

Collections-based data for conservation actions: engaging decision-making actors to save globally threatened epiphytes in Colombia

Programme: BID

Project ID: BID-CA2020-047-USE

Project lead organization: Fundación Jardín Botánico Joaquín Antonio Uribe de Medellín

Project implementation period: 1/9/2021 - 28/2/2023

Report approved: 15/9/2022

Narrative Midterm report

Executive Summary

This project will contribute to the accomplishment of the policy frameworks in Colombia for conserving epiphytes and their floral visitors, which have identified the need to increase knowledge and assess the extinction risk of these groups of species. During this phase, we have focused on mobilization and cleaning the data sets to accomplish Darwin Core criteria. To the date, we have accomplished a systematization process for approximately 27.598 records corresponding to 3.350 taxa (6.585 records at JAUM, 10.913 for HUA, 4.239 for COL and, 2.000 FMB, 3.860 for CUVC).

We have made progress in the extinction risk assessment process; we have elaborated a workflow to this process (Annex 1). With the group of plant families' specialists, we have selected up today nearly 300 species based on at least one of three criteria proposed and agreed by specialist of each taxonomic groups (a) endemic species of Colombia, b) species important for their use or their detailed knowledge at the taxonomic level and/ or c) expert criteria). For each species we have compiled and shared all records with each plant specialist. At this point, specialists, are sending us feedback to check the database or specific collections at herbarium. We have been in constant communication with Carolina Castellanos and Cristina Lopez-Gallego CoChair - Colombian Plant Specialist Group of IUCN to validate the procedure and format to accomplish IUCN requirements (Annex 4 and 5). To monitor our project progress, we have a weekly progress report meeting. Additionally, our work team records their progress weekly, thus allowing us to evaluate the goals and adjust details. We do not detect changes that must be implemented.

Progress against milestones

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

Dataset published:

Dataset	DOI
Herbario Joaquín Antonio Uribe de Medellín (JAUM)	https://doi.org/10.15472/b7ifs4

Has at least one member of your project team received certification following the BID capacity enhancement workshop?: Yes

Name of the workshop participant: Jenifer Calderon

Certification obtained: Advanced Badge

Report on Activities

Activity progress summary

Regarding with activity 1. (Analysis of the information resources required to address the policy framework and decision need to protect epiphyte) and activity 2. (To assess which biodiversity data could become accessible through this project) the gap-analysis and workflow was determined to accomplish a high-quality level of data sets. The gap analysis has allowed us to understand where the data mobilization gaps were and guides us in directing the efforts of mobilization. According with the plan, the mobilization has been prioritized for those families with little or no systematization at each herbarium and the cleaning of the databases following the directives to effectively publish the data (Annex 2 and 6 gap analysis document). In addition, we have established a workflow with a team of collaborators (specialist taxonomists) that will allow us to monitor progress in assessing the risk of extinction of prioritized species.

Regarding to activity 3. (A data mobilization phase) we have successfully carried out the process of systematization and cleaning of data in the herbaria (JAUM, HUA, COL, FMB and CUVC) for a total of 27.597 records (3.350 species). Up to now databases have been cleaned up in for these families: Araceae, Aspleniaceae, Bromeliaceae, Cyclanthaceae, Dryopteridaceae, Gesneriaceae, Hymenophyllaceae, Lomariopsidaceae, Oleandraceae, Orchidaceae, Piperaceae, Polypodiaceae, Hygrophoraceae, Peltigeraceae, Lobariaceae. For JAUM a total of 6.585 epiphyte records of 1.599 species (74 % of the records have coordinates, of which 2.124 coordinate records were reconstructed). In CUVC, 3.860 records of 1.021 species (50 % of the records have coordinates, 1.032 records have been reconstructed). As for HUA, 10.912 epiphyte records of 1.868 species (35 % of the records have validated coordinates). National herbaria, COL, 4.239 epiphyte records of 1.230 species (27% of the records have validated or reconstructed coordinates). Regarding taxonomic quality, for JAUM we achieved a resolution up to species of 5.199 records, 1334 up to genus and 16 in family. In CUVC, 3.418 up to species, 397 in genus and 33 in family, COL with 4.108 records in species and 131 in genus and HUA records up to species 8.678, genus 2.063 and family 22 records.

More than 27 thousand records have been systematized during the data Mobilization phase digitization of epiphytes (e.g., lichens, mosses, ferns, and angiosperms) deposited in selected herbaria in Colombia, and mounting and digitization of floral visitors (e.g., bees, beetles) deposited in IAVH-E, a first data set (from JAUM) have been published in GBIF (and 4 more are in the process during July and August 2022).

An information development phase, in which existing, and newly mobilized data are processed into information resources fit for the purpose of user needs, including digitalizing herbarium text information and extinction risk assessments for the botanical families is in process of species and records verification and validation by experts. The Extinction Risk Assessment have been developed in collaboration with IUCN Colombian Plant Specialist Group. We have elaborated a workflow to this process (Annex 1). With the group of specialists (Cyclanthaceae, Araceae, Gesneriaceae, Piperaceae and ferns Dryopteridaceae, Lomariopsidaceae, Oleandraceae and Polypodiaceae), and lichens: (Hygrophoraceae, and Lobariaceae -now Peltigeraceae-). We have selected a preliminary set of species based on three criteria proposed and agreed by all. We have shared all records. At this point, specialists, are sending us feedback to check the database or specific collections at herbarium (see progress in Annex 4 and 5).

Webinar with global specialists on epiphytes addressing extinction risk for the selected families have been replanted to be hold before the Colombian Botanical Conference hold in November. After the webinar a workshop will be held to integrated data solutions into policymaking process - Producing a policy brief witting process.

For conducting an outreach campaign in social networks to intensively promote epiphytes conservation and present our project for a wide audience, we have recently produced short videos that will be immerse in a transmedia proposed (Annex 4).

Completed activities

Activity: Analysis of the information resources required to address the policy framework and decision need to protect epiphytes

Description: resources required and consultation of the institutions that make up the national environmental system to identify biodiversity information and primary data needs

Start Date - End Date: 1/11/2021 - 30/6/2022

Verification Sources: Annex 2

Activity: Assessment of which primary biodiversity data is already freely accessible (through GBIF), and which data could become accessible through a process of targeted data mobilization.

Description: Assessment of which primary biodiversity data is already freely accessible (through GBIF), and which data could become accessible through a process of targeted data mobilization.

Start Date - End Date: 1/11/2021 - 28/2/2022

Verification Sources: Annex 2

Activity: A capacity building session on biological collection data management for participating collections and other key collections in the country

Description: Online workshop to strengthen the capacities of biological collections in data management and publication were held

Start Date - End Date: 6/5/2022 - 6/5/2022

Verification Sources: Annex 3 and <https://youtu.be/BG5zEKUNcz4>

Report on Deliverables

Deliverables progress summary

For the Planning phase the Information sources analyses to protect epiphytes in Colombia. The gap analysis, based on information sources analyses required to address policy framework and decisions needed to protect epiphytes based on data availability, taxonomic scope, access, data gaps, data quality, and relationships to other environmental data have been completed in 90%. It has been discussed in the first months of 2022 with the project team and partners of the project, a workshop to validate and complement will be held at the end of 2022 (during the Colombian botanical congress November 2022).

For the Data mobilization phase, the activity "A data mobilization phase" we have accomplished the systematization of more than 27 thousand records of epiphyte species deposited in selected herbaria in Colombia, one data set of 6.585 have been published (JAUM). Datasets from HUA, CUCV, FMB and COL will publish during July and September 2022.

For the Data mobilization phase, the activity "A data mobilization phase" we have accomplished the systematization of more than 27 thousand records of epiphyte species deposited in selected herbaria in Colombia, one data set of 6.585 have been published (JAUM). Datasets from HUA, CUCV, FMB and COL will publish during July and September 2022. Dataset of Floral visitors of Colombia: Collection-based data for science and conservation have been completed in 30%.

Progress towards deliverables

Deliverables - Project planning phase

Deliverables - Project data mobilization phase

Epiphytes of Colombia: Collection-based data for science and conservation

Dataset type: Occurrences

Dataset scope: Within the framework of the BID-CA2020-047-USE project called "Data-based collections for conservation actions: involving decision makers to save threatened epiphytes in Colombia", financed by the information program on Biodiversity for Development (BID), we present our first dataset on epiphytic species from the Joaquín Antonio Uribe Herbarium of Medellín (JAUM). This dataset contains a total of 6.585 plant and lichen records, corresponding to the families: Araceae (1.514 records, 255 species), Aspleniaceae (185 records, 29 species), Bromeliaceae (36 records, 12 species), Cyrtanthaceae (265 records, 29 species), Dryopteridaceae (140 records, 53 species), Gesneriaceae (346 records, 71 species), Hymenophyllaceae (88 records, 28 species), Lobariaceae (one record, one species), Lomariopsidaceae (22 records, 5 species), Oleandraceae (5 records, 2 species), Orchidaceae (2.975 records, 972 species), Peltigeraceae (one record, one species), Piperaceae (453 records, 90 species), and Polypodiaceae (555 records, 100 species). The data set corresponds to 96% of records with epiphytic habit, the remaining 4% to records with hemiepiphytic and climbing habit. To date, 4.793 records have coordinates and the remaining 1.793 are in the process of georeferencing. The largest number of records are found in Antioquia with 57%, followed by the departments of Chocó (11%) and Santander (6%). The lowest percentage was presented in the departments of Casanare and Magdalena. In general, 75% of the records are part of the Andean

region, 18% to the Pacific, 2,6% to the Amazon, 1,8% to the Caribbean and 0,5% to the Orinoquia.

Number of records: 6,585

Data holder: Herbario Joaquin Antonio Uribe JAUM

Data host institution: Fundacion Jardin Botanico Joaquin Antonio Uribe de Medellin

% complete: 100%

Status update: 100

DOI: <https://doi.org/10.15472/b7ifs4>

Expected date of publication:

Epiphytes of Colombia: Collection-based data for science and conservation

Dataset type: Occurrences

Dataset scope: This dataset contains a total of 10.912 plant and lichen records, corresponding to the families: Araceae (1400 records), Aspleniaceae (623 records), Bromeliaceae (2744 records), Cyclanthaceae (191 records), Dryopteridaceae (356 records), Gesneriaceae (342 records), Hygrophoraceae (4 records), Hymenophyllaceae (36 records), Lobariaceae (11 records), Lomariopsidaceae (1 record), Oleandraceae (4 records), Orchidaceae (3460 records), Piperaceae (1559 records) and Polypodiaceae (181 records). 96% of the records show epiphytic habit, 4% hemiepiphytic and climbing habit. A large part of these records corresponds to collections made in Antioquia, Santander and Caldas.

Number of records: 10,912

Data holder: Herbario Universidad de Antioquia

Data host institution: Universidad de Antioquia

% complete: 90%

Status update: 90

DOI:

Expected date of publication: 2022-07-22

Epiphytes of Colombia: Collection-based data for science and conservation

Dataset type: Occurrences

Dataset scope: This dataset contains a total of 3.860 plant and lichen records, corresponding to the families: Araceae (922 records), Aspleniaceae (95 records), Bromeliaceae (652 records), Cyclanthaceae (180 records), Gesneriaceae (547 records), Hygrophoraceae (69 records), Hymenophyllaceae (65 records), Lobariaceae (16 records), Orchidaceae (486 records), Peltigeraceae (21 records), Piperaceae (317 records) and Polypodiaceae (490 records). 98% of the records show epiphytic habit, 0.5% climbing habit and 0.4% hemiepiphytic habit. Most of these records correspond to collections made in Valle del Cauca, Chocó, and Cauca.

Number of records: 3,860

Data holder: Herbario de la Universidad del Valle CUVC

Data host institution: Universidad del Valle

% complete: 90%

Status update: 90

DOI:

Expected date of publication: 2022-07-30

Epiphytes of Colombia: Collection-based data for science and conservation

Dataset type: Occurrences

Dataset scope: This dataset contains a total of 4.239 plant records, corresponding to the families: Araceae (544 records), Aspleniaceae (140 records), Bromeliaceae (1090 records), Cyclanthaceae (74 records), Dryopteridaceae (73 records), Gesneriaceae (474 records), Hymenophyllaceae (65 records), Lomariopsidaceae (5 records), Oleandraceae (3 records), Orchidaceae (1316 records), Piperaceae (292 records) and Polypodiaceae (163 records). 97% of the records show epiphytic habit and 2.9% climbing and hemiepiphytic habit. Most of these records correspond to collections made in Cundinamarca, Santander, and Vaupés.

Number of records: 4,239

Data holder: Herbario Nacional Colombiano COL

Data host institution: Universidad Nacional de Colombia

% complete: 80%

Status update: 80

DOI:

Expected date of publication: 2022-08-19

Deliverables - Project evaluation phase

Events

Taller para fortalecer las capacidades de las colecciones biológicas en el manejo y publicación de datos

Dates: 2022-05-06 - 2022-05-06

Organizing institution: Intitutoi Alexander von Humboldt and Jardin Botanico de Medellin

Country: Colombia

Number of participants: 20

Comments: Online workshop to strenghten the cappacities of biological collections in data management and publication <https://youtu.be/BG5zEKUNcz4>

Website or sources of verification: <https://www.gbif.org/es/event/e9d97d-9eaf-4d54-b1ea-0e6da92/taller-para-fortalecer-las-capacidades-de-las-colecciones-biologicas-en-el-manejo-y-publicacion-de-datos>

Communications and visibility

We have been in contact and have held two results progress meetings with the experts associated with the project, with them the prioritization of mobilization in each herbarium and the criteria for the evaluation of extinction have been defined. The results of the Gap analysis will be presented at the Colombian Ecology Congress between August 30 and September 2, 2022. The communication strategy will be activated in July /see videos that will be prometed in Annex 4.

Monitoring and evaluation

Monitoring and evaluation findings

Weekly meetings with the technical and professional team have allowed us to advance in the mobilization and evaluation phase as planned. Monthly meetings with the coordinating team with the IAvH have allowed us to coordinate the activities. Periodic meetings and consultations with Leonardo Buitrago have allowed us to resolve doubts and make decisions quickly.

Thanks to the commitment of the herbarium directors with the mobilization, expectations have been exceeded in some of the herbariums, which have supplied high quality of data sets with advanced cleaning, for example HUA and CUCV. Difficulties in systematization have been found when migrating from the cataloging software of each herbarium to the Darwin Core standard.

Thanks to our relationship with each herbaria director, we have found that there is currently a large amount of data (of plant species in general) in all herbaria that could be easily mobilized if they have the persons to do so.

Some activities have suffered delays or will be extended. Our outreach activities have suffered delays due to staff changes at MBG, however the video material has been produced and will soon be ready to start the outreach campaign. As well, Extinction risk assessments and producing distribution models for prioritized group of species activities will be extended to December 2022, due a delay on the hiring contract of one of the professional. Then the "A capacity building session for environmental authorities in the use of mobilized data" activity will be hold in February 2023, in order to present the Extinction risk assessment results. According to our experience, the months of December and January are not valid for convening meetings with public officials.

Impact of COVID-19 pandemic on project implementation

Apart from some medical disabilities (of a few days) of our staff, we did not have impacts associated with COVID-19.

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.

