

# FINAL ACTIVITY REPORT

## Regional capacity enhancement to Latin America by establishing Chile's node

*Guidelines on how to complete the activity report are included in italics. Please include sources of verification as links or annexes.*

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### 1. Executive summary

*Provide a brief explanation of the project and its implementation, the main capacity enhancement objectives achieved, lessons learned and conclusions.*

GBIF-Chile Node, is located in the Natural Resources and Biodiversity Division of the Ministry for the Environment of Chile. The period 2017-2019 has been a phase of exploration, organization, knowledge and networking for the Chilean Node. In this stage, the Technical Secretariat of the Chilean Node has focused on connecting partners at national level, through a series of bilateral meetings aimed at providing background to support the implementation of a National Node. The topics of those meetings were referred to environmental legislation, public policies and international agreements. Partner requirements are also being raised on, aspects that should be addressed in the implementation process of GBIF-Chile Node. In parallel, the Chilean Node will coordinate elaboration and implementation of a national strategy to strengthen biological collections, by 2020.

In this context, Chile applied to Capacity Enhancement Support Programme (CESP) of GBIF with project "Regional capacity enhancement to Latin America by establishing Chile's node", and awarded this fund. The project was supported by international partners that have active participation in the GBIF network -GBIF Argentina, GBIF Ecuador, GBIF Spain and SiB Colombia-, this project includes the participation of representatives from the Museo Nacional de Historia Natural (National Museum of Natural History, MNHN), Instituto de la Patagonia de la Universidad de Magallanes (Institute of Patagonia of the University of Magallanes), Herbario EIF de la Universidad de Chile (EIF Herbarium of the University of Chile), Sociedad de Botánica de Chile (Chilean Botanical Society), Colección Patricio Sánchez de la Pontificia Universidad Católica de Chile (Patricio Sánchez Collection of the Pontifical Catholic University of Chile), Museo de Zoología de la Universidad de Concepción (Zoology Museum

of the University of Concepcion), and Sistema de Biodiversidad de Aysén – SiB Aysén (Biodiversity System of Aysén).

The project considered an activity of mentoring in the Sistema de Información sobre Biodiversidad de Colombia (SiB Colombia) and a regional meeting that became an international workshop on data publication in Santiago, Chile, on April 2018.

In this first phase of project execution, a mentoring process had been carried out by SiB Colombia and GBIF Spain with some Chilean partners of the project, in order to learn about governance issues and data publishing processes in the international GBIF platform, as well as deepening on incentives to the publisher.

This first step has been very important to formation of a first consortium of national and international partners, in the framework of implementation of GBIF Chilean Node, and has also served to specify requirements of partners, aimed to organize the second meeting of the project, carried out on April 2018, on Santiago de Chile.

Due to the fact that several Node partners visiting SiB Colombia, it was possible to evaluate some aspects related to contents addressed during the meeting, like themes relevance, as well as various logistical aspects.

The second chapter of project was carried out on Chile with a workshop focused on transferring technical capabilities associated to data publication through GBIF.

The workshop convened more than 40 participants from academic institutions, public services, museums, foundations, students and service managers. The Workshop sessions were planned aiming to present the elements of public policy and environmental legislation that guide Chilean Government, and the scientific community obligations related to management of information on biodiversity, to highlight importance of having information for management and decision making, to learn about data quality tools and to review the data publication process in detail.

Real-time measurement instruments [Mentimeter] were applied during the Workshop to document the results and fulfillment of expectations of participants as they progressed through contents. Main recommendations were to facilitate post-workshop content access, to schedule longer workshops, to hold specific workshops by theme, for example, specifically on Darwin Core, on georeferencing or on IPT. Participants in general appreciated the relevance of Workshop, showed willingness to join as publishing partners, despite difficulties expressed in managing databases before publication, due to a lack of trained staff in biological collections.

In order to reach a successful implementation, one of the most important SiB Colombia coordinating team specific recommendation, is to have participants fully prepared in supporting the Chilean Node and replicate this activities and exercises with other national actors, so that the Chilean Node will have a team able to approach these issues and do not lost capabilities.

## 2. Contact information

*Provide the name, institutional affiliation, role in the project and contact details of the author(s) of the report.*

Representative	Affiliation	Role(s) in the project	Contact
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### 3. Project summary

*This section should provide readers with a good understanding of the project, from the original plans to the final implementation, highlighting:*

- *The capacity needs that instigated the project and how these have changed as a result of the project activities.*
- *The activities that have been completed at the time of writing the report, and those that are ongoing or pending (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.*
- *How the different partners in the project have contributed to its implementation.*

GBIF Chile began its reactivation activities on 2016, moment when it was noted that it is necessary to connect the ministerial staff of the Node with international community and, on the other hand, formally bring technical tools of data publication and enhance data quality to data publishing partners, whom are the ones who make possible the existence of the Node in Chile.

The project "Regional capacity enhancement to Latin America by establishing Chile's node", seeks to strengthen national capacity to integrate and provide free access to information about Chile's biodiversity.

The Project was presented by the Chilean node of GBIF to GBIF's Capacity Enhancement Support Programme (CESP) in 2017, with the support of GBIF Spain, GBIF Argentina, SiB Colombia and as a regional guest, GBIF Ecuador. The project began in June 2017 and is expected to be completed in June 2018. A fund was awarded for €20,000, with a Co Funding of €31,296.

The project's founder partners are the National Museum of Natural History of Chile (MNHN), an institution that, through its curatorial areas, houses one of the country's most important biological collections, with more than 600,000 specimens housed in its various areas. The transversal objective of the MNHN is to collect, research, conserved and disseminate Chile's natural heritage.

On the other hand, the Biological Collection Pavilion "Professor Edmundo Pisano" of the Patagonia Institute of the University of Magallanes, has as a natural and basic objective to constitute a reservoir of biological material collected in various sectors and ecosystems of the southern region of Chile, aiming to be a faithful witness of the biodiversity characteristic of the region. The Biological Collections Pavilion has more than 23,000 records organized thematically in a Marine Collection and a Terrestrial Collection.

Another partner is the EIF Herbarium at the University of Chile, founded by Federico Schlegel in 1966. Currently, EIF has about 12,000 specimens entered in the collection, plus another 5,000 in the process of entering; including all of Chile and approximately 60% of its

flora, an important part of this collection is the representation of native woody species and forest interest.

For its part, the Chilean Botanical Society is a strategic partner, since it allows the Chilean Node to establish links with the main botanicals and collections of the country.

Another relevant partner of the project is the Patricio Sánchez Collection of the Pontificia Universidad Católica de Chile. This collection was created in 1960 by Professor Patricio Sánchez Reyes, who was professor of Evolutionary Biology at Faculty of Biological Sciences. Prof. Sánchez, motivated by his interest in the study of zoological diversity and - according to his own writing- "to serve as a nucleus for the study of nature in Chile", created the "Sala de Sistemática" (Systematics Hall), today a scientific collection that bears his name. It was initially intended to house marine invertebrates; however, in recent years other taxonomic groups such as fish, amphibians, reptiles, and small mammals have been incorporated. The botanical section of the collection, which includes a vast representation of seaweed and terrestrial plants from Chile, deserves a special mention.

For its part, the Zoology Museum of the University of Concepción (MZUC-UCCC) is one of the most important in the country. It was created in 1955, with donated material by Ottmar Wilhelm, Jorge Artigas and André Hulot. Since then, it has grown thanks to the contributions of numerous expeditions and the acquisition of existing collections. The material in the museum is used for national and foreign scientific studies, as well as undergraduate and postgraduate theses. At present, this museum has more than half a million specimens representing 14,666 native and exotic species.

Finally, SiB Aysén, Aysén's Biodiversity System, is a multidisciplinary and interregional team that works collaboratively in the country's first Biodiversity Information System. The project, financed by the Regional Government of Aysén through the Regional Innovation Funds, represents a pioneering initiative at national and international level. The Aysén Region is a precursor in many respects, also in compliance with international agreements such as the Convention on Biological Diversity, by creating a unified repository of species information. The platform is intended to be a prototype that could be replicated in other regions, which could eventually be brought together in a national information system.

The project is expected to promote and encourage the movement of biodiversity data in the country and the region, providing specialized knowledge on biological data management, as well as improving its quality, access and use. Additionally, this project will foster collaboration among national and international initiatives related to biodiversity.

The capacity needs identified by Chile, according to the GBIF 2017 Work Program, are:

- The implementation plan for the Chilean GBIF Node, currently under development by the Ministry of Environment, indicates that the Node should be implemented in the period 2018 - 2020. Therefore, the biggest challenge for the Chilean GBIF Node is to successfully achieve the implementation of this project within that period. According to the above, the coordination unit of the Node is preparing the necessary arrangements in order to provide technical and administrative infrastructure that will facilitate the consolidation of a technical and scientific biodiversity data manager community. This community is made up of institutions, projects, and initiatives linked to biodiversity data, including the Government of Chile, and it should be aligned with national objectives in these matters, as well as accomplishing international commitments.
- The proposed workshop will provide an instance for the national scientific community to understand the importance of publishing data generated during research processes, as well as its relevance for the conservation of biodiversity and to respond to the country's commitments regarding open access to information. This instance will also contribute to governmental organizations' processes of "Managing and updating databases on biodiversity, as well as developing studies and collecting



all available information to determine the country's environmental baseline" [Law number 19.300 on General Environmental Bases; Articles 38 and 70, letters "j" and "k"].

- To strengthen and build capacities in teams of Ecuadorian and Chilean Nodes, and also in the network of publishers to disseminate information on biodiversity at occurrence level and species checklists, considering data quality, suitability of use, and incentives to publishers.
- To build capacities to develop a national strategy of data mobility and management of biological collections in agreement with data publishers oriented to strengthen baseline information for decision makers and public policy elaboration, also encouraging the scientific community to deliver biological data of public interest.
- Positioning the Chilean Node at a national level as responsible of coordinating the exchange of biodiversity data.
- To coordinate institutions, projects, and initiatives related to biodiversity at the national level, including academy, scientific research centers, museums and State, with the aim of guaranteeing access to biodiversity information.
- To strengthen regional cooperation between GBIF participating members and other centers specialized in management of biological data with regard to mobilization of biodiversity data with respect to their occurrence level and species checklists with respect to their occurrence level and species checklists.
- To progress in development of an accurate baseline biodiversity registry to assess trends, identify priority activities, provide information to guide decision-making, and build public consensus on the conservation and sustainable use of biodiversity. This recommendation emerged in the process of evaluation of Chile's environmental performance in 2016 by the OECD/ ECLAC.
- To incorporate the country, through the Chilean Node, into international collaboration networks. The project will allow exchange of experiences with GBIF Spain, GBIF Colombia, GBIF Argentina, and GBIF Ecuador, providing excellent training to the Chilean Node's team. Thus, the management model and experiences that made possible the successful implementation of those nodes will be available and useful for the implementation of the Chilean node within the period 2018 - 2020. During this period, a national strategy to strengthen biological collections will be developed, a goal included in the National Biodiversity Strategy's Action Plan of Native Species Conservation.

The main objectives of the project are:

- To strengthen collaboration between the emergent Chilean Node and leading international nodes in global biodiversity networks (GBIF Colombia, GBIF Spain, and GBIF Argentina). The creation of a national and international collaboration network will improve Chile's efforts to publish its biodiversity data.
- To perform a visit to the Technical Secretariat of SiB Colombia to discuss the best strategies for successful establishment of Nodes in Chile and Ecuador, and to strengthen the publication of data at national and international level.
- To organize a Workshop in Santiago, Chile, that will allow the exchange of experiences on the publication and use of biodiversity data among five countries.
- To know and use the GBIF data portal, with exercises that show how to search, filter, display, download, and publish data.
- To facilitate the operation of the IPT infrastructure hosted in our institution, increasing the number of occurrences published in the GBIF network.

- To strengthen capacities of Node teams and publisher community in the use of tools to improve data quality. Learn how to use Open Refine (tool used for cleaning biodiversity data), and the use of other data management tools provided by Canadensys (Date parsing and Coordinate conversion).
- To reverse the current scenario in which Chile's activity as a data publisher in international networks is very low, and where other countries publish the greatest amount of Chilean data in GBIF and other networks.
- To consolidate the implementation of the GBIF Chile Node. During 2012, our country was the focus of a previous mentoring project with Costa Rica, which allowed us to connect with the community of publishers, establish an alliance with the MNHN, diagnose the national situation of biological collections, and integrate our country to the GBIF community. This project is part of the activities already in course by the Chilean Node to establish and consolidate the initiative at national and regional levels. Chile is expected once again to become a GBIF voting country.

Needs for capabilities that have been identified, will be addressed through the following activities:

- Mentoring: A visit to Technical Secretariat of Colombian Biodiversity Information System (SiB Colombia), along with GBIF Spain, will instruct the teams from Chilean and Ecuadorian Nodes in processing and publishing data. On one hand, activities in this visit will focus on learning and documenting the publication process, i.e. describing a dataset using metadata standard, cleaning data with appropriate tools, normalize data using Darwin Core standard, and publishing data on the GBIF network using the GBIF's Integrated Publishing Toolkit (IPT). In addition, the visit to SiB Colombia will also focus on learning and understanding the national and regional strategies used by active nodes to carry out successful implementations in their countries.
- Regional workshop organized in Chile, with Ecuador as a guest country, addressed to data publishers, with the instruction of GBIF Spain, SiB Colombia, and GBIF Argentina, on issues of data publication and incentives to the publishers. At the end of the Workshop, participants will be familiar with the process of publishing data of occurrences and species checklists in the GBIF network. Training will focus on: describing a dataset using appropriate metadata standards, cleaning data with appropriate tools, standardizing data using the Darwin Core standard, finalizing the process by publishing datasets in the GBIF network using the Integrated Publishing Toolkit - IPT of GBIF that will be installed in servers of the Ministries of Environment of Chile and Ecuador. This Workshop will increase visibility of biodiversity data collected within the framework of an investigation or from biological collections deposited in a museum or university.

The activities that have been completed at the time of writing this report, are the visit to the Technical Secretariat of SiB Colombia in November 2017, in Bogotá Colombia, and the Workshop "Transfer of technical capacities associated with the publication of biodiversity data through GBIF", held in April 2018 in Santiago de Chile. During the Workshop, more than 15 publishing institutions were registered on GBIF.org, all of them are currently preparing their databases for publication on the international platform.

With regard to pending or ongoing activities, publication of part of data committed during the Workshop is noteworthy and it is expected that this publications to be finalized during the second half of 2018. Resources are being developed at various institutions.

As a result of the Workshop, a series of activities have arisen with partners, like establishing working groups to assess country's situation of biological collections and to develop and to implement a strategy to strengthen biological collections that will allow them to be

safeguarded and make available the information they contain; initiating management work with agencies that finance science in Chile to incorporate the use of standards and licenses on the primary biodiversity data of research projects; To highlight importance of natural history in political authorities of the most important academic institutions in Chile; to consolidate alliances with certain key partners in data management at national level; to coordinate replication sessions of the Workshop "Transfer of technical capacities associated with the publication of biodiversity data through GBIF" in the partner institutions and in others that wish to join the Node.

In addition, during the remaining 9-month period, training, dissemination and follow-up events are expected to be held for members. It is considered that with this project GBIF Chile will start again its implementation, development and positioning activities.

Participation of partners is crucial for successful implementation of a Biodiversity Information System in the country, which actively includes participation in GBIF. The role of Ministry of the Environment is just to be coordinator and articulator, not data producer, because information and substantive experience is in the hands of GBIF's partners in Chile, since they are institutions and researchers who are expert in their areas of work, so partners become critical elements for the construction of a country policy on information management.

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### 3.1. Activities completed

*Highlight the activities that have been completed at the time of writing the report. Explain how the different partners in the project have contributed to its implementation.*

On July 2018, two main activities committed to the project had been implemented:

1. Mentoring: A visit to Technical Secretariat of Colombian Biodiversity Information System (SiB Colombia), along with GBIF Spain, will instruct the teams from Chilean and Ecuadorian Nodes in processing and publishing data. On one hand, activities in this visit will focus on learning and documenting the publication process, i.e. describing a dataset using metadata standard, cleaning data with appropriate tools, normalize data using Darwin Core standard, and publishing data on the GBIF network using the GBIF's Integrated Publishing Toolkit (IPT). In addition, the visit to SiB Colombia will also focus on learning and understanding the national and regional strategies used by active nodes to carry out successful implementations in their countries.
2. Regional workshop organized in Chile, with Ecuador as a guest country, addressed to data publishers, with the instruction of GBIF Spain, SiB Colombia, and GBIF Argentina, on issues of data publication and incentives to the publishers. At the end of the Workshop, participants will be familiar with the process of publishing data of occurrences and species checklists in the GBIF network. Training was focus on: describing a dataset using appropriate metadata standards, cleaning data with appropriate tools, standardizing data using the Darwin Core standard, finalizing the process by publishing datasets in the GBIF network using the Integrated Publishing Toolkit - IPT of GBIF, that will be installed in servers of the Ministries of Environment of Chile and Ecuador. This Workshop will increase visibility of biodiversity data collected within the framework of an investigation or from biological collections deposited in a museum or university

These activities have gained importance since scientific community in Chile, the Government of Chile through various public services, the public and the authorities, have highlighted the importance of having basic information for conservation management, public policies, among others.

### 3.2. Post-project activities

*Highlight post-project activities if any (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.*

GBIF Chile has a portfolio of activities related to the management or publication of biodiversity data, among which we can highlight:

1. Facilitation workshop on data quality and publication to be held in August 2018 at the National Museum of Natural History from Chile.
2. Transfer of technical skills, in situ and ex situ, to undergraduate and graduate students to systematize data from biological collections of partners and make them available through the GBIF portal.
3. Scientific publication of two partners of GBIF Chile following work in a specific group in the institution's biological collection.
4. Request for training in the use of Darwin Core standard from environmental consulting companies in the country.
5. Spread of the use of standards to document and share data -Darwin Core- in several projects associated with data management where the Ministry of the Environment is the principal, we refer to projects that assess biodiversity of the Global Environment Facility -GEF.
6. Working group to impact on public policy instruments.

### 4. Project objectives

*A list of the objectives included in your original project proposal, and a description of how your project activities contributed to meeting them. . Also include any additional objectives that were defined during the implementation of the project.*

The main objectives of the project are:

- To strengthen collaboration between the emergent Chilean Node and leading international nodes in global biodiversity networks (GBIF Colombia, GBIF Spain, and GBIF Argentina). The creation of a national and international collaboration network will improve Chile's efforts to publish its biodiversity data.
- To perform a visit to the Technical Secretariat of SiB Colombia to discuss the best strategies for successful establishment of Nodes in Chile and Ecuador, and to strengthen the publication of data at national and international level.
- To organize a Workshop in Santiago, Chile, that will allow the exchange of experiences on the publication and use of biodiversity data among five countries.
- To know and use the GBIF data portal, with exercises that show how to search, filter, display, download, and publish data.
- To facilitate the operation of the IPT infrastructure hosted in our institution, increasing the number of occurrences published in the GBIF network.
- To strengthen capacities of Node teams and publisher community in the use of tools to improve data quality. Learn how to use Open Refine (tool used for cleaning biodiversity data), and the use of other data management tools provided by Canadensys (Date parsing and Coordinate conversion).
- To reverse the current scenario in which Chile's activity as a data publisher in international networks is very low, and where other countries publish the greatest amount of Chilean data in GBIF and other networks.
- To consolidate the implementation of the GBIF Chile Node. During 2012, our country was the focus of a previous mentoring project with Costa Rica, which allowed us to



connect with the community of publishers, establish an alliance with the MNHN, diagnose the national situation of biological collections, and integrate our country to the GBIF community. This project is part of the activities already in course by the Chilean Node to establish and consolidate the initiative at national and regional levels. Chile is expected once again to become a GBIF voting country.

Activities and collaboration generated during active implementation of the project, with the partners in Chile, the authorities, the GBIF Secretariat and project partners, has had an unforeseen positive impact related to trust, maturity and experience gained, which would not have been possible without this project. Here we do not refer to time invested in discussing definition of objectives, preparation of both actions - Visit SiB Colombia, Workshop in Chile - conversations with counterparts, experiences, additional projects that arose; the objective of strengthening capacities in Chile was significantly fulfilled with this project and progress is being made in the positioning of the GBIF Chile.

## 5. Project deliverables

*The original list of deliverables from your project proposal, including a description of the final deliverables produced. Make sure to include sources of verification for each of the deliverables, such as details of data mobilized through the project including DOIs to published datasets, and/or links to re-usable information resources or tools. Alternatively, the deliverables can be attached to the report as an annex.*

1. Program of the Regional Training in Santiago, Chile.
2. Presentations of the Regional Training in Santiago, Chile
3. 30,000 records of occurrences in Darwin Core standard published on the GBIF network through the national IPT from publishers in Ecuador and Chile.
  - a. 7 new institutions registered in GBIF during the Workshop in Chile.
  - b. 1 dataset was published post workshop: [DOI10.15468/d3auf9](https://doi.org/10.15468/d3auf9)
  - c. The following databases are being prepared for publication in GBIF during 2018:
    - i. Flora database of GEF project "Corredores Biológicos de Montaña" (GEF Project Mountain Biological Corridors)
    - ii. Database of Phylum Cnidaria of the Zoology Museum of the University of Concepcion
    - iii. Lepidoptera database of the Zoology Museum of the University of Concepcion
    - iv. Base de datos de polinizadores proyecto GEF Corredores Biológicos de Montaña
    - v. Pollinator Database GEF Project Mountain Biological Corridors
    - vi. Marine invertebrate database from Chile. Faunamar Ltda.
4. Four species checklists in standard Darwin Core published on the GBIF network using the national IPT.
  - a. Lista sistemática de Moluscos de Chile (Checklist of molluscs from Chile)
  - b. Lista sistemática de Peces de Chile (Checklist of fish from Chile)
  - c. Lista sistemática Cnidaria Anthozoa de Chile (Checklist Cnidaria Anthozoa from Chile)
  - d. Lista sistemática Anélidos Poliquetos de Chile (Checklist of Annelid Polychaetes from Chile)
5. Four professionals of the Chilean Node trained in the process of publication of occurrence data and species checklists.
  - a. Reinaldo Aviles: Node Staff; Departamento de Conservación de Especies

- b. Abner Galvez: Node Staff; TI Developer
  - c. José Arellano: Node Staff; TI Developer
  - d. Jorge Herreros de Lartundo; Ministerio del Medio Ambiente
  - e. Leisy Amaya: Node Manager GBIF Chile
  - f. Charif Tala: Node Staff
6. One professional from the Ecuadorian Node trained in the process of publication of occurrence data and species checklists.
    - a. Néstor Acosta; Node Manager GBIF Ecuador
  7. 20 publishers trained in the data publishing process.
  8. Certificate of attendance for workshop participants issued by the GBIF Chilean Node. (<https://drive.google.com/drive/folders/1IWOarsDQRwOGtHUfBL79ysx2TQfjIQMz?usp=sharing>)
  9. Report with the main results of a survey of satisfaction to the participants.
  10. Certificate for trained participants on the use of data cleaning and publishing tools, issued by GBIF.
 

The instructors decided to work with controlled datasets during the Workshop, so it was not possible to evaluate the process with their own data sets. However, all participants were able to publish in the test IPT. It was not assessed under specific rubrics.
  11. Online training course uploaded on workshop website including supporting materials (videos, presentations, and additional documentation).
 

The professional work done by the GBIF Spain team was outstanding, performed in a very professional way, reviewing, assembling all toolkits and make them available on the GBIF Spain platform and generating videos of the workshop training sessions and make them available on the GBIF Spain YouTube channel.

## 6. Project communications

*Report on the way the results of your project have been communicated and shared with the project stakeholders and broader GBIF community. Please also review the page describing your project available from <https://www.gbif.org/programme/82219/capacity-enhancement-support-programme#projects>. Highlight any additional documents, events, news items or links that you would like to add to your page.*

The Communications and Press Office of the Ministry of the Environment covered the event during the three workshop days; a press note release was generated. To see the press note release, click on the following link:

[https://drive.google.com/drive/folders/118K\\_76E1eIIB\\_gkb2untXXRDoXRqYBIr?usp=sharing](https://drive.google.com/drive/folders/118K_76E1eIIB_gkb2untXXRDoXRqYBIr?usp=sharing)

<http://portal.mma.gob.cl/chile-aporta-con-mas-de-un-millon-de-registros-de-presencia-de-especies-al-logro-mundial-de-la-plataforma-gbif/>

<https://www.gbif.org/project/83351/establishing-a-national-node-for-chile-to-enhance-latin-america-regional-capacity#about>

Twitter: #GBIFChile2018; @GBIFChile

## 7. Evaluation: lessons learned and best practices

*An assessment of the overall outcomes and impacts of your project, including strengths and weaknesses in its implementation and results. If any changes have been made to the project plans please clearly indicate this and the reasons for this. Try to identify your experiences that could help others to design and implement projects more effectively, including the best practices to adopt and the pitfalls to avoid.*

At this stage of project completion it is worth noting that the success of this particular project was significantly conditioned by the expertise of the group of instructors, their willingness, professionalism and the cohesion that was generated in the work team. This professionalism and cohesion was evident to the scientists participating in the activities carried out in Colombia and Chile and was one of the elements that conditioned the confidence in the implementation of the Node. It was also positive to have the presence of scientists and researchers committed to the philosophy of sharing information in favor of conservation and sustainable development.

With regard to elements to be reinforced, it should be noted that the scarce budget and personnel dedicated to the management of biological collections available to GBIF Chile's partner institutions and to those that manage collections in general, is a limiting element when the time comes to compromise the publication of information on different platforms. For this reason, work is being done with partner institutions to develop a data publication plan, this plan will facilitate the publication of data, strengthening intermediate work and managing the allocation of resources to enable data to be mobilized.

Support during and after mentoring activities with partners is suggested to backing them in the data publication process. It is normal to be slow in the process during the year one of implementation, as there must be a change in organizational culture of various institutions, which allows them to institutionalize the work of data publication.

## 8. Future plans and sustainability

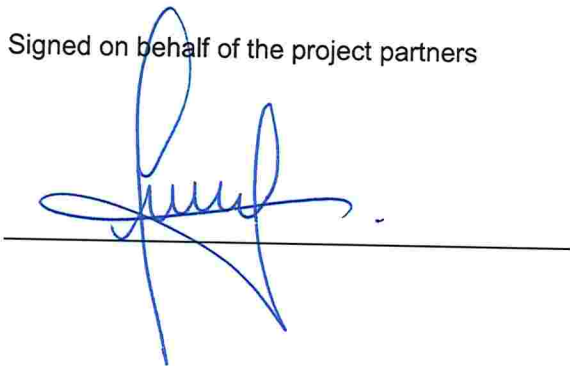
*A description of how the partners involved will build on the results of this project in their future work. This could include future collaborative activities, such as plans to complete any unfinished project activities and how the future impact of the project could be monitored or measured.*

Within the framework of this project, several instances of collaboration have been generated with the partners, both the publishers of data associated with the Node and the training partners. In the first case, working groups are being managed to address various issues related to data management, including the initiative to generate a national biodiversity data management policy, where some of the experts who participated in the project's implementation activities will be invited to discuss; Another instance that will begin to work in the fourth quarter of 2019 is the development of the national strategy to strengthen biological collections, a goal included in the Action Plan for Native Species of the recently approved National Biodiversity Strategy, this roundtable will convene various institutions that participated in the Data Publication Workshop in Santiago de Chile last April 2018.

At the same time, it is expected that progress will be made in the inclusion and implementation of standards focused on systematizing and publishing the biodiversity data managed by various partner institutions of GBIF Chile.

## 9. Signature of the project main contact point

Signed on behalf of the project partners



Date

August 3, 2018