



## **CASE STUDY: TILLANDSIA XEROGRAPHICA**

### **AUTHORS:**

Mygdalia García and Hiram Ordóñez Chocano

Species: *T. xerographica* Rohw.

Common name: Gallito, Clavel del Aire.

*Tillandsia xerographica* is a slow-growing xerophytic epiphyte. It is native and endemic to Central America and restricted to semi-arid regions, mainly dry and very dry subtropical forest and subtropical thorn scrub in the south of Mexico, Guatemala, El Salvador and Honduras. It grows at elevations between 140 and 600 m, with average temperatures ranging from 22 to 28 degrees Celsius, annual rainfall between 550 and 800 mm, relative humidity from 60 to 72% and annual evapotranspiration between 600 and 800 mm.

In Guatemala, this region is represented by the Departments of Progreso, Zacapa and Chiquimula, in the center and northeast of the country, and especially in the semi-arid region of the Motagua River valley. This area covers an approximate surface of 928 Km<sup>2</sup> (200,000 ha) and contains a type of vegetation with unique features. The survival of *Tillandsia xerographica* directly depends on the existence of host trees, mainly mature trees or shrubs over 20 years old with a rough bark and a DBH greater than 5 cm.

Deforestation is one of the greatest threats to the survival of *T. xerographica* in the wild; Guatemala loses approximately 73,148 ha to deforestation every year, which amounts to an annual deforestation rate of 1.43%. Moreover, the Departments of Zacapa and Chiquimula are among the five with the greatest loss of forest cover in the country. The species is considered Threatened by the IUCN and is listed as a Criterion 1 species (Endangered) by CONAP (the National Council for Protected Areas) in Guatemala. Current population estimates are 125 plants/Km<sup>2</sup> according to Schürmann, Gouda and Hromadnik, and 140 plants/ha according to Pérez – both reports published in 2004 – so the species is considered to be biologically extinct. Only 1371 ha of forest in the habitat of the species are protected – in nine private protected areas and three municipal protected areas. The species is mainly used as an ornamental plant.

Although the commercial harvest of *Tillandsia xerographica* in Guatemala is not permitted, there are specific regulations in place for the harvest of parental stock, in Article 36 of Decree 4-89 of the Law on Protected Areas and Article 48 of Government Agreement 759-90, Regulation of Decree 4-89.

Case No. 1. According to Article 48 of the Regulation, obtaining parental stock directly from the wild is subject to an application including an inventory of the species. The inventory must be prepared by a Professional Technician hired by the applicant and serves as the basis for the necessary field verifications and technical and legal advice.

Depending on the results obtained, up to 50% of adult plants existing in the area reported may be authorized for collection.

Case No. 2. Parental stock may be obtained directly from the wild through a procedure for Special Uses laid down in Article 36 of Decree 4-89 of the Law on Protected Areas. This type of application is usually made when there is a Licence for Forest Use, authorized by the National Forest Institute of Guatemala. In this case, the procedure is the same as in Case No. 1, with the additional requirement that the application for the harvest authorization must also include an authenticated copy of the Licence for Forest Use explaining the type of use planned (clear cut logging, selective logging, opening of tracks, etc.). The harvest of all the plants is only authorized once the inventory has been verified.

Over the last fourteen years, the harvest of *Tillandsia xerographica* from the wild has only been authorized on two occasions, always through the procedure for Special Uses. Given the considerable decline of the populations of the species in its range, it is very unlikely that any harvests will currently be authorized through the first system. In the procedure for Special Uses, the harvest is considered to be a case of salvage.

Regardless of the system through which harvest from the wild is authorized, monitoring visits always take place before, during and after the harvest; besides, the plant harvested is only authorized for use as parental stock.

Internationally traded specimens of *Tillandsia xerographica* are the offspring or shoots produced by parental stock held in registered nurseries. Since 2005, the Guatemalan authorities have established voluntary quotas for trade in the species to ensure its sustainable management and avoid the introduction of wild plants into nurseries.