma filamentosum
Hemisorubim platyrhynchos
Hypophthalmus marginatus
Megalonema cf. platycephalum
Pimelodina flavipinnis
Pimelodus blochii
Pimelodus ornatus
Pimelodus sp. A
Pimelodus sp. B
Pimelodus sp. C
Pimelodus tetramerus
Pinirampus pirinampu
Phractocephalus hemioliopterus
Pseudoplatystoma fasciatum
Pseudopimelodus sp.
Sorubim lima
Sorubimichthys planiceps
Zungaro zungaro
Family DORADIDAE
Hassar wilderi

LISTS OF SPECIES

Leptodoras acipenserinus
Leptodoras praelongus
Megalodoras uranoscopus
Nemadoras cf. leporhinus
Oxydoras niger
Platydoras costatus
Pterodoras granulosus
Rhinodoras aff. boehlkei
Family LORICARIIDAE
Sub-family HYPOPTOPOMATINAE
Hypoptopoma sp.
Otocinclus hoppei
Sub-family LORICARIINAE
Farlowella amazona
Harttia duriventris
Hemiodontichthys acipenserinus
Lamontichthys filamentosus
Limatulichthys griseus
Loricaria sp.
Loricariichthys sp.
Rineloricaria lanceolata
Rinelocaria sp. A
Rinelocaria sp. B
Sturisoma rostratum
Sub-family HYPOSTOMINAE
Acanthicus hystrix
Ancistrus aguaboensis
Ancistrus minutus
Ancistrus sp. A
Ancistrus sp. B
Ancistrus sp. C
Ancistrus sp. D
Baryancistrus longipinnis
Baryancistrus niveatus
Glyptoperichthys joselimaianus
Hemiancistrus spilomma
Hemiancistrus spinosissimus
Hypostomus ericae
Hypostomus sp. A
Hypostomus sp. B
Hypostomus sp. C
Hypostomus sp. D
Hypostomus sp. E
Hypostomus sp. F
Hypostomus sp. G
Hypostomus sp. H
Hypostomus sp. I
Leporacanthicus galaxias
Panaque nigrolineatus
Panaque pariolispos
Peckoltia vittata

LISTS OF SPECIES

Pseudacanthicus serratus
Pseudacanthicus sp.
Family CALLICHTHYIDAE
Aspidoras eurycephalus
Callichthys callichthys
Corydoras sp. A
Corydoras sp. B
Corydoras xinguensis
Hoplosternum littorale
Family ASPREDINIDAE
Bunocephalus aleuropsis
Family AUCHENIPTERIDAE
Ageneiosus brevis
Ageneiosus ucayalensis
Auchenipterus nuchalis
Glanidium sp.
Tatia sp. A
Tatia sp. B
Tatia sp. C
Tocantinsia piresi
Trachelyopterus galeatus
Family CETOPSIDAE
Cetopsis sp.
Cetopsis coecutiens
Cetopsis plumbea
Family TRICOMYCTERIDAE
Ammoglanis diaphanus
Homodiaetus sp.
Pseudostegophilus nemurus
Schultzichthys cf. bondi
Schultzichthys sp.
Vandellia cirrhosa
Vandellia sp. A
Vandellia sp. B
Vandellia sp. C
Order GYMNOTIFORMES
Family RHAMPHICHTHYIDAE
Gymnorhamphichthys sp.
Rhamphichthys marmoratus
Rhamphichthys rostratus
Family APTERONOTIDAE
Apteronotus aff. albifrons
Porotergus sp. A
Porotergus sp. B
Sternarchogiton nattereri
Sternarchorhamphus muelleri
Sternarchorhynchus sp.
Family GYMNOTIDAE
Gymnotus cf. carapo
Electrophorus electricus
Family STERNOPYGIDAE

LISTS OF SPECIES

Archolaemus blax
Eigenmannia cf. trilineata
Eigenmannia cf. macrops
Eigenmannia sp.
Rhabdolichops eastwardi
Sternopygus macrurus
Familia HYPOPOMIDAE
Brachyhypopomus cf. pinnicaudatus
Subdivisão EUTELEOSTEI
NEOGNATHI
NEOTELEOSTEI
Superorder ACANTHOPTERYGII
Série PERCOMORPHA
Order PERCIFORMES
Sub-order PERCOIDEI
Superfamily PERCOIDEA
Family SCIAENIDAE
Pachypops fourcroi
Pachyurus calhamazon
Pachyurus junki
Pachyurus paucirastrus
Petilipinnis grunniens
Plagioscion squamosissimus
Sub-order LABROIDEI
Family CICHLIDAE
Aequidens tetramerus
Astronotus crassipinnis
Biotodoma cupido
Caquetaia sp.
Cichla kelberi
Cichla sp.
Cichlasoma araguaiense
Crenicichla adspersa
Crenicichla cametana
Crenicichla johanna
Crenicichla labrina
Crenicichla lepidota
Crenicichla lugubris
Crenicichla reticulata
Crenicichla saxatilis
Crenicichla sp.
Crenicichla strigata
Geophagus altifrons
Heros sp.
Retroculus lapidifer
Retroculus sp.
Satanoperca jurupari
Série ATHERINOMORPHA
Order CYPRINODONTIFORMES
Sub-order APLOCHEILOIDEI
Family RIVULIDAE

LISTS OF SPECIES

Rivulus cf. zygonectes
Rivulus sp.
Familia POECILIIDAE
Pamphorichthys araguaiensis
Order BELONIFORMES
Sub-order BELONOIDEI
Superfamily Scomberesocoidea
Family BELONIDAE
Pseudotylosurus microps
Order SYNBRANCHIFORMES
Sub-order SYNBRANCHOIDEI
Family SYNBRANCHIDAE
Synbranchus marmoratus
Order TETRAODONTIFORMES
Family TETRAODONTIDAE
Colomesus asellus
Order PLEURONECTIFORMES
Family ACHIRIDAE
Hypoclinemus mentalis