

Improving Collection-Based Biodiversity Research in Chile: Digitisation and Implementation of Web Portals

Ricardo A. Segovia[‡], Pablo Guerrero^{§,‡}, Francisco Squeo^{l,‡}, Juan Manuel Saez[‡]

[‡] Instituto de Ecología y Biodiversidad, Concepcion, Chile

[§] Universidad de Concepcion, Concepcion, Chile

^l Universidad de La Serena, La Serena, Chile

Corresponding author: Ricardo A. Segovia (rsegovia@ieb-chile.cl)

Abstract

Biodiversity portals are emerging as some of the most powerful tools for scientific research and management based on scientific collections. We discuss the importance of web portals in biodiversity research and highlight the commendable progress made by two digitisation projects in Chile: herbariodigital.cl and the Atlas of Chilean Biodiversity. The aim of herbariodigital.cl and ALA-Chile is to take advantage of technological advances to improve the digitisation of biodiversity data. Using cutting-edge methods, herbariodigital.cl has successfully digitised an extensive collection of plant specimens and associated data from Chilean herbaria (>25,000 specimens), promoting a more accessible and inclusive platform for researchers, educators and decision-makers.

Recognising that the complex nature of biodiversity information requires a careful approach to data storage and organisation to ensure efficient exchange across different platforms, we discuss our experience of using the Darwin Core standard (Darwin Core Task Group 2009), a widely accepted data standard in the field of biodiversity informatics. In turn, we discuss the incongruence that arises from adopting different global taxonomic checklists, such as the GBIF taxonomic backbone (GBIF Secretariat 2022) and World Flora Online (WFO 2023), in addition to a localised community catalogue. Using these different taxonomic frameworks is a significant challenge, as discrepancies and inconsistencies can arise, leading to potential under- or over-estimation of biodiversity indicators. By addressing these challenges, we believe that both herbariodigital.cl and ALA-Chile will prove to be invaluable assets for scientific research, educational initiatives, and environmental monitoring and assessment.

The comprehensive digitisation of biodiversity information will make it easier for researchers to conduct interdisciplinary studies and formulate evidence-based conservation strategies. In addition, educators will be able to use these web portals to develop interactive teaching materials, fostering a deeper connection between students

and the natural world. Stakeholders in both the public and private sectors can also make informed decisions about biodiversity offsetting.

In conclusion, we highlight the transformative impact of web portals in the field of biodiversity research. The remarkable progress made by herbariodigital.cl and ALA-Chile in digitising Chile's biodiversity information is opening up unprecedented opportunities for scientific research, education and environmental management. By overcoming the challenges of data standardisation and taxonomic harmonisation, these projects are paving the way for a more comprehensive and collaborative approach to understanding and conserving Chile's biodiversity.

Keywords

herbaria, data standardisation, taxonomy integration

Presenting author

Ricardo A. Segovia

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Author contributions

The authors are part of the design, development and implementation team of the two projects presented.

Conflicts of interest

The authors have declared that no competing interests exist.

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