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Conference Abstract

Safeguarding Access to 500 Years of Biodiversity Data: Sustainability planning for the Biodiversity Heritage Library

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Abstract

The Biodiversity Heritage Library (BHL) is the world's largest open access digital library for biodiversity literature and archives. Headquartered at Smithsonian Libraries and Archives (SLA), BHL is a global consortium of research institutions working together to build and maintain a critical piece of biodiversity data infrastructure. BHL provides free access to over 60 million pages of biodiversity content from the 15th–21st centuries.

BHL works with the biodiversity community to develop tools and services to facilitate greater access, interoperability, and reuse of content and data. Through taxonomic intelligence tools developed by Global Names Architecture, BHL has indexed more than 230 million instances of taxonomic names throughout its collection, allowing researchers to locate publications about specific taxa. BHL also works to bring historical literature into the modern network of scholarly research by retroactively assigning DOIs (digital object identifiers) and making this historical content more discoverable and trackable. Biodiversity

databases such as the Catalogue of Life, International Plant Names Index, Tropicos, World Register of Marine Species, and iNaturalist, rely on literature housed in BHL. Locked within its 60 million pages are valuable species occurrence data and observations from expeditions. To make this data FAIR (findable, accessible, interoperable, and reusable), BHL and its partners are working on a data pipeline to transform textual content into actionable data that can be deposited into data aggregators such as the Global Biodiversity Information Facility (GBIF).

BHL's shared vision began in 2006 among a small community of passionate librarians, technologists, and biodiversity researchers. Uniting as a consortium, BHL received grant funding to build and launch its digital library. BHL partners received additional grant funding for further technical development and targeted digitization projects. When initial grant funding ended in 2012, BHL established an annual dues model for its Members and Affiliates to help support central BHL operating expenses and technical development. This dues model continues today, along with in-kind contributions of staff time from Members and Affiliates. Significant funding is also provided by the Smithsonian in the form of an annual U.S. federal allocation, endowment funds, and SLA cost subvention, to host the technical infrastructure and Secretariat staff. BHL also relies on user donations to support its program.

Though BHL has diversified funding streams over the years, it relies heavily on a few key institutions to cover operating costs. Though these institutions have overarching open access, research, and sustainability goals, priorities and resources to achieve these goals shift over time. Without long-term commitments, institutions may choose to prioritize new projects over established programs. Many BHL contributors have experienced funding loss for digitization projects, reducing the rate at which new content is added to BHL. Further loss of funding for central staff and technical infrastructure would reduce BHL from a data-rich technology project to an unsupported and deprecated platform. Without a long-term commitment to maintain and improve the technical infrastructure, BHL's termination would result in countless broken links from biodiversity databases, library catalogs, Wikidata, and other aggregators across the web; detrimental impact on existing third-party projects relying on BHL citation and species data; and the elimination of more equitable and free access to biodiversity knowledge.

To continue its mission, BHL must increase and improve its data integration with the wider biodiversity infrastructure and secure a sustainable future. Securing that future will require external expertise to diversify funding sources, re-engage support from existing partners, and identify new stakeholders for support. During the founding discussions of BHL, stakeholders agreed that the only way to do biodiversity science globally is through collaboration. One institution could not lead alone. Going forward, this imperative must also include collaborative funding models. Partnering with initiatives such as the Global Biodata Coalition (GBC) can lead to a stronger and more resilient biodiversity infrastructure. With ongoing collaboration, innovation, and an unwavering commitment to open access, BHL will continue to transform research on a global scale and provide researchers with the tools they need to study, explore, and conserve life on Earth.

Keywords

financial sustainability, data resources, data aggregators, sustainable funding, biodiversity infrastructure, collaboration, strategic partnerships, digitization, literature, taxonomic databases, biodiversity data

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Conflicts of interest

The authors have declared that no competing interests exist.