

The Predicament of the Bordas Escarpment: Ways and Means of Restoring Peyote Habitat in South Texas

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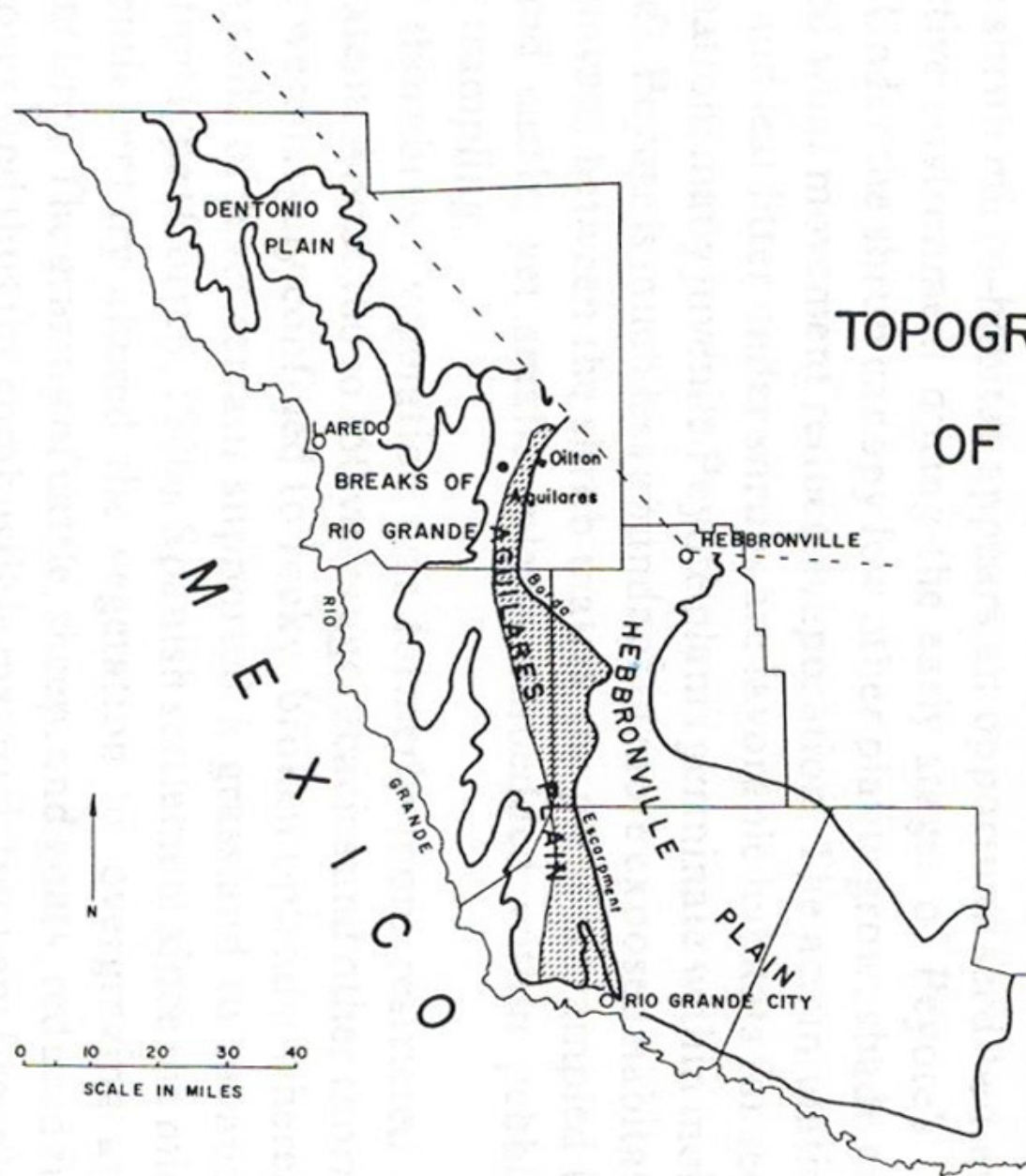
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TOPOGRAPHICAL DIVISIONS OF SOUTH TEXAS



(AFTER A. C. TROWBRIDE, 1932)









SACRED SACRAMENT

Miguel Angel Rodriguez

PEYOTE DEALER

Pagamos 7¢ or 8¢ Por Peyote

PH. 487-8449





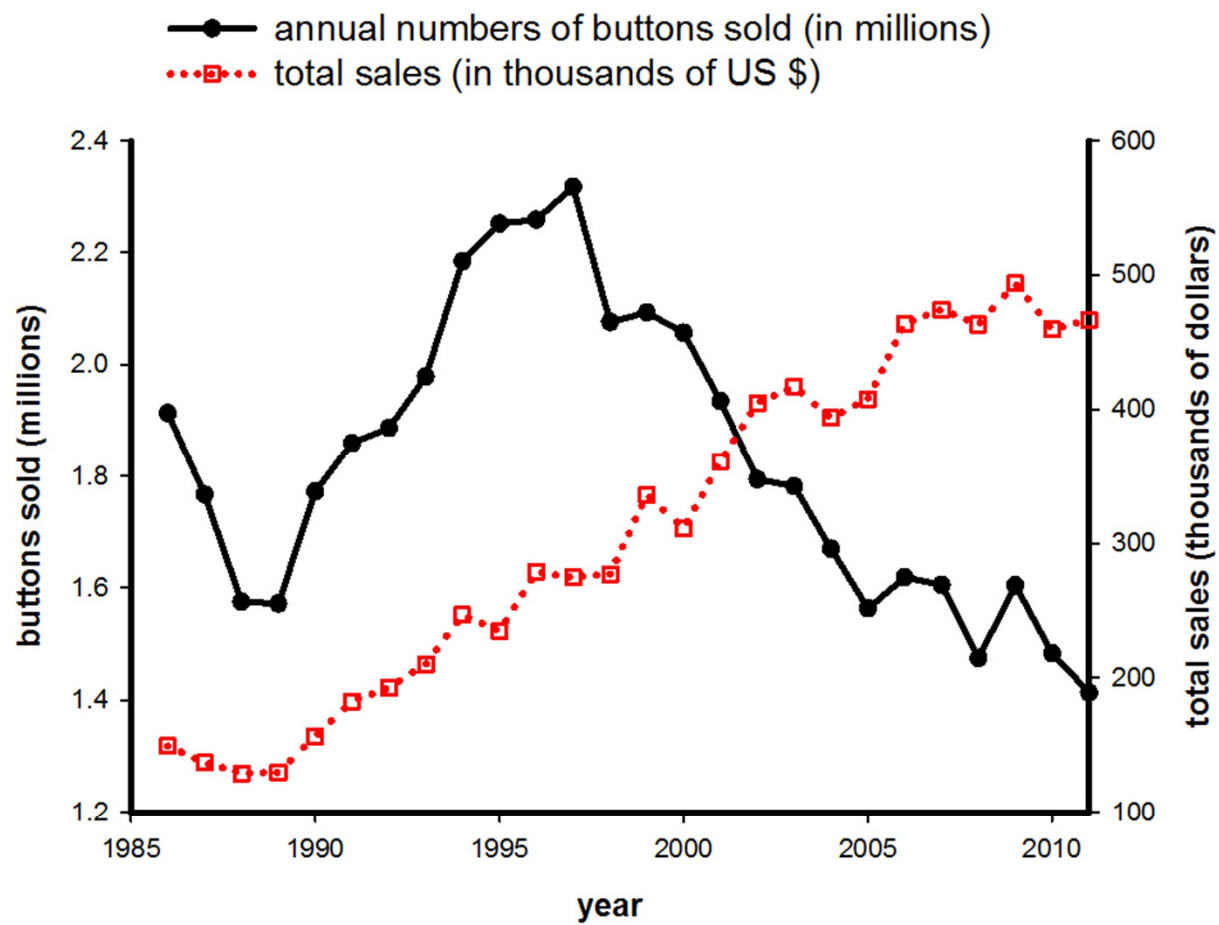






Consequences of Overharvesting Peyote

1. For the Native American Church (NAC),
scarcity of sacrament
2. For conservationists,
decimation of populations of *L. williamsii*
and degradation of its habitat





The IUCN Red List of Threatened Species™

2013.2

Lophophora williamsii



Importation of “abundant” peyote from Mexico is not a sustainable solution

- > Mexican legislation not favorable.
- > Would discriminate against Mexican indigenous groups who use peyote for religious purposes. (Political non-starter.)
- > Peyote is becoming overharvested in Mexico. To import peyote to the U.S. would be to export our own failed system of “management by extirpation” to Mexico.



Cultivation: the real solution

- Cultivation in habitat (wildcrafting)
 - > requires a large tract of land in South Texas.
 - > requires full-time personnel on the ground in South Texas.
- Cultivation in the greenhouse
 - > requires purchase of greenhouse.
 - > requires some technical training.
 - > can be done almost anywhere by local Church members.

Grafting: the key to quick seed production



Grafted peyote in the Czech Republic



There are no technical impediments to be overcome in the horticulture.



However,

there is a huge amount to be learned about the physico-chemical interactions between the companion plants (“nurse plants”) and the peyote cactus **in situ**.

How do “nurse plants” work?

The Shade Factor

- It is common knowledge that the shade produced by low-canopy desert plants decreases soil temperature and thereby increases soil moisture and water retention by the understory plants such as peyote. Higher water retention results in higher rates of photosynthesis, growth and reproduction in the “nursed” cacti.

How do “nurse plants” work?

The Microbiome

- Some fungi and bacteria secrete acid that breaks down rocks to provide needed mineral nutrients that are taken up by plants.

How do “nurse plants” work?

The Microbiome

- Some bacteria in the rhizosphere (that exquisitely thin space between soil and roots of the plant, where nutrients are absorbed and substances are secreted by the plant) enable collaborative interspecific chemistry – e.g., nitrogen fixation by *Rhizobium* and legumes.







More data on the problem of scarcity of peyote and companion plants for habitat restoration can be found at the website of the Cactus Conservation Institute:
www.cactusconservation.org

Or just Google “cactus conservation”.