Organizing and Maintaining a Taxonomic Expert Network: Lessons from the Caryophyllales TEN

Nadja Korotkova ‡

‡ Botanic Garden Berlin, Freie Universität Berlin, Berlin, Germany

Corresponding author: Nadja Korotkova (n.korotkova@bo.berlin)

Abstract

The Caryophyllales TEN is one of the Taxonomic Expert Networks for the World Flora Online (WFO, worldfloraonline.org). It was initiated in 2011 with the aim to create a global taxonomic synthesys of the angiosperm order Caryophyllales (about 6% of the angiosperm species). The network currently includes about 170 scientists from 36 countries. The first priority is creating a dynamic taxonomic backbone for the order using the EDIT Platform for Cybertaxonomy (cybertaxonomy.org).

One key product is an online portal (caryophyllales.org) that serves as a single entry point for expert-reviewed information. The EDIT Data Portal is one of the software components of the EDIT Platform (see the list of reference projects for further examples). Data entry, imports and editing is managed by the Taxonomic Editor component. Web services and data exchange via standardized formats will be used to connect to international biodiversity informatics initiatives such as the Global Biodiversity Information Facility and the International Plant Name Index. The data are available in a standardized format for open data exchange.

Completed checklist projects with accompanying data papers so far consist of a genus-level checklist of the whole order (Hernández-Ledesma et al. 2015) and species-level treatments for Nepenthaceae (Berendsohn et al. 2018), Cactaceae (Korotkova et al. 2021) and *Dianthus,* Caryophyllaceae (Fassou et al. 2022). The entire Caryophyllaceae, Plumbaginaceae and the Amaranthaceae are under revision, Aizoaceae and most of the smaller families have been revised based on literature. These projects all aimed to network existing specialists for the respective families and to produce checklists that reflect the current state of research on the given group, where possible based on phylogenetic studies.

The Caryophyllales TEN is coordinated by a scientist at the Botanic Garden Berlin but otherwise has no explicit governance or committees. The experiences from the aforementioned projects allow for some general insights as to organizing and maintaining a taxonomic expert network. Whereas a scientific network is usually a relatively loose connection between collaborators with varying levels of commitment over

©

time, a strong expert network that works towards a specific product needs a firmer structure. According to our experience, five aspects are important.

1. Clarity. A clearly defined framework which can include the written summary of the rationale and the main underlying principles, detailed editorial guidelines and guidelines for contributors, best-practice recommendations, a clear outline of different roles which experts can have in the project, and requirements for authorship on resulting publications.

2. Flexibility. The framework should be defined in a way that it still allows flexible approaches to the individual projects and the roles that can account for varying levels of commitment and needs of individual researchers.

3. Community aspect. Bringing experts together regularly through in-person conferences or virtual meetings is essential to keep the network going. Participation should be open for everyone who is interested, regardless of career level and there should be different lowthreshold “entry points”. These can be participation in a conference, being invited to contribute to a checklist or seeking out other experts for collaboration. Already active experts can engage and further connect people to the network, thus creating a large and strong community.

4. Credits. Our policy is that each source is referenced and each individual contribution is acknowledged in the data paper and online portal. This aims at increasing the visibility of research results and developing best-practice approaches within the community.

5. Incentives and commitment. People will participate in such networks because they have a strong personal interest to invest their time and energy in a project that is valuable to them and aligns with their own goals. Expert networks need committed people and therefore, there must be strong incentives, for example being part of a widely known and highly visible initiative or co-authoring a key data paper.

Keywords

World Flora Online, taxonomy, EDIT Data Portal, GBIF

Presenting author

Nadja Korotkova

Presented at

TDWG 2022

Conflicts of interest

References

- Berendsohn WG, Borsch T, Güntsch A, Kohlbecker A, Korotkova N, Luther K, Müller A, Plitzner P, Mering Sv (2018) Using the EDIT Platform for Cybertaxonomy to prepare and publish a treatment for the Caryophyllales Network: an online synthesis of the Nepenthaceae. Willdenowia 48: 335-344. https://doi.org/10.3372/wi.48.48301
- Fassou G, Korotkova N, Nersesyan A, Koch M, Dimopoulos P, Borsch T (2022) Taxonomy of *Dianthus* (Caryophyllaceae) – overall phylogenetic relationships and assessment of species diversity based on a first comprehensive checklist of the genus. PhytoKeys 196 https://doi.org/https://doi.org/10.3897/phytokeys.196.77940
- Hernández-Ledesma P, Berendsohn W, Borsch T, von Mering S, Akhani H, Arias S, Castañeda-Noa I, Eggli U, Eriksson R, Flores-Olvera H, Fuentes-Bazán S, Kadereit G, Klak C, Korotkova N, Nyffeler R, Ocampo G, Ochoterena H, Oxelman B, Rabeler R, Sanchez A, Schlumpberger B, Uotila P (2015) A taxonomic backbone for the global synthesis of species diversity in the angiosperm order Caryophyllales. Willdenowia 45 (3): 281-383. https://doi.org/10.3372/wi.45.45301
- Korotkova N, Aquino D, Arias S, Eggli U, Franck A, Gómez-Hinostrosa C, Guerrero P, Hernández H, Kohlbecker A, Köhler M, Luther K, Majure L, Müller A, Metzing D, Nyffeler R, Sánchez D, Schlumpberger B, Berendsohn W (2021) Cactaceae at Caryophyllales.org – a dynamic online species-level taxonomic backbone for the family. Willdenowia 51 (2): 251-270. https://doi.org/10.3372/wi.51.51208