



Somaliland Biodiversity Foundation

Building resources *in Somaliland* for studying its biodiversity

Accomplishments 2016-2022

Biodiversity Museum

The Foundation's first step was to establish a biodiversity museum on the campus of and with encouragement from the University of Hargeisa.

- We purchased a locally made herbarium cabinet and worktable, and took over press components, several reference books, including a copy of the *Flora of Somalia*, a dissecting microscope, and a laptop computer.
- The herbarium was registered with [Index Herbariorum](#) as [HARG](#) and its records added to [OpenHerbarium](#). Shortly thereafter, HARG began sharing its records with [GBIF](#).
- A staff position was created for the herbarium and the incumbent, Faisal Jama Gelle, was sent to the herbarium of East Africa for a 3-months internship in herbarium management.
- The museum now has three dissecting and one compound microscopes plus three copies of the *Flora of Somalia* and two copies of *Biology of plants*, the last donated by Peter Raven.
- In 2022, Dr. Tharina Bird offered a workshop on "Insect collection, preservation, and sorting" which resulted in the deposition of some properly preserved insects in the museum.

Other museum related activities include the establishment of a small succulent plant collection outside the museum, publication of a new species, *Aloe sanguinalis*, and the addition of other plant and animal species to the known biodiversity of Somaliland.

Websites

- The foundation established a website, [SomalilandBiodiversity](#), that provides an overview of its activities, copies of the [annual activities reports](#), plus

access to various [articles](#) about Somaliland's biodiversity, and free [posters](#) prepared by **Tomáš Mazuch** and Helen Pickering. Unfortunately, we do not have the time or resources to maintain it as much as originally intended.

- [OpenHerbarium](#): This site aggregates data from multiple herbaria plus a few other resources. Equally importantly, we are using it to make available descriptions of the families, genera, and species of Somaliland, including, thanks to permission being granted by the Trustees of the Royal Botanic Gardens, Kew, to those in the *Flora of Somalia*. These are integrated with images, as available, for display as “taxon pages” (see., e.g., [Bacopa monnieri](#)). The family treatment reflects that of APG4 and the descriptions in the *Flora* are modified as necessary, as are description of genera whose boundaries have changed. In addition, new records for Somaliland are added to the website as they come to our attention.
- [OpenZooMuseum](#): This site is not as well-developed as OpenHerbarium, but we are promoting its used for sharing documented information about Somaliland's animals with the world. Many of the records exist only in a database.
- [KeyBase](#). The identification keys in the *Flora of Somalia* are being posted to [KeyBase](#) where they are linked to the relevant taxa in OpenHerbarium. They are modified if necessary to reflect changed taxonomic interpretations.

Introduction to the plants of Central Somaliland

- In 2018, Helen Pickering and Ahmed Awale published the first wildflower book for Somaliland. It was followed in 2019, by a Somali version, thanks to work by Faisal Jama Gelle. The book is written for a general audience and includes photographs and simple descriptions of 150 species, both native and naturalized, that grow in Somaliland. Many of the species, including the native species, also grow in adjacent countries, in many of which Somali is spoken by most of the population. Both versions are now sold out.

Teaching

- Since 2019, Faisal Jama Gelle has been teaching a basic course in plant taxonomy for the College of Agriculture and Veterinary Sciences at the University of Hargeisa. The Foundation has provided a projector, hand

lenses, dissecting needles, and forceps for use in the class. The museum's three dissecting microscopes are also made available for use by the class.

- In 2022, Barkworth discovered the university has no introductory teaching laboratory for the class. In 2023, the Foundation started to remedy the situation by providing moveable lab tables for use in a space that was available. The next goal is to provide it with suitable chairs.



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Plans for 2023-2024

Increase the Foundation's visibility in Somaliland

Abdisalam Yassin Mohamed, a founding member of SBF, initiated the idea of a series of videos explaining what SBF is doing in Somaliland. They will include an introduction, questions, and comments in Somali but will involve both Somali and English speakers. Some will focus Somaliland's plant and animal diversity, some on interactions with other Somaliland-based organizations.

Planning is in its initial phases, but the first video, an interview with Barkworth about the Foundation, has received thousands of views and received favorable comments.

Books

- Publish second edition of *Introduction to the plants of Central Somaliland*. The first edition is now out of print and there is considerable demand for it. The second edition will differ from the first in:
 - Being published as a single, bilingual version.
 - Having additional photographs.
 - Providing information on currently accepted scientific names for those that have been changed.
 - Correcting some errors discovered in the first edition.
- Start preparing the manuscript for an illustrated, bilingual introductory plant taxonomy text featuring Somaliland's most abundant plant families. Reasons for making this a Foundation focus include:
 - No such text is currently available.
 - Somali is the first language for most people in Somaliland as well as for many other parts of the Horn of Africa.

Improve the teaching laboratory: chairs

- The lab benches make adopting a “hands-on” teaching approach easier, but most of the chairs are badly damaged. Several are designed for taking notes; none allow height adjustment. The amount required to provide a better chair for each station in the laboratory is \$ 5000. The figure shows a) the lab benches and b) some of the chairs.



Continue developing the Biodiversity Museum

Development of the museum has been hampered this year by problems in transferring money to Somaliland. We are attempting to resolve them. The following are goals for the museum.

- Verify or correct georeferencing of records from Somaliland in OpenHerbarium. Several records are mapping outside Somaliland. When possible, these will be corrected.
- Develop a formal collaboration with the Somaliland Botanical Garden (SBG). SBG is a newly established garden close to Hargeisa. It extends over a large area, much of which includes excellent examples of native plant communities.

Explore development of community-based sources for native saplings, seedlings, and seeds.

Reestablishing Somaliland’s vegetation will increase local climate resilience and food security, but it is difficult at present because there are no sources of seeds, seedlings, or saplings for most of the species involved. Developing community-based sources of such materials could become a source of income while encouraging skill development and establishment of small, local restoration sites.

The foundation’s immediate goal is to learn effective practices from existing community seedbanks for agricultural species, and identify the additional skills needed to extend these skills to develop plant material banks for native species. The knowledge acquired will be used to develop appropriate plans for the

necessary training modules, budget development, identification of potential partners and locations for a few pilot projects.