

Alessandro Mosco
Azienda Sanitaria Universitaria Integrata di Trieste
I-34100 Trieste, Italy

22 April, 2017

Dear Alvarez,

I wish to submit an original research article entitled “Niche analysis of *Thelocactus*: specific habitat requirements and niche conservatism of a Mexican genus of globular cacti.” for consideration by the *Revista Mexicana de Biodiversidad*.

Thelocactus is a Mexican genus of globular cacti typical of the Chihuahuan Desert. Cactaceae are a characteristic feature of Mexican landscape and are widespread throughout the country. The largest number of taxa is found in the Chihuahuan Desert, which is considered a centre of diversity and endemism of Cactaceae. Although their distribution pattern and areas of endemism have been extensively studied, their ecology is still poorly understood. This study addresses the need of a better knowledge of cactus ecology reporting the niche features that constrain the range of *Thelocactus* species and predicting potential distribution areas. The results were obtained using environmental niche models and ordination techniques.

The results show that *Thelocactus* distribution is mainly limited by two environmental factors, isothermality and precipitation of wettest quarter, that their niches are not equivalent, with the exception of two species, and that are mainly more similar than expected by chance. This implies that *Thelocactus* species are adapted to different ecological spaces, but the high percentage of similar niches suggest a high degree of conservatism. The spatial predictions could serve to improve field design sampling to discover new populations, while niche characteristics could be relevant for improving preservation actions and guiding reintroduction programs for a better conservation of *Thelocactus* species.

This study may be of interest to researchers dealing with Cactaceae, their ecology and distribution, and as an aid in planning rescue, preservation, and reintroduction programs.

I confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere.

I have no conflicts of interest to disclose.

If you feel that the manuscript is appropriate for your journal, I suggest the following reviewers:

Rolando Bárcenas Luna
Universidad Autónoma de Querétaro, Facultad de Ciencias Naturales
rtenoch@uaq.mx

Emiliano Sánchez Martínez
Jardín Botánico Regional de Cadereyta
esanchez@concyteq.edu.mx

Please address all correspondence concerning this manuscript to me at:
amosco@katamail.com.

Thank you for your consideration of this manuscript.

Sincerely,
Alessandro Mosco