A new record of *Turnera stipularis* in Amazonia could lead to a misinterpretation of its conservation status

Turnera stipularis (family Turneraceae) is an erect shrub up to 2 m tall with small, yellow flowers arranged in the axils of its branches. The species was described 140 years ago and until now was known from only eight subpopulations, along river banks in the Cerrado of Maranhão state in north-east Brazil. Only one of these populations occurs in a protected area (the Chapada das Mesas National Park). The conservation status of *T. stipularis* has not yet been assessed for the IUCN Red List, but our preliminary assessment suggests it should be categorized as Endangered under criterion B (geographical distribution) as its area of occupancy is < 20 km^2, it is known from < 10 localities and the quality of its habitat is declining (Maranhão is on the western edge of the Cerrado in the Arc of Deforestation).

In December 2022, during a herbarium review of the Turneraceae species from Maranhão, we discovered a new record of *T. stipularis*, from the state of Pará, c. 700 km from the previously known populations in Maranhão. This new record expands the distribution of this species to Amazonia. Inclusion of the new record in our preliminary assessment, based only on criterion B, indicates the species would be assessed as Near Threatened rather than as Endangered. However, this new population occurs in the municipality of Altamira, near the Belo Monte Hydroelectric Power Plant, an area of conflicts involving illegal mining and environmental degradation. Thus the new record does not necessarily indicate an improved conservation status, but rather indicates threats additional to those the species is subject to in the Cerrado of Maranhão.

Turnera stipularis, from the state of Maranhão, with inset showing the flower (photos: Alessandro W. Ferreira).

Existence of a previously unknown population of *T. stipularis* in Amazonia offers a greater chance of conserving the species, as the great distance to the previously known populations implies additional genetic variability. Although we now know *T. stipularis* has a wider distribution, the species is still threatened, demonstrating that geographical distribution cannot be the only tool used to assess conservation status, as it can mask critical local threats. This new record also reinforces the importance of herbarium collections for documenting the distribution of species and supporting conservation action.

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Nature-based solutions to improve water security in northern Mexico

The city of Monterrey, Mexico, has faced extreme water stress in recent years. In 2022, reservoirs were nearly empty and household taps were dry for up to 75 days in some neighbourhoods, reaching crisis levels for many citizens, particularly the poor.

Improved water infrastructure is a necessary part of the solution to this problem, and the state government of Nuevo León is constructing pipelines, wells and dams to increase water supply. But in a changing climate with increasingly unpredictable rainfall, nature-based solutions offer a chance to improve the hydrological cycle to increase water availability for both people and nature.

In November 2022, Terra Habitus A.C., a civil society organization in northern Mexico, announced a partnership with a group of business leaders in Monterrey and the state of Nuevo León, to implement the Santa Catarina River Recovery and Regeneration Project for the City of Monterrey. Together the entities have raised MXN 25 million (USD 1.34 million) to improve the hydrological cycle in the 111,300-ha Santa Catarina River basin. Objectives include increasing water security, recharging natural aquifers, mitigating the risks of catastrophic flooding, and regenerating an urban riparian corridor as a 700-ha metropolitan park to benefit more than 5.3 million citizens.

The project has multiple components, including a comprehensive study of the regional aquifer and its recharge potential, forest management and erosion control throughout the basin, development of a payments for ecosystem services programme, and a GIS application to guide decision-making and monitor progress.

Nature-based solutions will allow the Santa Catarina River Recovery and Regeneration Project to address water security while providing numerous co-benefits, including increased resilience to drought, floods and catastrophic wildfires; improved water quality; habitat provision; and recreational amenities.

For more information about the project or to contact the Terra Habitus team, visit terrahabitus.org.mx.

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