BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 8: e134288
doi: 10.3897/biss.8.134288

OPEN ACCESS

Conference Abstract

Advances in the Digitization and Mobilization of Natural History Collections in Guatemala

K. Samanta Orellana[‡], Zabdi M. López[§], Jiichiro Yoshimoto[|], Maura L. Quezada[¶], Lucía M. Prado[#], Ana L. Ambrocio[#], Manuel A. Barrios-Izás[¤], Rosa Alicia Jiménez[«], Pavel García[«], Greg Post[‡], Nico Franz[‡], Edward Gilbert[»]

‡ Arizona State University, Tempe, United States of America
§ University of South-Eastern Norway, Bø, Norway
| Colección de Artrópodos, Centro de Estudios Ambientales y Biodiversidad, Universidad del Valle de Guatemala, Guatemala, Guatemala
¶ Herbario USCG, Centro de Estudios Conservacionistas, Universidad de San Carlos de Guatemala, Guatemala, Guatemala
# Museo de Historia Natural, Escuela de Biología, Facultad de Ciencias Químicas y Farmacia, Universidad de San Carlos de Guatemala, Guatemala, Guatemala
¤ Centro Universitario de Zacapa, Universidad de San Carlos de Guatemala, Zacapa, Guatemala
« Escuela de Biología, Facultad de Ciencias Químicas y Farmacia, Universidad de San Carlos de Guatemala, Guatemala, Guatemala
» Arizona State University, Symbiota, Tempe, United States of America

Corresponding author: K. Samanta Orellana (sorellana@asu.edu)

Received: 08 Aug 2024 | Published: 12 Aug 2024

Citation: Orellana KS, López ZM, Yoshimoto J, Quezada ML, Prado LM, Ambrocio AL, Barrios-Izás MA, Jiménez RA, García P, Post G, Franz N, Gilbert E (2024) Advances in the Digitization and Mobilization of Natural History Collections in Guatemala. Biodiversity Information Science and Standards 8: e134288. https://doi.org/10.3897/biss.8.134288

Abstract

Since its development in 2020, the Guatemala Biodiversity Portal (Fig. 1), generated with Symbiota (Gries et al. 2014, Gilbert et al. 2020, Symbiota Support Hub 2021), has turned into an outstanding resource to facilitate the digitization, mobilization, and use of specimen data from local natural history collections (Orellana et al. 2023). More than 50,000 records and several thousands of images from Guatemalan zoological, botanical, mycological, and paleontological collections have been shared online for the first time in this portal. An integrated Symbiota installation allows further data mobilization to the Global Biodiversity Information Facility (GBIF.org 2024a), amplifying its impact on biodiversity research at an international level. To date, more than 42,000 records have been shared from the Guatemala Biodiversity Portal (GBIF.org 2024b), promoting visibility and recognition for

national collections and researchers as shown by more than 300 citations in scientific literature, and the presence of at least 50 local collectors and taxonomists in the platform, Bionomia (Shorthouse 2020).

Figure 1.

Homepage of the Guatemala Biodiversity Portal. Available at: https://biodiversidad.gt.

Personalized training, documentation, and technical support have been key to the growing success of the portal (Orellana et al. 2022a, Portal de Biodiversidad de Guatemala 2023). Continuous leadership provided by portal managers and the Symbiota team has additionally amplified the active participation of the Guatemalan collections community. Engagement with undergraduate students has also been crucial to increasing the volume of specimen digitization. Outreach and crowdsourcing activities, as well as guided assignments and temporary internships in research projects, have contributed to transcribing most of the available data. Careful supervision by collection and portal managers, integrated data cleaning tools (Pearson 2021), and a curated taxonomic thesaurus (Orellana et al. 2022b) help maintain the accuracy of the digital records in the portal.

Furthermore, the improving accessibility to specimen data from Guatemalan collections and tailored resources in a bilingual Spanish-English interface (e.g., interactive checklists, Pearson and Walker 2021), have made the portal an important source of information, enabling local researchers to develop and share studies about the natural diversity of the country (Prado et al. 2023, Vásquez-Almazán 2023). Additional outcomes, strategies, and reflections about the dynamics of the community will be shared during the presentation.

Keywords

biodiversity platforms, specimen records, Symbiota, Latin America

Presenting author

K. Samanta Orellana

Presented at

SPNHC-TDWG 2024

Conflicts of interest

The authors have declared that no competing interests exist.

References

- GBIF.org (2024a) GBIF Home Page. https://gbif.org. Accessed on: 2024-6-27.
- GBIF.org (2024b) GBIF Occurrence Download. https://doi.org/10.15468/dl.kjp58z. Accessed on: 2024-6-27.
- Gilbert E, Franz N, Sterner B (2020) Historical Overview of the Development of the Symbiota Specimen Management Software and Review of the Interoperability Challenges and Opportunities Informing Future Development. Biodiversity Information Science and Standards 4 (e59077). https://doi.org/10.3897/biss.4.59077
- Gries C, Gilbert E, Franz N (2014) Symbiota – A virtual platform for creating voucher-based biodiversity information communities. Biodiversity Data Journal 2 (e1114). https://doi.org/10.3897/bdj.2.e1114
- Orellana KS, Gilbert E, Pearson K, Walker L, Prado L, Post G, Yost J, Franz N (2022a) Engaging underrepresented communities with Symbiota portals: The case of Guatemala. Digital Data Conference, Virtual. URL: https://www.idigbio.org/wiki/index.php/6th_Annual_Digital_Data_Conference,_Field_Museum
- Orellana KS, Gilbert E, Walker L, Pearson K, Prado L, Post G, Yost J, Franz N (2022b) Taxonomic Curation in a Multi-taxa Symbiota Portal. Biodiversity Information Science and Standards 6 (e93671). https://doi.org/10.3897/biss.6.93671
- Orellana KS, Lopez Z, Yoshimoto J, Quezada M, Prado L, Ambrocio AL, Dávila L, Barrios-Izás M, Bustamante M, Franz N, Gilbert E (2023) Digitalización de colecciones biológicas en el portal Symbiota de Biodiversidad de Guatemala. In: Schuster J, Yoshimoto J, Monzón J (Eds) Biodiversidad de Guatemala. Vol. 3. Universidad del Valle de Guatemala, Guatemala, 444 pp. URL: https://zenodo.org/records/10424127 [ISBN 978-9929-8342-2-4].

- Pearson K (2021) Data Cleaning. In: Symbiota Support Hub (2024). Symbiota Documentation. https://biokic.github.io/symbiota-docs/coll_manager/data_cleaning/. Accessed on: 2024-6-27.
- Pearson K, Walker L (2021) Checklists. In: Symbiota Support Hub (2024). Symbiota Documentation. https://biokic.github.io/symbiota-docs/user/checklist. Accessed on: 2024-6-27.
- Portal de Biodiversidad de Guatemala (2023) La Comunidad del Portal de Biodiversidad. Guatemala Portal Docs. https://biodiversidadgt.github.io/docs/comunidad/encuesta/. Accessed on: 2024-6-27.
- Prado LM, Ambrocio AL, Castillo Y (2023) Lista Actualizada de Especies de Conchas, Caracoles y Escafópodos (Mollusca) Marinos de Guatemala. In: Schuster JC, Yoshimoto J, Monzón-Sierra J (Eds) Biodiversidad de Guatemala. Vol. 3. Universidad del Valle de Guatemala, Guatemala, 228-259 pp. URL: https://zenodo.org/records/10425975 [ISBN 978-9929-8342-2-4].
- Shorthouse D (2020) Slinging With Four Giants on a Quest to Credit Natural Historians for our Museums and Collections. TDWG, 2020. Biodiversity Information Science and Standards, 4: e59167 https://doi.org/10.3897/biss.4.59167
- Symbiota Support Hub (2021) Symbiota Documentation. https://biokic.github.io/symbiota-docs. Accessed on: 2024-6-27.
- Vásquez-Almazán CA (2023) Listado Actualizado y Comentado de la Herpetofauna Guatemalteca. In: Schuster JC, Yoshimoto J, Monzón-Sierra J (Eds) Biodiversidad de Guatemala. Vol. 3. Universidad del Valle de Guatemala, Guatemala, 277-291 pp. URL: https://zenodo.org/records/10238198 [ISBN 978-9929-8342-2-4].