Bee data mobilization from TIGER project

Programme:BIFA
Project ID: BIFA6_009
Project lead organization: Chulalongkorn University, Department of Biology
Project implementation period:1/11/2021 - 31/10/2022
Report approved: 24/5/2022

Narrative Midterm report

Executive Summary

The purpose of this project is to mobilize at least 3,000 processed occurrence records of Thai bees deposited at the QSBG to GBIF. The specimens were collected during 2006-2009 as parts of TIGER project. Activities included in this project are mobilizing actual specimens from the QSBG to CU, sorting, pinning, and identifying bees to lowest possible ranks, transcription of label data and georeferences validation, photographing of specimens, assigning QR codes, transcription of data to GBIF platform for delivery, and holding a workshop to showcase and demonstrate the use of the database.

In this mid-term report, we are please to share that the transcription of the label data is completed for 1,687 specimens (89 species). In addition, we completed the photographing of 401 specimens that made a total number of 1,597+ images that are currently published in GBIF. Georeferencing data are completed and validated for 1,687 specimens. Despite surpassing many of our milestones, the process of generating and attaching QR codes to our specimens and link to our database is still at an infancy stage.

The project implementation has been more or less efficient despite the COVID-19 pandemic problem in Thailand and around the world. We currently hired two graduate students as full time workers on this project with one PhD student working part time. The communications among all of the staffs in this project are very effective, because we work in the same facility everyday and we have the project meeting every week to discuss our short comings. Despite the obstacles we faced during this COVID-19 pandemic, we are optimistic that we will achieve our goals at the end of the project deadline.

Progress against milestones

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

Dataset published:

Dataset	DOI
Database and digitization of bees from TIGER project (Thailand)	10.15468/p6zfzc

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

Name of the workshop participant: Nontawat Chatthanabun

Certification obtained: Advanced Badge

Report on Activities

Activity progress summary

The progress of the activities are described as follows:

1. Mandatory workshop: We attended the GBIF workshop during the 20th-24th July 2020. Mr. Nontawat Chatthanabun, our project technician, is later certified with a "Advance" badge for the training.

2. Travel to the QSBG in Chiang Mai province to sort out bee specimens from remaining TIGER collection and bring specimens back to the lab in Bangkok: Since the beginning of the project in early November, we traveled to the QSBG in Chiang Mai twice on the 28th November-2nd December 2021 and 27th-31st March 2022. Currently we obtained 1,687+ bee specimens from the depository at the botanical garden. The specimens are currently at the Department of Biology, Chulalongkorn University and have been mostly processed and digitized.

3. Bee specimens will be pinned, dried, and attaching labels: More than 1,687 bee specimens were pinned, dried, and attached with their labels

4. Identification of the specimens, validating collecting data, and process these info into database: We completed the sorting, identification , validation, and transcribing of 1,687 specimens data in CSV format stored in GoogleDrive link and published in GBIF (DOI10.15468/p6zfzc).

5. Photographing bee specimens and associating labels: 1,597+ high-resolution images of bees specimens and their labels are captured from 401 specimens. For the remaining time of the project, we will focus on meeting our goal to provide images for all 3,000+ bee specimens.

6. Validating georeferencing data and mapping species distributions: Georeferencing data are completed and validated for 1,687 specimens.

7. Attaching QR codes to specimens and link to database: The process of generating and attaching QR codes to our specimens and link to our database is only started due to the delay in obtaining all of the bee specimens from the QSBG. Nevertheless, this problem should be overcome swiftly after we obtain all 3,000 specimens. The attaching of QR code to specimens and linking to the database should be completed by the time at the end of the project or before.

8. Transcription of data to GBIF platform and upload processed records: We published our project database in GBIF platform in the following DOI10.15468/p6zfzc

Activity name: BIFA Capacity enhancement virtual Workshop

Description: Mandatory workshop
Start Date - End Date: 1/11/2021 - 6/11/2021
Verification Sources: See attached document for Mr. Chatthanabun "Advance" badge.

Report on Deliverables

Deliverables progress summary

We pledged to provide a dataset containing approximately 3,000 occurrence records of bee specimens deposited at the Queen Sirikit Botanical Garden, Thailand delivered to GBIF by the 31st of October 2022. Currently, the first dataset of our work is published on GBIF platform (https://doi.org/10.15468/p6zfzc). This dataset includes the transcription of the label data for 1,687 specimens (89 species), Images of 401 specimens with three views (dorsal, frontal, and lateral) and labels resulted in more than 1,597 pictures. Also, 1,687 specimens occurrence records are completed with georeferencing data. Please refer to the Activity Progress Summary for highlight of some delayed deliverables.

Progress towards deliverables

Title: Bees from TIGER project

Type: Dataset
Status update: This dataset includes the transcription of the label data for 1,687 specimens (89 species), Images of 401 specimens with three views (dorsal, frontal, and lateral) and labels resulted in

more than 1,597 pictures. Also, 1,687 specimens occurrence records are completed with georeferencing data.

Dataset scope: Occurrence records of bees from TIGER project
Expected number of records: 1687
Data holder: Natapot Warrit
Data host institution: Department of Biology, Chulalongkorn University
Sampling method: Indirect sampling methods: pan trap and Malaise trap.
% complete: 40
DOI: doi.org/10.15468/p6zfzc
Expected date of publication: 2022-10-31

Communications and visibility

Occurrence record database of bees from the QSBG will be produced and published to GBIF, and also be used as a template for creating website relating to biodiversity information in Thailand hosted by the QSBG and National Science and Technology Developing Agency (NSTDA). Taxonomically important records of certain species resulted from this work will be published in scientific journals to complement the database in the future. The processes and methods of digitization of bee occurrence records will be disseminated and shared with other research collections, universities, and institutions in Thailand through communications to the NSTDA website and other social media. In October 2022, a workshop on Thai bee databasing is planned at Chulalongkorn University, Bangkok, which will bring together students and researchers interested in pollination ecology, conservation, and bee taxonomy to familiarize and learn how to efficiently utilize the information provided in the database, and also to advertise information regarding the importance of pollinators to the public. For further communication and dissemination of the project, we are more than happy to liaise with the GBIF Secretariat to help advertising of biodiversity data sharing to other Thai research institutions. In addition, working with the GBIF Secretariat in the future will surely provide opportunity for us to gain future insights and update our knowledge in biodiversity information management.

Monitoring and evaluation

Monitoring and evaluation findings

For a current evaluation and assessment of the project outputs and deliverables, please refer to the Activity Progress Summary and Deliverables Progress Summary sections.

The project implementation has been more or less efficient despite the COVID-19 pandemic situation in Thailand. We currently hired two graduate students as full time workers on this project with one PhD student working part time. Many undergraduate students were employed as well on hourly stipends. The communications among all of the staffs in this project are very effective, because we work in the same facility everyday and we have the project meeting every week to discuss our short comings.

Our experiences communicating with GBIF secretariat, personnel, and Helpdesk have been very productive and helpful to our ability to complete the first half of the project. The new addition of an Asia project coordinator is also refreshing and Mr. Chihjen Ko has monitored the project closely and giving us practical advice.

The only obstacle that delays our work is the process of obtaining all 3,000 bee specimens from the QSBG. Initially, we assumed the process of mobilizing actual bee specimens from the QSBG to our lab in Bangkok will only take one trip; however, the process took longer and 1-2 more trips to the QSBG is essentially required. We will expedite and double our work force for our next trip to the QSBG to sort out bee specimens in their depository and move them to our facility to process.

Impact of COVID-19 pandemic on project implementation

The project has been conducted consistently from the beginning in November; however, intermittent university shut-downs from COVID-19 situation has delayed our works slightly. The shut-down of the university prohibited us from gaining access to collection, photographic equipment, and computer including server for database storage. Also, the shut-down by the QSBG delayed our initial trip to the botanical garden to obtain bee specimens at their depository. This interrupted us moving all 3,000 bee specimens back to our lab in Bangkok. Additional trips to the QSBG is required to complete this task. Nevertheless, we were able to compensate the time lost and keep up with our work. We are planning to double our workforce for our next trip to the QSBG to obtain all of the specimens. In conclusion, despite the obstacles we faced during this pandemic, we are optimistic that we will achieve our goals at the end of the deadline.

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