

Metadata description of the Ictioplata database: a fish distribution database for the La Plata drainage basin

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Keywords

species distribution, Parana river, Paraguay river, Uruguay river

Short description of the dataset/summary

The La Plata basin, including the Parana, Paraguay and Uruguay river drainages, is the second most important in South America with more than 3,000,000 km², providing natural resources to a population of 165 million people, including five countries. Because of its size and international configuration, no initiative has yet intended to compile the distribution of the fish fauna. The objective of the Ictioplata database is to fill this gap, offering the most complete possible scientific base to study fish distribution patterns of the La Plata basin. The database is built on a Geographic Information System (GIS) including data from different sources:

- A. Information extracted from the literature (published articles, books, gray literature).
- B. Data available from museums/collections and universities.
- C. Data extracted from online databases such as GBIF, FishNet, SpeciesLink and IABIN, among others.

The database already provides a comprehensive overview of the fish diversity and distribution in the "Rio de la Plata" drainage basin, with nearly 100.000 occurrence records from 12 data sources that all together regroup nearly 70 museum and university collections (see appendix), complemented with over 800 bibliographic references. These records range from 1829 to 2016 for over 1450 native and 24 exotic species.

At this stage (December 2019), the database is available upon request and will be available in early 2020 to download, along with futur updated versions, from the website www.freshwaterfishdata.earth.

General information

dataset entry ID:	FWM_25
name of the dataset:	
full name of the dataset:	Ictioplata: a fish distribution database for the La Plata drainage basin
dataset short name:	Ictioplata
type of dataset:	species distribution data
data type:	point data/observation data
science keywords according to GCMD:	
topic:	Biosphere, Biological Classification
ISO topic category according to ISO 19115:	
	Biota, Environment, Inland Waters
INSPIRE keywords according to GEMET:	
	Species distribution
own science keywords:	freshwater fish, species distribution, Rio de la Plata
funding:	Financial support was offered by the Laboratoire Evolution et Diversité Biologique is part of the French Laboratory of Excellence projects "LABEX TULIP" and "LABEX CEBA" (ANR-10-LABX-41, ANR-10-LABX-25-01) and the Museo de Ciencias Naturales "Antonio Scasso" (Argentina)

Technical and administrative specifications

data format:	others/specify
others/details:	PostgreSQL
operating system:	all operating systems
data language:	English
current access level:	web (public)
web address:	www.freshwaterfishdata.earth
currently available through GBIF :	no
exchange planned:	yes
data in data repository:	no
specify repository:	A data portal is under construction (www.freshwaterfishdata.earth) and we plan to also send it to GBIF and the Freshwater Biodiversity Data Portal
Do you plan to publish the data on the Freshwater Biodiversity Data Portal:	yes
update level:	update planned

contact details:

metadata contact person:	
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institution:	IRD
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scientific contact person:	
first, last name:	Pablo Tedesco

email: pablo.tedesco@ird.fr

Intellectual property rights and citation

dataset creator (data compiler):

contact name: Pablo Tedesco
contact email: pablo.tedesco@ird.fr
contact institution: IRD

data contributors to/owners of this dataset:

multiple
number: 5

data contributor/owner 1:

contact name: Pablo Tedesco
contact email: pablo.tedesco@ird.fr
contact institute: IRD

criteria for using this part of the dataset:

The dataset is publicly available (data portal, data archive) and can be used without restrictions, but must be acknowledged and cited correctly.

data contributor/owner 2:

contact name: Céline Jézéquel
contact email: celine.jezequel@ird.fr
contact institute: IRD

criteria for using this part of the dataset:

The dataset is publicly available (data portal, data archive) and can be used without restrictions, but must be acknowledged and cited correctly.

data contributor/owner 3:

contact name: Jorge Liotta
contact email: jorgerliotta@gmail.com
contact institute: Museo de Ciencias Naturales

criteria for using this part of the dataset:

The dataset is publicly available (data portal, data archive) and can be used without restrictions, but must be acknowledged and cited correctly.

data contributor/owner 4:

contact name: Remy Bigorne
contact email: remy.bigorne@ird.fr
contact institute: IRD

criteria for using this part of the dataset:

The dataset is publicly available (data portal, data archive) and can be used without restrictions, but must be acknowledged and cited correctly.

data contributor/owner 5:

contact name: Thierry Oberdorff
contact email: thierry.oberdorff@ird.fr
contact institute: IRD

criteria for using this part of the dataset:

The dataset is publicly available (data portal, data archive) and can be used without restrictions, but must be acknowledged and cited correctly.

citation of this dataset:

author(s): Jézéquel, C., Bigorne, R., Liotta, J., Oberdorff, T. & Tedesco, P.A.
title and journal (name, number, pages):

Ictioplata: a fish distribution database for the La Plata drainage basin.

year: <http://www.freshwaterfishdata.earth>
2020

citation of the metadata:

author(s): Jézéquel C., Bigorne R., Liotta J., Oberdorff T. & Tedesco P.A.

title and journal (name, number, pages):

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year: 2020

doi: <https://doi.org/10.15504/fmj.2020.46>

General data specifications

regional coverage of the dataset:

spatial extent of the dataset: catchment

continents: South America

spatial extent (bounding coordinates):

southernmost latitude [°]: -40

northernmost latitude [°]: -14

westernmost longitude [°]: -67

easternmost longitude [°]: -43

countries: South America: Argentina, Bolivia, Brazil, Paraguay, Uruguay

freshwater ecoregions of the world (FEOW) according to [WWF](#):

South America: Chaco, Lower Parana, Lower Uruguay, Paraguay, Upper Parana, Upper Uruguay

ecosystem type: rivers, lakes/ponds, wetlands

covered timeframe: 1830 - 2016

Site specifications

coordinate system/grid data: latitude/longitude, format: DD
projected, others others: WGS84

datum (e.g. WGS84): WGS84

grid data available: no

site coding:

site coding available: yes, alphanumerical

number of digits: 7

example: IC00852

number of sites: >1000

exact number of sites: 7000

Biological data

biological data origin: from sampling,

general compilation,

comments: The database is built on a Geographic Information System (GIS) including data from different sources:

A. Information extracted from the literature (published articles, books, gray literature).

B. Data available from museums/collections and universities.

organism group addressed: C. Data extracted from online databases such as GBIF, FishNet, SpeciesLink and IABIN, among others.
fish

Sample resolution

fish:

taxonomic resolution:

level: species
percentage of species level data: 100

taxonomic coding:

taxalist according to: FishBase & California Academy of Sciences-Catalogue of Fishes
reference(s): Fricke, R., Eschmeyer, W. & Van der Laan, R. (2018). Catalog of Fishes: Genera, Species, References.
<http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>

Froese, R. & Pauly, D. (2018). FishBase. World Wide Web electronic publication. www.fishbase.org

sample specifications:

specification of method(s) used for sampling and sorting:

These are the fields contained in the database:

Field/Definition
ID ICTIO/Unique code of occurrence
Class/Name of the class
Order/Name of the order
Family/Name of the family
CDFB16/Unique code of the species in Fishbase
OGEN/Name of the genus
OESP/Name of the species
Species/Complete name of the species
TYPE/Type de species (holotype, etc...)
CAPDAY/Day of capture
CAPMONTH/Month of capture
CAPYEAR/Year of capture
COLLEC/Collecting person
IDENTI/Identification person
LTYPE/Type of length
LMM/Length in mm
PROV/Organism providing the information
BIBLIO/Bibliographic reference
REF/Origine of the data
COLMUS/Code of the museum
CDCOLLEC/Collection type code
NBCOLLEC/Collection number
IDGBIF/GBIF identification
TRANSLOC/Exotic status of the species
LOCALITY/Locality information of the capture
ISO3/Code ISO3
FKST/Unique site code

OX_dd/Longitude
OY_dd/Latitude
OHYNAM/Name of the hydrologic system
IDGEON/Geonames code
OHYTYPE/Habitat type
HYINTER/Intermitency of the habitat
OBANAM/Name of the drainage basin
CD_BV1/Principal subdrainage code
OS_BV1/Principal subdrainage name
CD_BV2/Secondary subdrainage code
OS_BV2/Secondary subdrainage name
TYPDAT/ Data type (point or subdrainage)
scientific name/Species name in the original data source
DateUpdate/Date of last modification

Other specifications

GIS layers, shape files related to the dataset:

species distribution
hydrological information (as HydroBASINS)
catchments, river-sub-basins

availability of photos:

no

availability of maps:

yes

quality control procedures:

Were any quality control procedures applied to your dataset?

yes

quality control protocols and comments:

To avoid any duplication when integrating data from different sources, all duplicates are identified and excluded during import by either verifying unique identifiers for occurrences (or fields that should constitute unique identifiers when considered together; e.g. institute + collection + collection number) or based on sampling details in combination with the geographical coordinates of the data.

Where available, details on provenance, citation, along with a modification/"last updated" timestamp (e.g. only available for GBIF and SpeciesLink) are systematically documented for the retained records. In addition, during import, each record is systematically checked for reliability and consistency, using the FishBase Consortium database, and the California Academy of Science's Catalog of Fishes, as nomenclature authority files. During the process of building the database, a taxonomic checklist work is achieved to validate all species actually present in the La Plata drainage basin.

Acknowledgements

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Appendix

List of consulted online databases and museum/university collections that helped to build the Ictioplata database

Abbreviation	Full name
FondaOga	Collection de la Fundación Óga, Argentina
GBIF	http://www.gbif.org
Bibliography	Bibliography
Fishnet2	http://fishnet2.net/
ColleRinguelet	Catologo de la colección ictiológica del Instituto de Limnologia "Dr.Raul A.Ringuelet"
SpeciesLink	http://smlink.cria.org.br/
PUCRS	http://webapp.pucrs.br/colecoesMCT
NeoDATIII	Collection MNRJ UFRJ
Museo NoelKempff	Museo de Historia Natural Noel Kempff Mercado
SiBBr	http://www.sibbr.gov.br/
iDigBio	https://www.idigbio.org/
AM	Australian Museum, Australia
AMNH	American Museum of Natural History, New York,USA
ANSP	Academy of Natural Sciences, Drexel University, Philadelphia, USA
AUM	Auburn University Museum, USA
CAS	California Academy of Sciences, San Francisco, USA
CBF	Coleccion Boliviana de Fauna, Bolivia
CENPAT-CONICET	Centro Nacional Patagonico - CONICET, Argentina
Conservation International	Conservation International
CPUFMT	Coleção de Peixes da Universidade Federal de Mato Grosso , Brazil
CTL	http://plazi.org/
CUMV	Cornell University Museum of Vertebrates, USA
Diveboard	http://www.diveboard.com/
DZSJRP	Coleção de Peixes DZSJRP, Universidade Estadual Paulista - Campus de São José do Rio Preto, Brazil
FishBase	http://fishbase.mnhn.fr
FML	Fundacion Miguel Lillo, Argentina
FMNH	Field Museum of Natural History, Chicago, Illinois, USA
F-OGA	Fundación Óga, Argentina
ILPLA	Museo de La Plata, Instituto de Limnologia, La Plata, Argentina.
iNaturalist	http://www.inaturalist.org/
INHS	Illinois Natural History Survey, USA
INIDEP	Instituto Nacional de Investigacion y Desarrollo Pesquero, Argentina
INPA	Instituto Nacional de Pesquisas da Amazônia, Brazil
ISH	Institut fuer Seefischerei (Johann Heinrich von Thünen-Institut), Germany
KU	University of Kansas Biodiversity Institute, USA
LSUMZ	Louisiana State University, Musuem of Zoology, USA
MACN	Museo Argentino de Ciencias Naturales, Bernardino Rivadavia, Capital Federal, Argentina

Abbreviation	Full name
MBML	Museu de Biologia Professor Mello Leitão, Santa Teresa, Brazil
MCP	Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil
MCZ	Museum of Comparative Zoology - Harvard University, USA
MHNCI	Museu de História Natural Capão da Imbuia, Brazil
MHNNKM	Museo de Historia Natural Noel Kempff Mercado, Bolivia
MLP	Museo de La Plata, Argentina
MMUM	University of Manchester Museum, Zoology & Entomology, UK
MNHN	National Museum of Natural History, Paris, France
MNHNP	Museo Nacional de Historia Natural del Paraguay, Paraguay
MNRJ	Universidade Federal do Rio de Janeiro, Museu Nacional, Rio de Janeiro, Brazil
MPEG	Museu Paraense Emilio Goeldi, Brazil
MSB	Museum of Southwestern Biology, USA
MUNHINA	http://plazi.org/
MZUEL-PEIXES	Museu de Zoologia da Universidade Estadual de Londrina - Coleção de Peixes, Brazil
NHMUK	National History Museum, London, UK
NRM	Naturhistoriska Riksmuseet, Stockholm, Sweden
OS	Oregon State University, USA
OSUM	Museum of Biological Diversity, The Ohio State University: Ohio State University Fish Division, USA
PBDB	Marine Science Institute, UCSB, USA
RBINS	Royal Belgian Institute of Natural Sciences, Belgian
ROM	Royal Ontario Museum, Canada
SAIAB	South African Institute for Aquatic Biodiversity, South Africa
SAMS	iziko South African Museum - Shark Collection, South Africa
SIUC	Research Museum of Zoology, Southern Illinois University at Carbondale, USA
SMF	Natur-Museum und Forschungs-Institut Senckenberg, Frankfurt-am-Main, Germany.
SNSB-ZSM	Staatliche Naturwissenschaftliche Sammlungen Bayerns: The Fish Collection at the Zoologische Staatssammlung München, Germany
SNSD	Senckenberg Museum, Frankfurt, Germany
UAMZ	University of Alberta Museum of Zoology, Canada
UCZM	University Museum of Zoology, University of Cambridge, UK
UEM	Universidade Estadual de Maringá, Brazil
UF	Florida Museum of Natural History, USA
UFES	Universidade Federal do Espírito Santo, Brazil
UFRGS	Universidade Federale do Rio Grande do Sul, Departamento de Zoologia, Porto Alegre, Rio Grande do Sul, Brazil
UFRJ	Universidade Federal Rural do Rio de Janeiro, Brazil
UMMZ	University of Michigan Museum of Zoology, Ann Arbor, Michigan, USA
UNICAMP	Universidade Estadual de Campinas, Brazil
UNT	Coleção de Peixes do Laboratório de Ictiologia Sistemática da Universidade Federal do Tocantins, Brazil
USNM	National Museum of Natural History, Washington D.C., USA

Abbreviation	Full name
USP	Universidade de São Paulo, Museu de Zoologia, São Paulo, Brazil
USPRP	Universidade de São Paulo Ribeirão Preto, Brazil
ZMA	Universiteit van Amsterdam, Zoologisch Museum, Netherlands
ZSM	Zoologische Staatssammlung München (SysTax), Germany