



Somaliland today, in the grip of drought

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November 2016 Newsletter

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Featured Species

Lasiosiphon somalensis
var. somalensis



Somali names: balle, burtan, fainka-dajiss, halmute, hara-bunla, harmab, madax-caseeye, saragali, usar, xarmale.

The many Somali names suggest this attractive species is noticed wherever it grows. It has also been used to treat tuberculosis but there are no data on its medicinal value.

The plants grow to about 80 cm tall and are often grazed. They would make attractive garden plants. [Click here](#) for more.

The Rains Failed, Again

The Horn of Africa is in the grip of a severe drought. Both the main and the secondary rainy seasons (*Gu'* and *Deyr*) failed this year. This followed several years of below normal rains accompanied by environmental degradation as people seek to maintain their livestock. The consequences are particularly severe for rural people who depend primarily on their livestock for and secondarily on crop production. In Somaliland alone, an estimated 300,000 households are now facing critical, if not emergency, levels of food insecurity. The worst hit areas are the eastern regions: Sanaag, Togdheer, and Sool.

The severity of the drought has led to major cross-regional migration. Some migrants seek food and water for themselves and their animals; others, having lost all their livestock, drift to the towns where they join the urban destitute. Villages are home to an increasing number of elderly, sick, and other vulnerable individuals, many of them weakened by malnutrition.

Years of overgrazing and deforestation have increased the impact of this year's drought. The most worrying trend is the loss of woody vegetation, mainly due to charcoal production. Other anthropogenic factors are the proliferation of villages/settlements and water points in the traditional wet season grazing areas. These lead to environmental degradation and reduction of available grazing land available, thereby increasing pressure on the remaining lands. Another problem is the inadequacy of the existing water infrastructure. Most existing facilities are in dire need of repair and removal of silt from their basins.

Long-term solutions to the problem caused by recurring droughts must include rebuilding the area's biological diversity. Local plants are adapted to semi-arid climates but droughts reduce their ability to grow and eventually their death. The resulting decrease in abundance then increases the grazing pressure on the remaining plants.

Restoring native plants and the soil microbes, fungi, insects and other animals that help them flourish will help rebuild the region's carrying capacity and its resilience. The Somaliland Biodiversity Foundation is committed to helping in this task.



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Somaliland's Frankincense Forests In Danger



In October, SBF Board Member Anjanette DeCarlo, Science Development Officer Stephen Johnson, and Somali forester Ahmed Derei Elmi visited the Daalo Mountains, near Erigavo, to survey the state of the frankincense (*Boswellia carteri*, *B. frereana*) forests and assess the sustainability of the resin economy.

Their observations are extremely disturbing. The frankincense trees are being massively overharvested, with far too many cuts being made per tree and the traditional rest period being ignored. Some trees are even being stripped of their bark. Not surprisingly, the trees appear to be dying rapidly, with the majority of the population either in decline or already dead.

Local harvesters and landowners are extremely worried. Clan elders and chiefs also expressed a desire for help with the situation, which has spun out of control. There is almost no regulation of the industry, either local or national. Those involved feel abandoned by the central government but it has limited resources and consequently limited ability to establish effective controls.

Recognizing that resin harvesting is an iconic part of Somaliland's cultural heritage, Anjanete was invited to give a public talk about the team's findings at the Hargeysa Cultural Center. It was attended by many people including several representing different aspects of the frankincense trade. After her presentation, [which is available online](#), several questions were asked and suggestions made as to what was needed to ensure that frankincense trees and resin harvesting continue to be part of Somaliland's cultural heritage.

Anjanette and other members of the team are now working with clan elders, chiefs, and exporting companies, and government officials to create greater representation for the harvesters, institute best practices for sustainable harvesting, and create a certifiable sustainable supply chain. They will return to Somaliland in January to hold a frankincense stakeholder meeting in Hargeisa, conduct further ecological monitoring, and film a documentary on the issue with [Vice News](#).



Donation Highlights

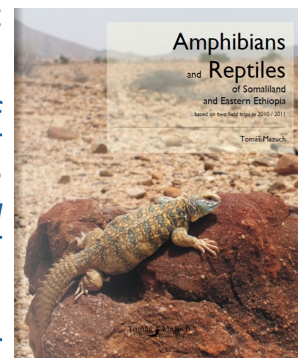
In October, **Boswellness** donated \$10,000 to help build the Biodiversity Museum's resources for studying Somaliland's plants. We greatly appreciate Boswellness' generous expression of support for the Foundation's goals. It enables us to purchase critical equipment for preserving plant specimens, supplies for adding significantly to the current holdings, and support for hiring a part-time plant collection manager. To maximize the value of the donation, we are working to find additional funds to make the collection manager's position at least half time and develop an insect collection.

In August, **Mark Gabel**, a plant taxonomist in South Dakota, donated \$500 to the Foundation. He is known for his knowledge of the state's flora and his excellence as a teacher. With his approval, the Foundation will make this money available to the collection manager to support field work that will contribute to knowledge of Somaliland's plants and the museum's growth.

The Foundation's operating costs and purchases for 2015-2016 have been covered by a donor. A further donation has been promised for 2017. Operating costs include the annual costs for registration in Somaliland and the U.S. states in which it operates. In 2017, it will register in Minnesota, New York, Utah, Vermont, and Washington.

Featured Scientist

Tomáš Mazuch has been fascinated by amphibians, reptiles, and invertebrates since he was a teenager. He is now in Veterinary School where he is conducting research in herpetology and the parasitology of reptiles. His primary interest is [*Hemidactylus*](#), an East African genus of geckoes but he is also interested in scorpions of northeastern Africa, and stapeliad plants (*Apocynaceae*) and the genus *Aloe* (*Asphodelaceae*) in the Horn of Africa. He has authored or co-authored several scientific papers concerning [herpetology](#), [scorpions](#), and parasitology. In addition, he has created a Facebook Group, [Nature of the Horn of Africa](#), for sharing pictures and observations the region's species and has published a beautifully illustrated book on [Amphibians and Reptiles of Somaliland and Eastern Ethiopia](#). Many of his images and comments are included, with his permission, in [OpenZooMuseum](#) and [OpenHerbarium](#).



The Biodiversity Museum Gets Started!

Establishing a biodiversity museum in Somaliland was SBF's initial priority. It is now on its way. In 2015, the University of Hargeisa provided space, office furniture, and an ethernet outlet. Since then, the Foundation has used donations to provide supplies and equipment for making plant specimens, reference books, microscopes, GPS units, a camera trap, small cameras, a work bench, and a cabinet for holding plant specimens during processing. By working with Candlelight Organization, this has enabled the museum to start building its plant collection. The funding from [Boswellness](#) is going to help it grow much more rapidly.



In October, we were delighted to find individuals in Hargeisa familiar with plant museums,

delighted that one is being developed in Somaliland, and willing to assist in its growth and development.

Two museum-based projects are underway. [One](#) is to document, label, and share information about the campus plants. The second is to develop an online resource relating Somali and scientific plant names.

We are also focusing on securing the funds to hire, in conjunction with the university, a plant collection manager to add to the existing collections, offer workshops and courses on plant identification.



Landscaping the University of Hargeisa Campus

This year, the University of Hargeisa's administration has made a major investment in the campus landscape. The results are evident to all who visit. The first steps included building a water tower that serves the university's buildings as well the plantings and banishing goats. With those steps accomplished, new and improved paths were developed, plants established, lawn areas developed, and benches built so students, visitors, and staff can meet together to talk and enjoy the calming impact and cooler temperatures of the increasingly green environment. The benefits do not stop there: looking at nature makes people smarter (studying is also needed). The Somaliland Biodiversity Foundation applauds the university management for making the campus more attractive and looks forward to encouraging students to both enjoy and learn from the campus' plants.



Learning from Campus Plants



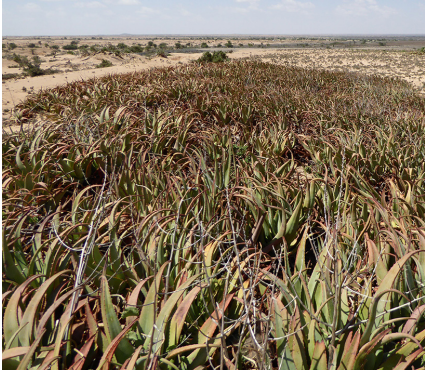
The most critical step in plant research is accurate plant identification. Campus plants can be used to teach how to recognize individual species, identify species not encountered before, and develop familiarity with the characteristics of different plant families. To encourage use of the campus plants in this way, SBF has started a project to place metal labels close to the planted species showing their name and family membership and make herbarium specimens and images of all species present on the campus, including the weedy species.

Pictures and descriptions of all the species will be posted to [OpenHerbarium](#), where they can be used to generate flash card quizzes. The picture on the left shows *Pergularia daemia*, a weedy species growing outside the museum. It is a typical member of the family *Apocynaceae*, subfamily *Asclepioideae*. There are about 85 species of the family in Somaliland and 55 more in Somalia.

Biodiversity News

The Somaliland Biodiversity Foundation is dedicated to building resources for learning about the vast array of species - plants, animals, fungi, microbes, and fungi - that exist in Somaliland and adjacent regions. It was founded in 2015. Much of its first year and a half has been taken up with paperwork but we highlight here a few activities and observations of a more scientific nature that have taken place.

Dacar Cas/Red Aloe: a new species?



In 2014, SBF President Ahmed Awale spotted an Aloe near Alaa Adaka that differs from other aloes. Locals call it “Dacar Cas” or “Red Aloe”. In October, 2016 Ahmed revisited the site with Abdikani Suleiman (Candlelight Organization) and Mary Barkworth (SBF). After confirming that the Red Aloe did not match any of the species described in the *Flora of Somalia* so they sent pictures of it to John Lavranos (author of Aloe in the *Flora*) and others familiar with Aloes in the region. All agreed that it is either a hybrid or an undescribed species.

Awale and his colleagues are now waiting for the native populations to flower so they can describe the flowers and determine whether they are setting seed. They also plan to engage students in research on its reproductive biology.

Parthenium hysterophorus

Parthenium hysterophorus is native to the Americas but is now a noxious weed in the arid and semi-arid tropics, including Somaliland and its neighbors. It causes dermatitis and respiratory problems in humans, makes milk bitter, and inhibits pollination of crops such as tomatoes and beans. A single plant produces 10–20,000+ small seeds that are easily transported by people, vehicles, and animals. It seems to have spread very rapidly because it was not included in the *Flora of Somalia*. Current [control methods](#) call for removal and ongoing vigilance because the seeds remain viable for many years.



Are Unpalatable Plants Spreading?



Ahmed found another plant near the [Red Aloe](#) that was new to him. It has since been identified as *Senna baccarinii*. What concerned Ahmed is that, in addition to a 3m specimen, there were several small plants present and none of the plants were being grazed. Is this species, and other unpalatable species, spreading? It seems likely but the only way to find out is to record existing populations and monitor them. They should definitely not be planted as ornamental species, a suggestion that has been made for *Senna baccarinii*, until more is known about their behavior.



Sharing Information

Today, scientific information is increasingly being shared via the web. Sharing increases the value of an individual's efforts while making better data available to decision makers. It requires data be recorded according to internationally agreed standards. The Somaliland Biodiversity Museum are sharing information via two web sites, [OpenHerbarium](#) and [OpenZooMuseum](#). The sites are young. They, like the museum itself, will become more valuable as more people contribute to them.



We Need Your Support!

In 2017, the Foundation hopes to expand the museum to include insects; offer workshops on plant and insect identification; and involve students in research and outreach activities.

We can only do so with your support! Become a member, help purchase equipment, or fund development of academic and research opportunities. The Foundation's [web site](http://www.somalilandbiodiversity.org), <http://www.somalilandbiodiversity.org>, provides links for becoming a member and making donations or write to us at the address below. The Foundation is approved as a 501(c)(3) organization in the U.S.

Equipment needed, and the program involved, include

- Collecting equipment for both plants and insects (Teaching)
- Dissecting forceps and needles (Teaching)
- Microscopes (Teaching)
- Document reader (Teaching)
- Dissecting microscope on a long boom (Museum)
- Camera traps (Museum)
- Insect storage facilities (Museum)
- Field vehicle (Museum)



Make Your Support Visible

Want to make your support for the Foundation visible? Purchase [items bearing the Foundation's logo](http://www.zazzle.com/somalilandbiofdn) on Zazzle (www.zazzle.com/somalilandbiofdn) set up by Sandy Long. All royalties and referral premiums generated from such purchases will be donated to the Foundation. Purchase costs are not tax deductible.



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The Somaliland Biodiversity Foundation is registered as a 501(c)(3) organization in the United States