Workshop Memories

"Georeferencing biological records: theory and practice" – Argentina, 2019

The workshop entitled "Georreferenciación de registros biológicos: teoría y práctica" (Georeferencing biological records: theory and practice), Argentinian version, was held using a mixed format: virtual pre- and post-workshop instances and an on-site workshop, at the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", on December 9 to 13, 2019. Originally thought to be for 20-25 participants, due to high demand, the workshop was extended to 38 effective participants.

National and thematic representation: participants were from 17 different provinces representing all regions in the country, and 27 institutions. Most participants were collection managers, but there were also representatives from the National Parks Administration and the Environment National Secretariat (Secretaría de Gobierno de Ambiente y Desarrollo Sustentable de la Nación). Participants presented a wide range of expertise regarding taxonomic groups (including terrestrial and marine taxa) and the characteristics of the locations where those taxa are collected/observed, which represented added value to the group when it came to understanding the georeferencing process and implications.

Both the trainers and the participants recognized that the interaction of people from different regions, contributing local knowledge, was key to improving the quality of the georeferences.

Trainers: John Wieczorek, Paula Zermoglio, Renato Mazzanti and Catalina Merino. The coordination for the Argentina workshop was supported by Paula Zermoglio and Anabela Plos.

Workshop development: the workshop was scheduled in three stages, one was on site and two were carried out remotely through the e-learning platform of the National Systems of the Ministry of Science, Technology and Productive Innovation (SNDB-MinCyT) of Argentina https://formacion.ssnn.mincyt.gob.ar/)

1) online pre-workshop (2 weeks),

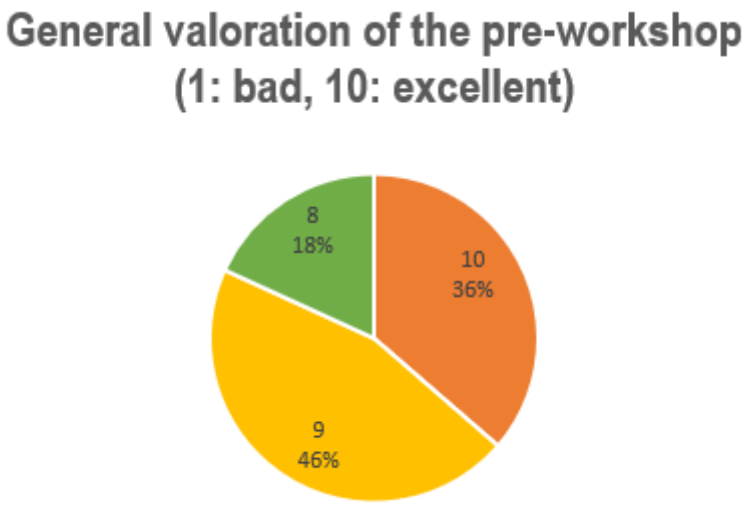
2) onsite workshop (1 week),

3) remote follow-up (2 months).

All three sections were mandatory for all participants.

The **online pre-workshop** consisted of introductory reading materials and exercises, some of which had to be handed in and received feedback from the trainers. The pre-workshop was available on the e-learning platform. The participant's mean progress in the lessons, automatically recorded by the platform, was 86%. Ninety percent (90%) of the students expressed that it was useful to have a pre-workshop, and 95% agreed that its contents were appropriate.

For the full participants' evaluation of the pre-workshop, please see:
https://docs.google.com/spreadsheets/d/1oPgYUtQKxf9qJnfKafatiltQR_h35d4wFbWJLJKoo5A/edit?usp=sharing



Amount of time for the pre-worshop: 85,7% indicate that the amount was adequate, 9,5% indicate that they want more time and just 4,8% mention they would spend less time on the pre-workshop.

The **onsite part of the workshop** was held at the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia". The activity counted with the support of the Museum, and the Sistema Nacional de Datos Biológicos (SNDB), which provided additional funds for the development of the workshop (included in the budget as co-funding). The workshop activity consisted of two days of theory presentations and exercises, one day of mixed content and discussion, in which participants were asked to resolve and present a particular topic, and two full days of onsite georeferencing.

The **post-workshop** phase involved the process of georeferencing a set of locations by participants, a practice that was supported by trainers through the platform's forum, support meetings and email. The set of locations was previously assigned according to the participant's place of residence or work. For criteria for obtaining locations and prioritization, please see Annex 1. The participants had access to the set of localities during the course phase in order to familiarize themselves with the data. Approximately 150 records were assigned per person. These georeferences were checked and corrected if needed by the trainers and incorporated into a global georeference gazetteer openly available to the whole community (see Annex 4).

For details of the locations assigned to each participant please see:

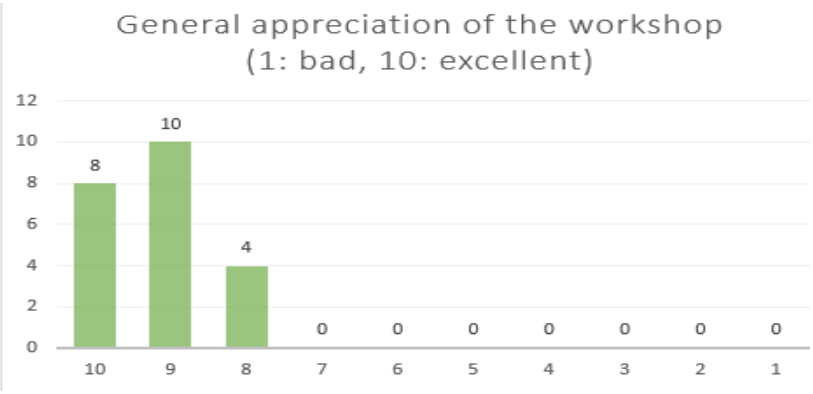
https://drive.google.com/drive/folders/1YTg7VC3JY0p-sz0ugZSOIAVNLIS79aQA

The remote follow-up is complete, with two online meetings (February 2020) for the resolution of questions and issues encountered during georeferencing. Recordings of the meetings are available at: https://drive.google.com/drive/folders/1sfPuf7cfsPZNhS16AGXS58nDOiEWRhQl

Participants survey: after the onsite workshop was completed students were asked to fill in a survey assessing the quality of the pre- workshop and the onsite workshop, please see:

https://docs.google.com/forms/d/e/1FAIpQLSff0yBKJSourBRyhjnL4ERb9fbei0PCweZ2xZTwokDWueTWRQ/viewform?usp=sf_link

General appreciation of the workshop (1: bad, 10: excellent)



Amount of time allocated to the workshop: 85,2% indicate that the amount of time was adequate

Were the theoretical contents appropriate? 100% indicate that the theoretical contents were appropriate.

What was the level of difficulty for understanding the theoretical contents? Was adequate for the 50,1 % of the participants, difficult for the 36.4 % and very difficult for the 4,5%

What topics were the most difficult for you to understand?

- Some special cases for the point-radius method
- Use of GPS and associated errors - Considerations for aquatic locations
- How to remove the measurement error! but in the end it cleared
- Marine locations
- Point-radius georeferencing method
- For those of us who do not work with coordinates, the conversion of them.

Were the practical exercises appropriate / helpful to you? 100 % of positive responses.

How was the level of difficulty of the practical exercises?

- Adequate: 14/22
- Difficult: 7/22
- Elemental: 1/22

Would you find it useful to replicate this course at your institution? 90,9% of positive responses.

What other topics are of interest to address in future training?

- Darwin Core
- Data quality and databases.
- Assembling the data sheets in DwC and publication to GBIF
- Guidelines for georeferencing protocols. Georeferencing of conflictive locations (specifically)
- Guidelines for the management and curatorship of databases of biological records.
- Ecological Niche Models
- Georeferencing on water courses

Of the 38 participants selected, 37 received the attendance certificate and 26 participants received a certificate of approval, for fulfilling the conditions of approval specified in the program. For details of the certification, please see:

https://drive.google.com/drive/folders/1C1Wks9qxk3RbJkmueLqevt9IafeWJrGP?usp=sharing

Documentation used during the workshop: documentation refinement: the workshop materials included the Georeferencing Best Practices (Chapman & Wieczorek, 2020), the Georeferencing Quick Reference Guide (Zermoglio et al., 2020) and the Georeferencing Calculator Manual (Bloom et al., 2020). For the workshop, all authors contributed to building draft versions (properly identified as such) that could be momentarily released and used by the students. From the interaction with the students and the use of these three documents by them, we took the opportunity to further refine the documents prior to their final release by the GBIF Secretariat, based on the questions and doubts that arose during the workshops.

Other opportunities: the workshop represented a great opportunity to reinforce the regional community links and to engage participants in other biodiversity data initiatives. In particular, a local, informal, off-the-clock-meeting was held for **ArgentiNat** (the Argentinian iNaturalist platform launched in late November 2019, https://www.argentinat.org/home), in which participants of the Argentinian workshop were introduced to the project and the people involved. Also, students from the Argentina course were later encouraged to participate in the Biodiversity Information Standards (TDWG) 2020 Annual Conference, introducing them to the broader standards community.

Relevant resources and references

Call: https://drive.google.com/file/d/1L6mXUH-8I8ronXRDAMV-P5H5yW8vhllZ/view?usp=sharing

Program, objectives and participant profile: https://drive.google.com/file/d/1CadGedd10638sk-eDibbH73ddf-oGw9w/view?usp=sharing

Participants: https://drive.google.com/file/d/1enUHa-5XOfVxCAmjbKyR1HSG3xovooRW/view?usp=sharing

Workshop presentations: https://drive.google.com/drive/folders/1OxZCccp5z_snbdpXClwxC71f0NmN3ui5

Workshop exercises: https://drive.google.com/drive/folders/1OSDaEBXcD4Z4pApV9JZPnq1NLrzTFAmv

Survey (on-site): https://drive.google.com/file/d/15CcKheA5S4G8SHPSAvAQjSXyRzJrM6uA/view?usp=sharing

Documentation

Bloom DA, Wieczorek JR & Zermoglio PF (2020) Georeferencing Calculator Manual. Copenhagen: GBIF Secretariat. https://doi.org/10.35035/gdwq-3v93

Chapman AD & Wieczorek JR (2020) Georeferencing Best Practices. Copenhagen: GBIF Secretariat. https://doi.org/10.15468/doc-gg7h-s853

Zermoglio PF, Chapman AD, Wieczorek JR, Luna MC & Bloom DA (2020) Georeferencing Quick Reference Guide. Copenhagen: GBIF Secretariat. https://doi.org/10.35035/e09p-h128