

Catalog of the Fishes of Colombia

Programme: BID
Project ID: BID-CA2020-030-USE
Project lead organization: Universidad Nacional de Colombia
Project implementation period: 1/7/2021 - 30/6/2023
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Narrative Midterm report

Executive Summary

An updated checklist of the Freshwater Fishes of Colombia was published at the end of 2021, representing a major contribution to the backbone of the Catalog. To date we have assigned 84% of these species to authors to complete the species pages and 17% have been completed. Data for an additional 15% of species (endemics) will be reused from SiB Colombia.

Significant progress has been made on the checklist of Pacific fishes of Colombia which will be submitted by June 30th, as planned. It includes 844 species. The checklist of Caribbean fishes will be finalized in August, and the dataset submitted to GBIF by December. It includes approximately 1355 species.

The back end of the database (author interface) has been finalized and will be released to authors by June 5th. This tool will streamline data input for the remaining species and accelerate the completion of species pages.

Monitoring and Evaluation: We are in regular contact with our editors, authors and partners at government agencies. The Caribbean checklist is behind schedule, but a new, realistic timeframe has been agreed upon by the editors.

Additional changes: we had budgeted €10,000 to fund travel for specialists to museum collections in 2022. We are currently making arrangements for a specialist from Brazil to visit six collections in Colombia between July and August but there will be funds leftover. As a contingency plan we stated that some or all of these funds could be used for specimen digitization. We would like to hire technical staff to database a part of the ichthyological collection of the Universidad del Valle, an especially important repository for species from the Pacific region. The resulting dataset will be an additional deliverable published in SiB Colombia and GBIF.

Progress against milestones

Has your project published at least one dataset through GBIF.org?: Yes

Dataset published:

Dataset	DOI
Lista de especies de peces de agua dulce de Colombia / Checklist of the freshwater fishes of Colombia	doi.org/10.15472/numrso

Has at least one member of your project team received certification following the BID capacity enhancement workshop?: No

Rationale: This workshop was not mandatory for Data Use project participants, but one of our team members, Henry Agudelo, did participate. He was not able to complete the assignments due to a family tragedy. Attached are certificates of attendance for project PI Lauren Raz and co-PI Henry Agudelo in the subsequent Data Processing and Assessing the Conservation Status of a Species workshops.

Activity progress summary

Establishment of the editorial committee and first action items - Finalized

Assignment of species - 16% of the freshwater species have not been assigned to any author; the editorial committee will assume responsibility for species pages of orphan taxa.

The marine species have not yet been assigned for completion of the species pages; the process of assignment will start after June 5th, which is when the interface for authors will be made available. We expect this tool will significantly accelerate the production of the species pages.

Data completion freshwater species - 17% of species pages have been completed so far and another 15% are in the process of migration (reuse of data currently available through SiB Colombia). Now that the user interface for authors is complete, we expect this activity to ramp up significantly.

Digital platform design - the back end of the database, including the interface for contributing authors, has been finalized and will be made available to all authors by June 5th. The delivery date was originally scheduled for November but a family tragedy affected the completion of this task. Screenshots of the tool are provided.

Review of collections - from late July till August 23, Dr. Flavio Lima will review the following collections, Barranquilla, UDEA, ICN, La Salle, Tolima, Sinchi. This activity is on schedule.

Compilation of photographs - around 3% of images have been generated de novo through the project. Agreements with 10 authors are being reviewed to include their images in the Catalog, and permissions and data sharing agreements are in the works. An initial meeting with the lead researcher for the CavFish Colombia took place to determine the integration between the CavFish Catalog and the Catalog of Fishes from Colombia. The CavFish is waiting for institutional resources to assign URLs to the images and facilitate the re-use of the pictures.

Uploading of data to the platform- the backbone for the freshwater species and Pacific species have been uploaded to the platform; the Caribbean species will be included in August. Content for the species pages will be contributed by the authors throughout the remainder of this year into early 2023, as scheduled.

The reuse of data on endemic species of Colombia is being processed by our data management staff in collaboration with personnel from SiB Colombia. We expected to complete this process in January, but the source dataset turned out to be highly unstructured, presenting interoperability challenges that are now being resolved. We expect to finalize the migration by July 2022.

Pacific Checklist publication - list is finalized and will be submitted for publication by the end of June, as scheduled.

Caribbean checklist publication - list will be finalized in August and integrated with the Catalog database for completion of the species pages. The final checklist dataset will be submitted to GBIF by the end of 2022. We had expected to submit this list earlier, but some of the authors required additional time. The editors are confident they will meet the August deadline.

Completed activities

Activity: Digital Platform design

Description: The front end of the Catalog is in development, but the back end now is complete and includes an interface for the authors and editors to enter and edit data.

Start Date - End Date: 21/7/2021 - 20/5/2022

Verification Sources: screenshots (see supporting documents)

Activity: Establishment of the editorial committee and first action items

Description: The Editorial Committee was established in 2017 and includes six recognized ichthyologists from the Instituto de Ciencias de Colombia – ICN of the Universidad Nacional de Colombia (UN), Instituto Alexander von Humboldt, Instituto de Investigaciones Marinas y Costeras

“José Benito Vives de Andrés”– INVEMAR, Universidad del Valle and The Academy of Natural Sciences of Drexel University. To date, the editorial committee has accomplished the following tasks: 1. Compilation of a list of researchers that will gather data to be featured in the catalog. 2. Successfully contacted 57 researchers from the list of which 53 have confirmed their participation. 3. Design of the data chart and forms to gather information. 4. Incorporation of all species from the Checklist of the Freshwater Fishes of Colombia: a Darwin Core Alternative to the Updating Problem (DoNascimento et al, 2017) into the database for completion. 5. Incorporation of all species from the Checklist of the Marine Fishes of Colombia (Tavera et al., in prep) into the database for completion.

Start Date - End Date: 1/6/2017 - 15/12/2020

Verification Sources: List of authors and letter of commitment from the Editorial committee was submitted with the original grant application.

Activity: Assignment of species

Description: This activity should be complete by the time this report has been reviewed. Freshwater species have been assigned and marine species will be assigned in the coming weeks. The editorial committee will assume responsibility for any orphan species.

Start Date - End Date: 1/10/2020 - 10/6/2022

Verification Sources: Once the marine species have been assigned, we can make a list available, but all attributions will be included in the final version of the Catalog.

Activity: Data completion freshwater species

Description: Although this activity is not technically complete yet, it is close. There are currently 29 authors working on the first 500 species. After the additional assignment of species, the process will continue to complete all 1616 freshwater species.

Start Date - End Date: 1/7/2021 - 30/6/2022

Verification Sources: We can provide a preliminary download of content from the Catalog database upon request but the completed Catalog is the deliverable. The Checklist of freshwater fishes is the backbone for this part of the Catalog, and is included among the deliverables for this report (doi.org/10.15472/numrso).

Activity: Pacific fishes checklist publication

Description: While this activity is technically not complete, it is very close. It consists of a verified checklist of Pacific marine fish species including both continental and insular areas. La Universidad del Valle has traditionally worked in this remote and forgotten region for over 50 years and has the biggest fish collection of the area. The checklist covers all marine fishes in this region which includes three classes: Class Myxini, Class Chondrichthyes, Class Osteichthyes. Total 844 spp.

Start Date - End Date: 1/1/2022 - 30/6/2022

Verification Sources: The dataset will be available by the end of June and at that time we will inform the BID team.

Activity: Review of Colombian ichthyology collections

Description: During the data completion phase, some species have been flagged as questionably distributed in Colombia. A specialist will review the relevant museum records to make sure that all the species listed in the Catalog occur in Colombia. While this revision has not yet taken place, it is imminent. A visit to six Colombian collections by Brazilian ichthyologist Dr. Flavio Lima has been confirmed for July-August 2022.

Start Date - End Date: 25/7/2022 - 30/8/2022

Verification Sources: We will be able to provide airline tickets and other documentary evidence of the visit

Report on Deliverables

Deliverables progress summary

The updated Checklist of Freshwater fishes was published here: doi.org/10.15472/numrso. It includes 1616 species and updated synonymy.

The Digital Platform to host the Catalog of the Fishes of Colombia refers to the backend database with interface for authors and editors. It is now complete.

The Checklist of the Colombian Marine Fishes is now complete, with 844 species. It will be submitted for publication at the end of June, which is consistent with the completion date projected in our first interim report.

A meeting was held with our partners at SiB to coordinate the reuse of data for the endemic species, currently available via the Catálogo de la Biodiversidad online portal (stored in MONGODB). These species pages were produced by the same authors who are contributing to the Catalog of Fishes of Colombia. At the meeting technical details were worked out to ensure interoperability and the migration is underway.

There is no movement yet on the occurrence dataset from Universidad del Quindío. We need to follow up with the curator.

In April of this year a new dataset was published by Universidad de la Salle (<https://doi.org/10.15472/umnba4>). This collection will be visited by specialist Flavio Lima in July-August, and as a result of his visit, we expect a significant number of new determinations, as half of the collection is currently identified only to family level. We will help Universidad de la Salle update this dataset following the visit.

We expect to publish an additional occurrence dataset through a collaboration with the Universidad del Valle, which is the most important repository of fish specimens from the Pacific region. The travel costs for museum visits will require less money than was originally estimated and since the contingency plan for this budget item was to invest in specimen digitization, that is what we plan to do. We should be able to hire a database technician for at least five months and the resulting dataset of several thousand records will be shared through GBIF and SiB Colombia.

Progress towards deliverables

Deliverables - Project planning phase

Checklist of freshwater species

Description: Checklist updated on February 2022 to include 1616 species of freshwater species distributed in continental water of Colombia

% complete: 100%

Status update: published

Sources of verification: doi.org/10.15472/numrso

Planning workshop

Description: Initial workshop to consult with partners on development of platform and APIs

% complete: 100%

Status update: the workshop took place in August 2021 and was included in the first interim report

Sources of verification: see first interim report for documentation

Digital platform to host the Catalog of the Fishes of Colombia

Description: Structured database and interfaces for including taxonomic and ecological information for the fishes of Colombia (marine and freshwater) as well as images, geographic distribution, and information relevant to Colombian collections with material of each species.

% complete: 100%

Status update: Back end finalized and will be released to authors during the first week of June

Sources of verification: The current version found in <http://168.176.8.223/es/authors-admin/> (also see attachments)

Checklist of Colombian Pacific marine fish containing 800-900 species

Description: Verified checklist of Pacific marine fish species including both continental and insular areas. We aim to cover all marine fishes in this region which includes three classes Class Myxini, Class Chondrichthyes, and Class Osteichthyes. This list forms part of the backbone of the Catalog.

% complete: 95%

Status update: The list is now complete but has not yet been published in GBIF. The expected publication date is June 30th.

Sources of verification: Once the list is published we will provide the link

Checklist of Colombian Caribbean marine fish containing 1400-1500 species

Description: Verified checklist of Caribbean marine fish species including both continental and insular areas. We aim to cover all marine fishes in our region which includes three classes Class Myxini, Class Chondrichthyes, and Class Osteichthyes

% complete: 90%

Status update: This list currently includes 1355 species, slightly less than our original estimate. The list will be incorporated into the backbone of the Catalog in August and published by December 2022.

Sources of verification: a link will be provided at the time of publication.

Deliverables - Project data mobilization phase

Ichthyology collection University of Quindio

Dataset type: Occurrences

Dataset scope: Specimen dataset from University of Quindio representing freshwater species occurrences in the Central Cordillera. Not sure yet how many records we can expect.

Number of records: 1,000

Data holder: Universidad del Quindio

Data host institution: UNAL

% complete: 0%

Status update: This is a new dataset that we did not include in the original proposal. The curator is very interested in publishing the data in GBIF and SiB Colombia. The records are in Excel and we need to review them and bring them into Darwin Core compliance. There has been no movement since the last report. We need to follow up with the curator.

DOI:

Expected date of publication: 2023-03-31

Ichthyology Collection Universidad del Valle

Dataset type: Occurrences

Dataset scope: Specimen dataset from University of Valle representing freshwater species occurrences in Colombia. No concrete estimate yet of number of records, but likely to be several thousand.

Number of records: 3,000

Data holder: Universidad del Valle

Data host institution: UNAL

% complete: 0%

Status update: We expect to begin databasing in the coming months

DOI:

Expected date of publication: 2023-03-31

Checklist of Fishes from Colombia

Dataset type: Checklist

Dataset scope: a list of all fish species (marine and freshwater) occurring in Colombia including their taxonomic status, ecological data, and conservation status in the country. At time of proposal submission 3794 species were included. This number is expected to change and an estimated number of records is provided below

Number of records: 3,815

Data holder: ACICIOS, UNAL

Data host institution: UNAL and SiB Colombia

% complete: 30%

Status update: Backbone data for freshwater fishes and Pacific marine fishes uploaded; Caribbean marine fish backbone to be uploaded in August. Descriptive content currently uploaded for 15% of taxa, an ongoing process.

DOI:

Expected date of publication: 2023-05-01

Checklist of Fishes from Colombia

Dataset type: Occurrences

Dataset scope: records of museum specimens to support distribution of marine fish species included in the Catalog. Records for freshwater species already exist. The marine data will be published here for the first time.

Number of records: 2,260

Data holder: ACICTIOS and Universidad Nacional de Colombia

Data host institution: UNAL and SiB Colombia

% complete: 15%

Status update: specimen digitization is underway at ICN (UNAL)

DOI:

Expected date of publication: 2023-03-31

Deliverables - Project evaluation phase

Communications and visibility

During this event, the editorial committee will present an update on the project as well as a demonstration of the backend of the Catalog for the South American community of ichthyologists with the aim of training existing authors and recruiting new ones to contribute content. This avenue also will allow us to make the project more visible within the scientific community.

Monitoring and evaluation

Monitoring and evaluation findings

The delivery date for the backend of the Catalog was not met, due in part to a tragedy in the family of one of the PIs. A downstream effect of this delay was that the authors did not have access to the content editing tool for the species pages. Now that the backend has been completed we expect a significant increase in production in the coming months. The last remaining element of the backbone, the Caribbean marine fishes, was initially scheduled for completion before the Pacific dataset, but it is a larger dataset with many authors, some of whom required additional time to review their respective sections. The editor has guaranteed an August delivery date, which gives us enough time to populate the content fields. All contributing authors remain engaged and we expect to deliver the fully populated Catalog on schedule.

Since the previous report we have primarily focused our efforts on development of the backend of the Catalog and the generation of backbone and content data, but we are in continued discussions with our partners in government about data sharing and in the next semester we will be working more intensively on API development. This is an ambitious project with many components, but the responsibility for project management is being shared among a core team of three PIs who work well together and we also have a graduate student assisting with management tasks. The opportunity to include additional occurrence datasets (U. Quindio, U. Valle, U. de la Salle) is an unexpected benefit that will require no additional resources and will increase the project's impact. The Ichthyology community is united behind the project and we look forward to sharing our preliminary results at the upcoming Colombian Ichthyology Congress.

Impact of COVID-19 pandemic on project implementation

To date Covid-19 has created some delays in the delivery of the Caribbean checklist, due to illness of some contributors, but fortunately all are now healthy and a new timeline has been agreed upon.

GBIF leads the Biodiversity Information for Development (BID), a programme funded by the European Union. The programme provides supplementary support for activities addressing the needs of regional researchers and policymakers through mobilization and use of biodiversity data.

