

# Digitization and mobilization of regional heritage biological specimens of the University of the Philippines Los Baños Museum of Natural History (Part I: Luzon)

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**Programme:**BIFA

**Project ID:** BIFA5\_021

**Project lead organization:**UNIVERSITY OF THE PHILIPPINES LOS BAÑOS MUSEUM OF NATURAL HISTORY

**Project implementation period:**6/7/2020 - 15/4/2022

**Report approved:** 24/8/2022

## Narrative Final report

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### Executive Summary

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The project run from July 1, 2020 until April 15, 2022. This was extended from the original duration ending on December 2021. The project's achievements include publication of 4 datasets in GBIF with different taxonomic coverage. We have published a total of 5811 occurrence records in GBIF, 5555 of this records or 95% were georeferenced albeit having a great range of uncertainty. With regards to other activities, the project has successfully conducted 4 events that was able to introduce the project, orient stakeholders on project activities, provide training for team members, and showcase the partial results of the project.

Evaluation of the project implementation is so far only on the point of view of the project lead. We will conduct a post project presentation to all stakeholders for a final evaluation of the project achievements.

We have learned so many lessons not only in conducting digitization projects but also implementing research projects in general. This includes best practices in prioritizing digitization activities and man power management.

As in many cases the COVID19 pandemic had a great impact on the project implementation. There were a lot of adjustments that have to be made and some caused a lot of delays. There were also a lot of personnel transition and development during the project implementation that affected how the project was run.

All activities and deliverables not completed within the project duration are still in the pipeline for completion as post-project activities. We envision a network of digitization and mobilization for Philippine museums to be in place in the future.

### Progress against milestones

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#### Has your project completed all planned activities?: No

**Rationale:** The planned digitization workshop was originally set to be an in person activity, but due to COVID restrictions the activity was turned to virtual. However, due to lack of leadership for the particular activity, it was postponed and proposed to be incorporated to the planned workshop for the follow-up project. The digitization workshop for the follow up project in 2022 will include supposed participants of the cancelled activity.

#### Has your project produced all deliverables?: No

**Rationale:** Due to delay in implementation of the workshop, the production of workshop materials will also be carried over to the next project. We have only completed publishing of the datasets in GBIF before the extended project date, this is why also we have to push the preparation of a data paper. We still intend also to present the results of our project in a conference that is scheduled beyond the project end date.

### Report on Activities

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## Activity implementation summary

We have completed 6 out of 9 activities listed in the project proposal, and added a new activity for the project resulting to 7 completed activities. There were delays in procurement of necessary equipment which affected the conduct of the digitization activities. All digitization activities (data entry, standardization, publication) were completed after amendment of the project end date. Project promotion activities including digitization workshop and conference presentation were not completed within the project duration but will still be conducted in the future as a post-project activity.

## Completed activities

### Activity name: Levelling-off and planning workshop

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**Description:** In this meeting, staff and curators of the implementing institution met online via zoom to discuss the plans and share tasks to undertake the digitization project.

**Start Date - End Date:** 26/8/2020 - 26/8/2020

**Verification Sources:** 08-26 <https://www.youtube.com/watch?v=ptJNzXF1xyM>

### Activity name: Training of data entry team

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**Description:** Data entry team composed of MNH staff and project assistants attended were trained on the use of species encoder and publishing data to the GBIF. The training was given by Christopher Elloran and Carl Callangan from the ASEAN Centre for Biodiversity.

**Start Date - End Date:** 8/10/2020 - 8/10/2020

**Verification Sources:** <https://www.youtube.com/watch?v=KzjH7TD1oh0> 2.

### Activity name: Biodiveristy Data Mobilization Webinar

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**Description:** This webinar was given by our partner and node manager Christian Elloran from the ASEAN Centre for Biodiversity. The webinar was attended by University of the Philippines faculty and Staff. Mr. Elloran presented the process and advantages of sharing/pulishing biodiversity data.

**Start Date - End Date:** 3/9/2020 - 3/9/2020

**Verification Sources:** <https://www.youtube.com/watch?v=U4t15jYi1Hw>

### Activity name: Procurement/ Acquisition of Equipment

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**Description:** Necessary equipment such as Cameras, Scanners and IT equipment will be purchased before the start of the data entry.

**Start Date - End Date:** 13/7/2020 - 5/4/2021

**Verification Sources:** File name: SI#20542 Jeremy Naredo Order#83935.pdf

File name: purchase-order-Laptop-RE20-0011.pdf

### Activity name: Data entry and Specimen Imaging

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**Description:** This is the main part of the project wherein the team will image specimens and encoded the accompanying data.

**Start Date - End Date:** 15/11/2020 - 15/6/2021

**Verification Sources:** <https://drive.google.com/drive/folders/1xr379y2qkNxyITKiZMYutjqfPnTG6dP9?usp=sharing>

### Activity name: Data cleaning and processing

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**Description:** Designated staff and volunteers shall ensure the quality of dataset using data cleaning programs before being uploaded to GBIF. Specimens and their names shall be validated before publishing.

**Start Date - End Date:** 16/6/2021 - 8/4/2022

**Verification Sources:** <https://drive.google.com/drive/folders/1xr379y2qkNxyITKiZMYutjqfPnTG6dP9?usp=sharing>

### Activity name: Dataset published in GBIF

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**Description:** All datasets prepared shall be published and uploaded to GBIF.

**Start Date - End Date:** 29/1/2021 - 13/4/2022

**Verification Sources:** [https://www.gbif.org/dataset/search?publishing\\_org=8026aa28-6761-4550-a98a-68881c1fe55d](https://www.gbif.org/dataset/search?publishing_org=8026aa28-6761-4550-a98a-68881c1fe55d)

## Report on Deliverables

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## Production of Deliverables - Summary

We have completed 4 out of the 6 listed deliverables in the proposal. All of these deliverables were datasets published in GBIF. We however, modified the coverage of one proposed dataset (microbial culture collection) into the mycological herbarium dataset. We shall compile results of the dataset publication into one data paper which will be a post-project activity.

## Production of deliverables

### **Title: UP Los Baños Museum of Natural History Predatory Arachnids from Luzon**

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**Type:** Dataset

**Status update:** We have added several records of around 2200 to the initial 79 records that were published for this dataset. We also added geographic coordinates for all but one record and addressed issues pointed out on the midterm report.

**Dataset scope:** Taxonomic- Class Arachnida; Geographic: Philippine Archipelago; Temporal:1952-2019}

**Expected number of records:** 2522

**Data holder:** UPLB Museum of Natural History

**Data host institution:** ASEAN Centre for Biodiversity

**Sampling method:** A digitized file of all collection data for acari was used and converted to csv files. Collection codes are indicated in slides were matched with the identification to the corresponding data in the database.

**% complete:** 100

**DOI:** <https://doi.org/10.15468/46m8um>

**Expected date of publication:**

### **Title: Fungi of Mt. Makiling from the Mycological Herbarium of the UPLB Museum of Natural History**

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**Type:** Dataset

**Status update:** This dataset served as substitute for the microbial culture collection dataset. A new dataset containing 1041 occurrence records were published in GBIF. Not all specimens were identified to species level.

**Dataset scope:** Taxonomic- Kingdom Fungi; Geographic: Mt. Makiling, Laguna; Temporal:1905-1992}

**Expected number of records:** 1041

**Data holder:** UPLB Museum of Natural History

**Data host institution:** ASEAN Centre for Biodiversity

**Sampling method:** Records were based from specimens deposited in the UPLB MNH Mycological herbarium.

**% complete:** 100

**DOI:** <https://doi.org/10.15468/qmw3xf>

**Expected date of publication:**

### **Title: Rubiaceae of Luzon Island from the University of the Philippines Los Baños Museum of Natural History Botanical Herbarium**

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**Type:** Dataset

**Status update:** A new dataset containing the family Rubiaceae was published in GBIF. There were modifications from the proposed dataset which originally intended to include epiphytic plants.

**Dataset scope:** Taxonomic- Family Rubiaceae; Geographic: Luzon Island, Philippines; Temporal:1904-1999}

**Expected number of records:** 1219

**Data holder:** UPLB Museum of Natural History

**Data host institution:** ASEAN Centre for Biodiversity

**Sampling method:** Herbarium sheets were specimens were imaged and used for data digitization. The images are uploaded in wikimedia commons and are attached to the occurrenceID. This will be added as an extension in the future.

**% complete:** 100

**DOI:** <https://doi.org/10.15468/mtsykg>

**Expected date of publication:**

### **Title: University of the Philippines Los Baños Museum of Natural History Dioscoro Rabor Collection: Luzon Birds**

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**Type:** Dataset

**Status update:** A new dataset published with historical records of Bird collection of Philippine wildlife studies pioneer, Dioscoro Rabor and his colleagues.

**Dataset scope:** Taxonomic- Class Aves; Geographic: Luzon Island, Philippines; Temporal:1948-1979}

**Expected number of records:** 999

**Data holder:** UPLB Museum of Natural History

**Data host institution:** ASEAN Centre for Biodiversity

**Sampling method:** Data came from a computerized catalog of the rabor collection. Data were validated through GBIF and coordinates were derived using google maps.

**% complete:** 100

**DOI:** <https://doi.org/10.15468/5u6fmk>

**Expected date of publication:**

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### Impact of COVID-19 pandemic on project implementation

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COVID-19 affected mostly communication and logistics since all meetings and document submissions are virtual. This affected greatly the processing of documents, recruitment of staff and purchasing of supplies and equipment. Of our 5 project assistants, only 3 are reporting physically and doing imaging while the other 2 remain at home and performed mostly transcription of imaged data.

We have also called-off any plans for attendance to conferences local or international. Our digitization workshop was scheduled to be done partly virtually but worsening COVID situation towards the end of 2021 eventually led us to decide to conduct it completely virtually. We have then run out of time to organize the event.

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### Events

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#### Biodiversity Data Digitization and Mobilization Project Levelling-off and Planning Workshop

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**Dates:** 2020-08-26 - 2020-08-26

**Organizing institution:** UP Los Baños Museum of Natural History

**Country:** Philippines

**Number of participants:** 34

**Comments:** We received mixed reactions about the project direction and varying levels of commitment from probable involved parties.

**Website or sources of verification:** <https://www.youtube.com/watch?v=ptJNzXF1xyM&list=PLbcGvct0W0K2y32tlirDlxEzwlBOlvqo&index=3>.

evaluation-levelling-off  
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### Events

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#### Learning Event on “Publishing Biodiversity Data”

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**Dates:** 2020-09-03 - 2020-09-03

**Organizing institution:** UP Los Baños Museum of Natural History

**Country:** Philippines

**Number of participants:** 26

**Comments:** See evaluation

**Website or sources of verification:** [evaluation-LE-Publishing-Biodiversity-Data,](https://www.youtube.com/watch?v=U4t15jYi1Hw&list=PLbcGvct0W0K2y32tlirDlxEzwlBOlvqo&index=2)

<https://www.youtube.com/watch?v=U4t15jYi1Hw&list=PLbcGvct0W0K2y32tlirDlxEzwlBOlvqo&index=2>

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### Events

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#### Specialized Training on the Use of Species Encoder

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**Dates:** 2020-10-08 - 2020-10-08

**Organizing institution:** UP Los Baños Museum of Natural History

**Country:** Philippines

**Number of participants:** 20

**Comments:** This was a productive workshop where participants shared their views on how to improve their usability of species encoder.

**Website or sources of verification:** <https://www.youtube.com/watch?v=KzjH7TD1oh0&list=PLbcGvct0W0K2y32tlirDlxEzwzLBOlvqo&index=1>

## Events

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### Launch of MNH Botanical Herbarium Database

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**Dates:** 2021-09-30 - 2021-09-30

**Organizing institution:** UP Los Baños Museum of Natural History

**Country:** Philippines

**Number of participants:** 150

**Comments:**

**Website or sources of verification:** <https://www.youtube.com/watch?v=ht5dAExlkHs>

## Communications and visibility

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All of the events hosted by the project were recorded and posted in the museum's YouTube channel. Links and updates are also shared in our Facebook page and website. The project leads will be presenting the accomplishment of the project to the museum staff and curators after the project completion. We will be also publishing articles in our website on the datasets and our experiences in digitizing and publishing data.

## Monitoring and evaluation

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### Final Evaluation

There are several aspects to be considered to come up with the overall evaluation of the project implementation. These includes implementation of activities, management of resource, administrative functions, man power management, and communication. Considering all of this, we can say that the implementation of the project was far from what we envisioned it to be during the proposal stage. Due to the wide coverage of project objectives (i.e taxonomic coverage) there were difficulties in management of manpower compounded by the effects of covid-19. One of the biggest factors that affected the accomplishments and timeline of the project was the lack of a designated Research Assistant that can handle or assist in handling the different aspects of the project. The project lead was left to take several project deliverables while also being responsible for other core activities. We can say however, that the resulting deliverables (datasets published) built a very good foundation for future digitization activities of the museum. Our databases can become templates for use of other collections in the university campus and other museums in the country.

### Best Practices and Lessons Learned

One of the best lessons we learned in biodiversity data digitization in natural history collection setting, is first to look at all the resources generated from these collections. This can save a lot of time before doing all digitization from scratch. It is also advisable to consider to be specific on what a project wants to cover (taxonomically), it has been a big factor for us to be dealing with several collections for the project. A themed digitization project for each museum collection will be ideal although it will also translate to much higher budgetary requirement.

### Post Project Activity(ies)

Post project activities will include writing of one or more data papers relating to the dataset published through this project. Also, we will be presenting the results of the project and the museum's future directions for biodiversity data mobilization in upcoming scientific conferences. Our planned digitization workshop will be incorporated to the scheduled workshop of the follow-up project.

## Sustainability plans

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We will conduct a post project presentation to stake holders to present the project achievements. We will continue working with the ASEAN Centre for Biodiversity in order for us to publish datasets in GBIF. The follow up project on Bats, ectoparasites and pathogen data digitization is another mode of

sustaining the foundations built by this project. We are very keen on working with other museums in the Philippines to be able to develop a network of natural history data digitization and mobilization.

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**GBIF leads the Biodiversity Information Fund for Asia (BIFA), a programme funded by the Ministry of the Environment, Government of Japan. The programme provides supplementary support for activities addressing the needs of regional researchers and policymakers through mobilization and use of biodiversity data.**

