

Traditional Approaches to Modifying the Environment for Productivity and Sustainability along the Santa Cruz River

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Continuities in Traditional Agriculture





Hohokam main canal in Salt River Valley with car tracks.

Excavated canal cross-section. Earlier canal is on the right.



3500 year old Tucson canal

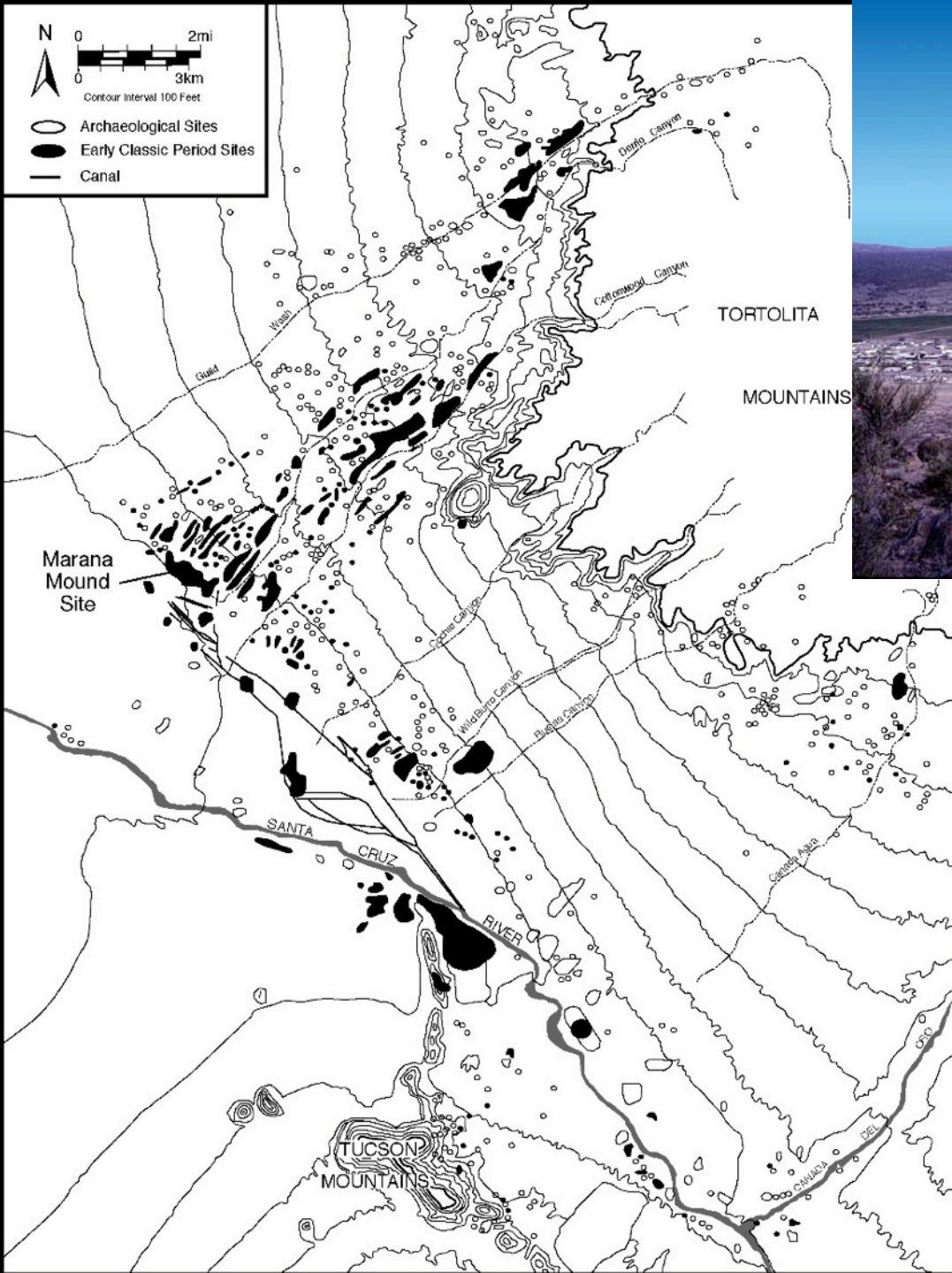


Similar size canal today

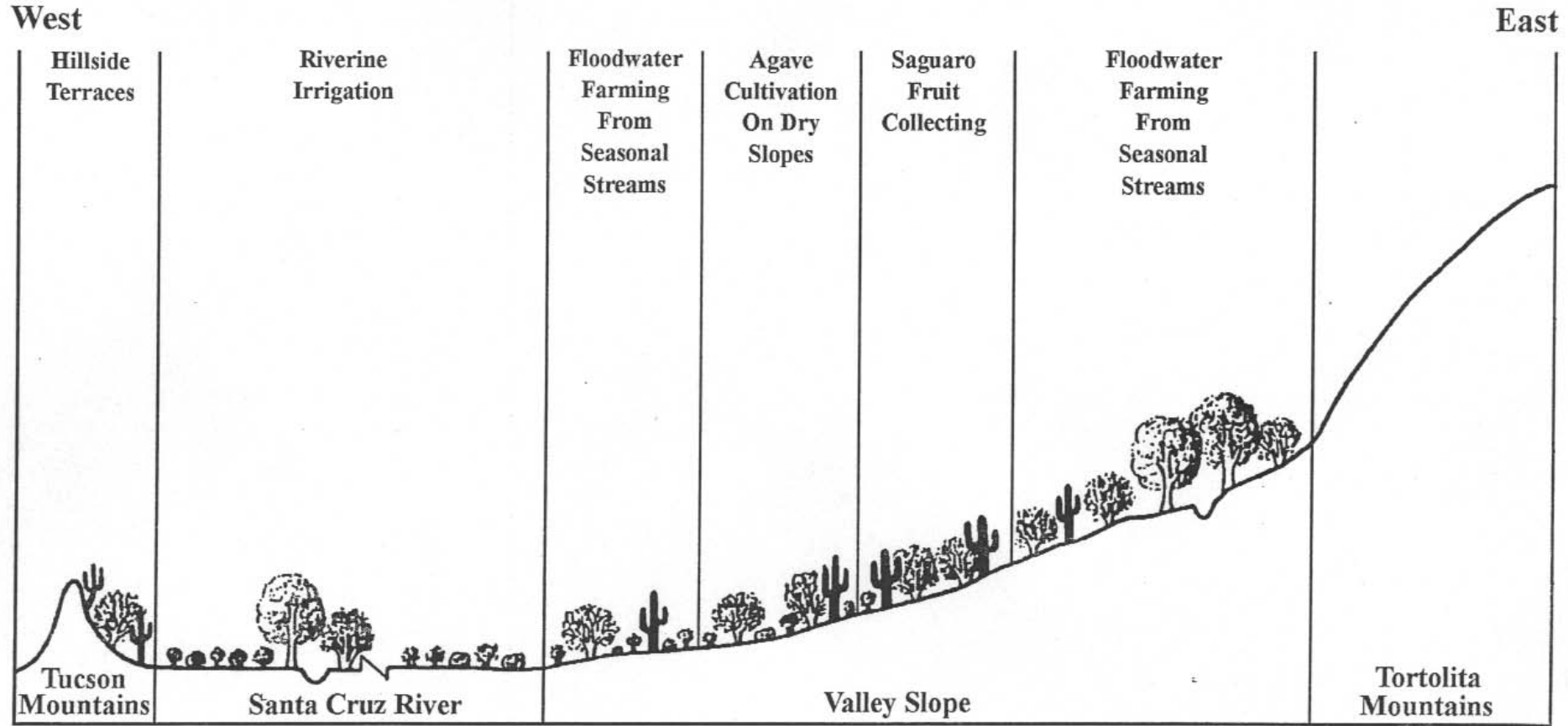
Local Sonoran systems continue this gravity-only technology.







Marana Community spans Tucson Basin from Tucson Mtns to Tortolita Mtns, A.D. 1250.



Elevational cross-section of Tucson Basin across Marana Community

Compressed Basin Zones at Tumamoc Hill



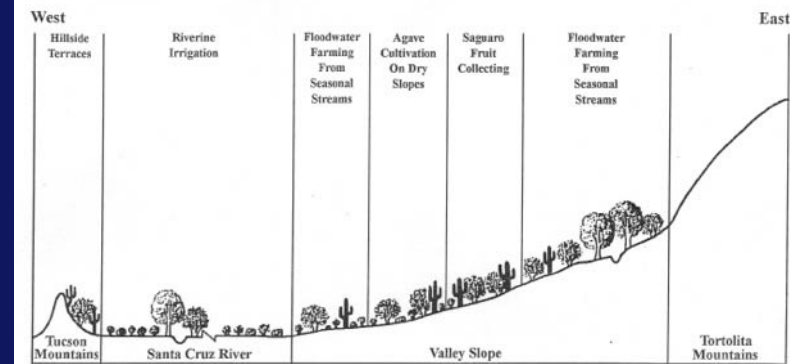




Canal intake



Irrigated floodplain





Seepage from unlined canals supports moisture-dependent species along their courses

Canal-edge vegetation and “living fencerows.”

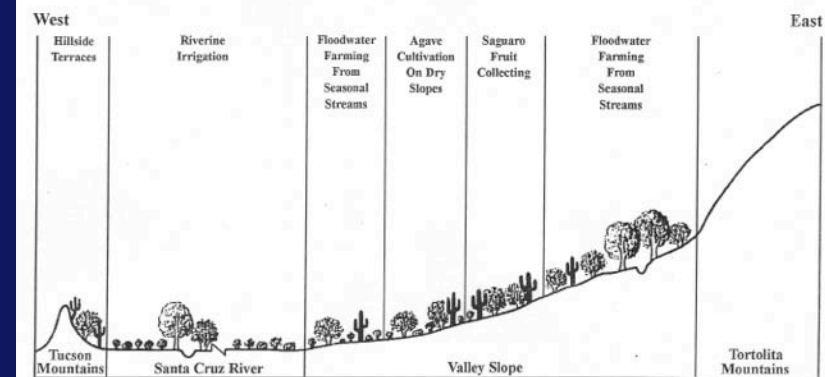




Fencerow resources and field weeds on Gila River Indian Community irrigated land.



Floodwater zone on lower slope alluvial fans







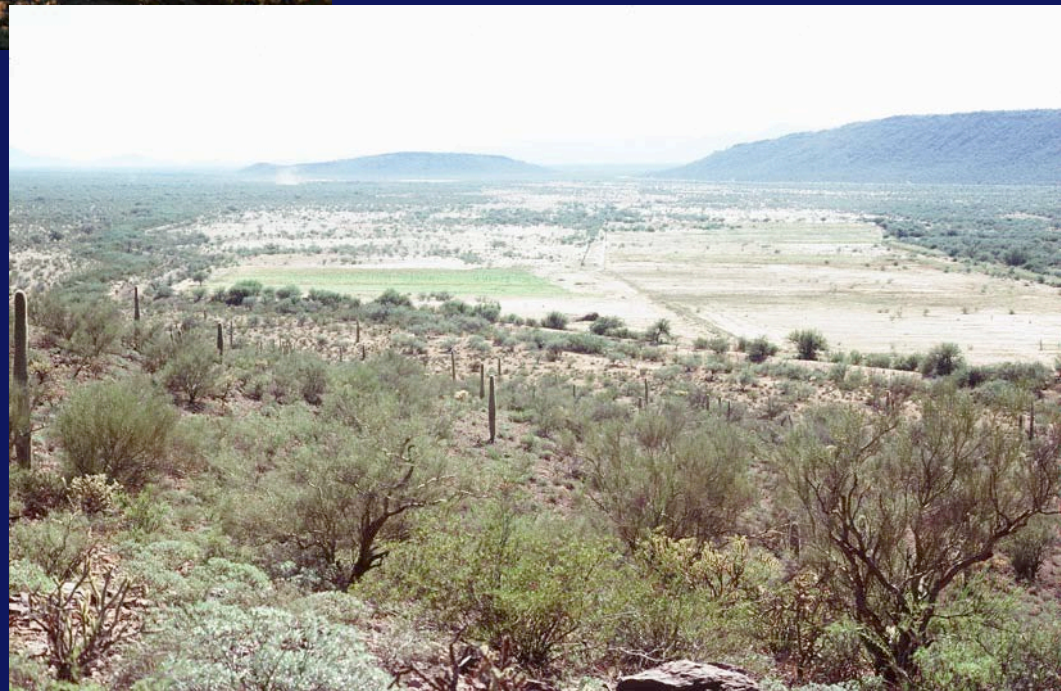
Harvesting crops from floodwater fields.

Edible amaranths at edge of floodwater field



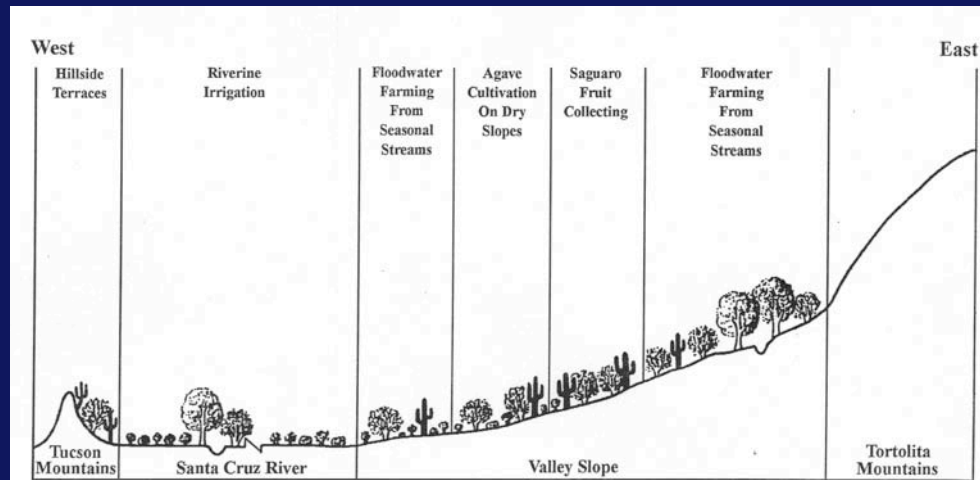


Series of Tohono O'odham
floodwater fields on low valley
slopes in mid 1960s.





Terraces and rockpiles capture surface runoff.



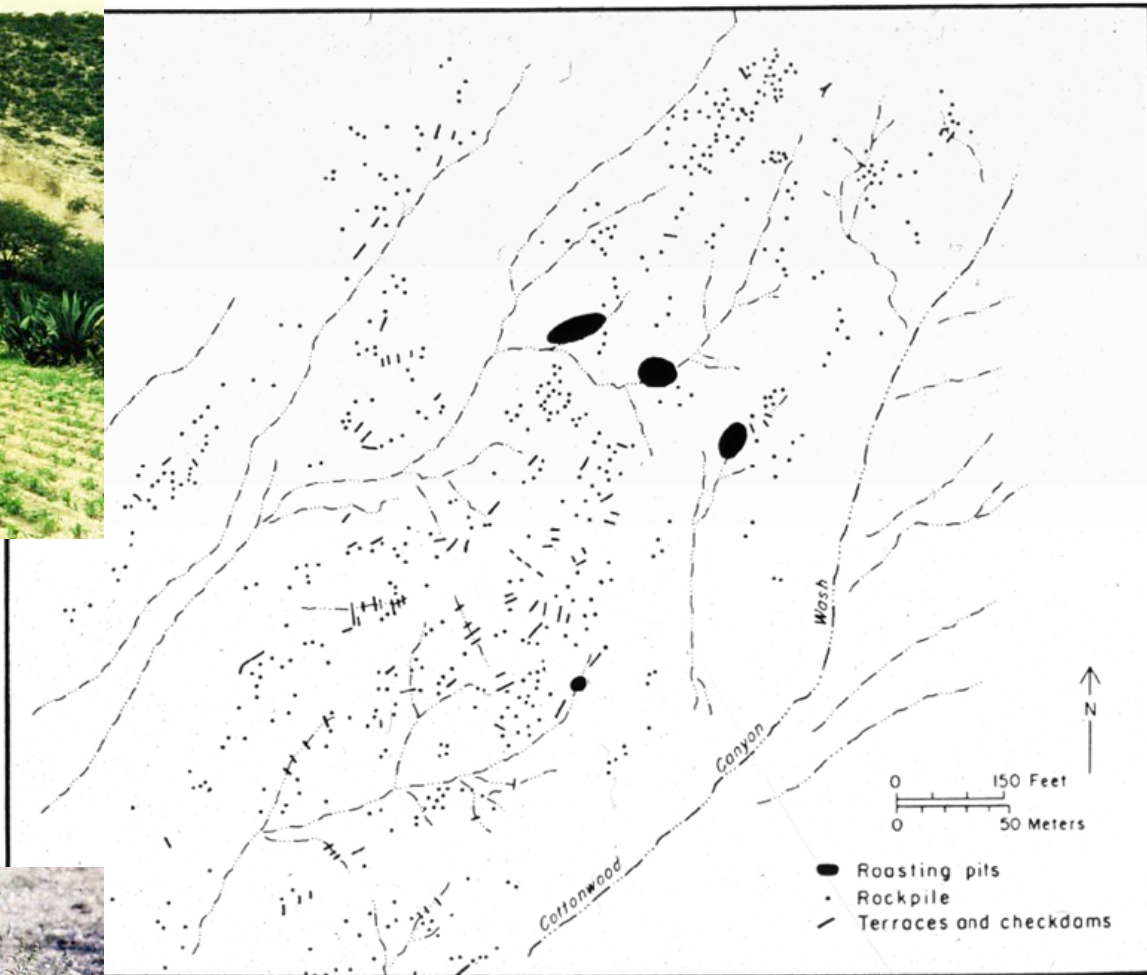




Agave in stone terraces in modern Mexican field.



Agave planted in Hohokam rockpile



Mapped segment of Marana Community rockpile field.



Pit-roasting harvested agave hearts converts stored carbohydrates to sugars.

Excavated roasting pit in rockpile field still holds ash.



Charred agave spines.



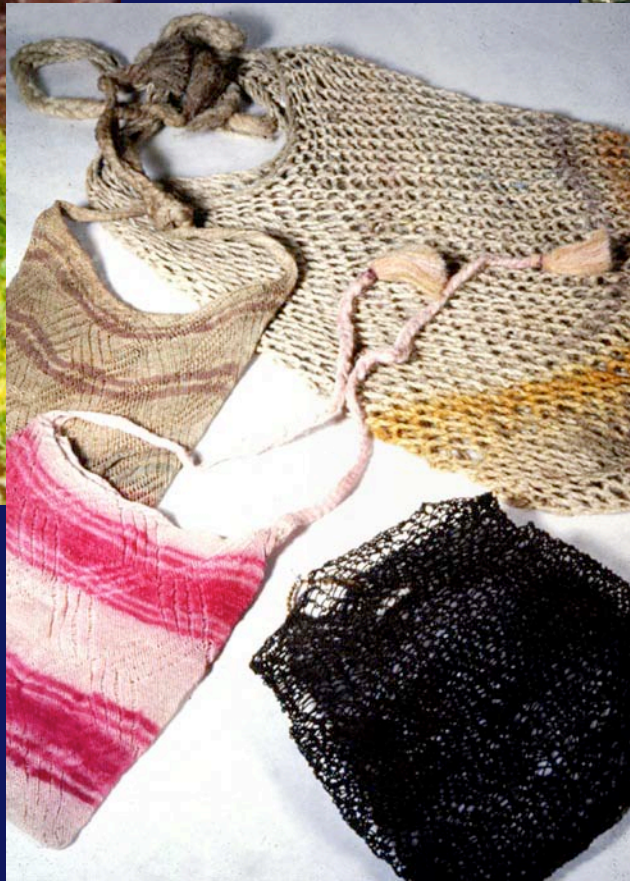


Roasted agave heart sold as sweet
In Guaymas, Sonora



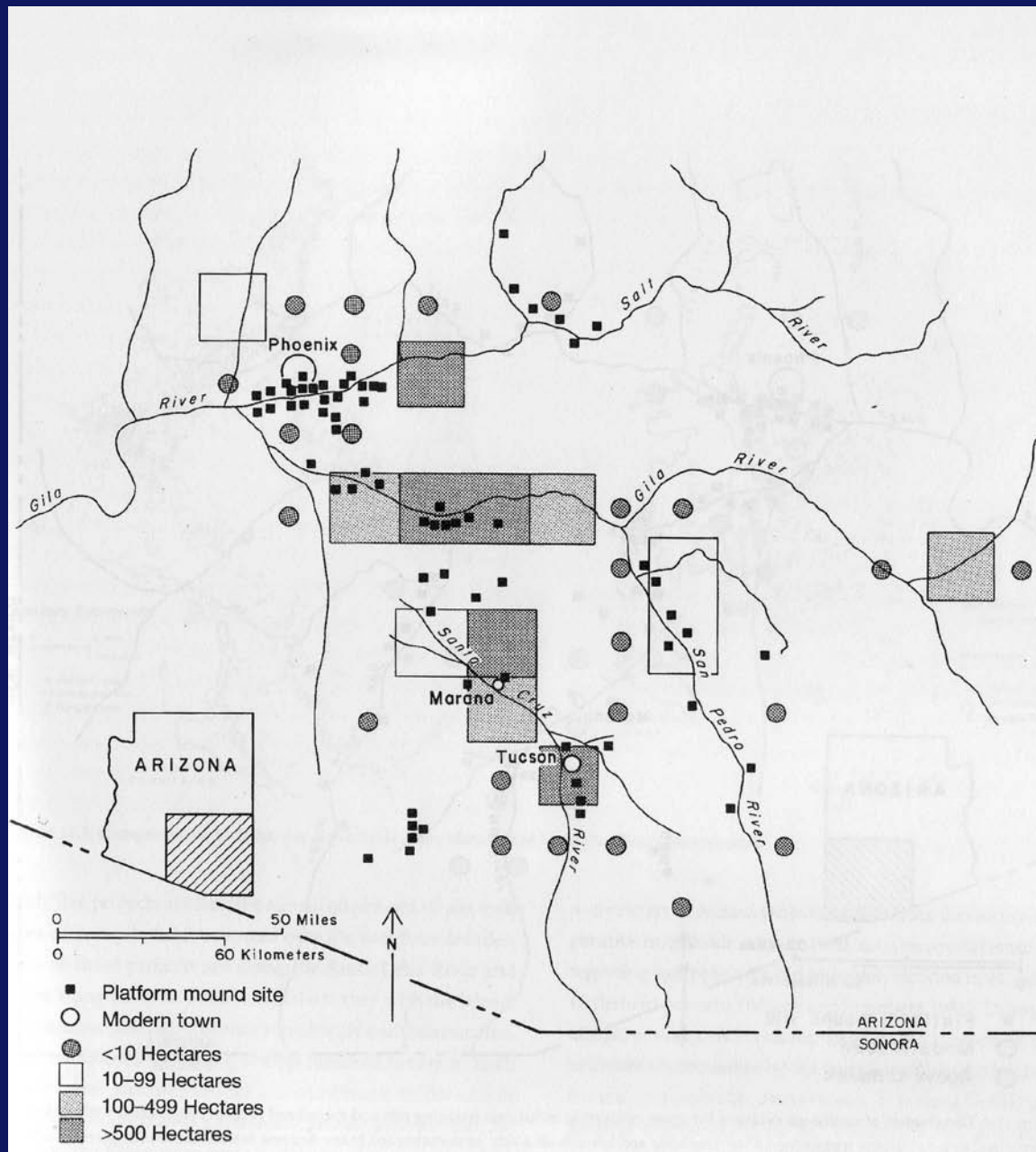


Scraping leaf to expose
fibers



Agave fiber bags

Rockpile Field Distribution





Close-up of Tohono
O'odham grids used in
1960s



Close-up of grids used by
earliest Tucson farmers.

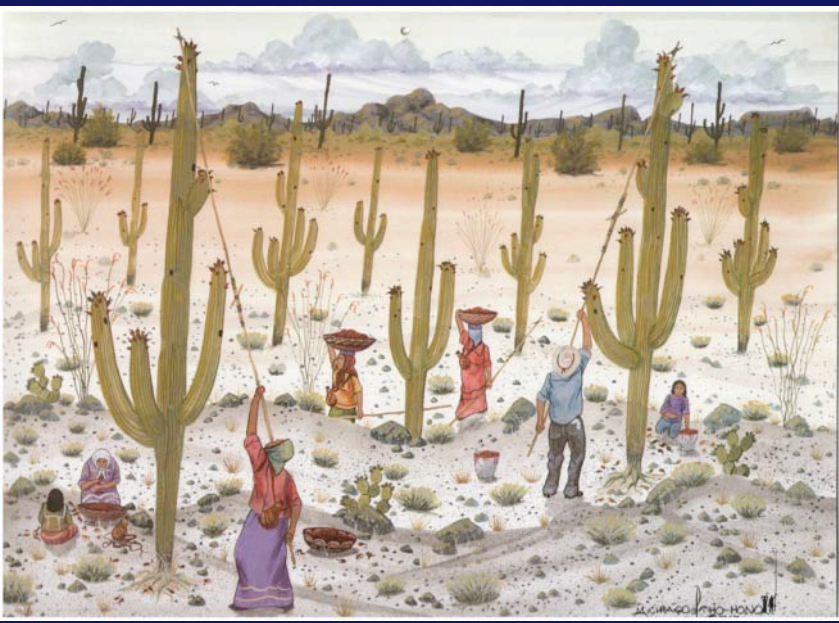
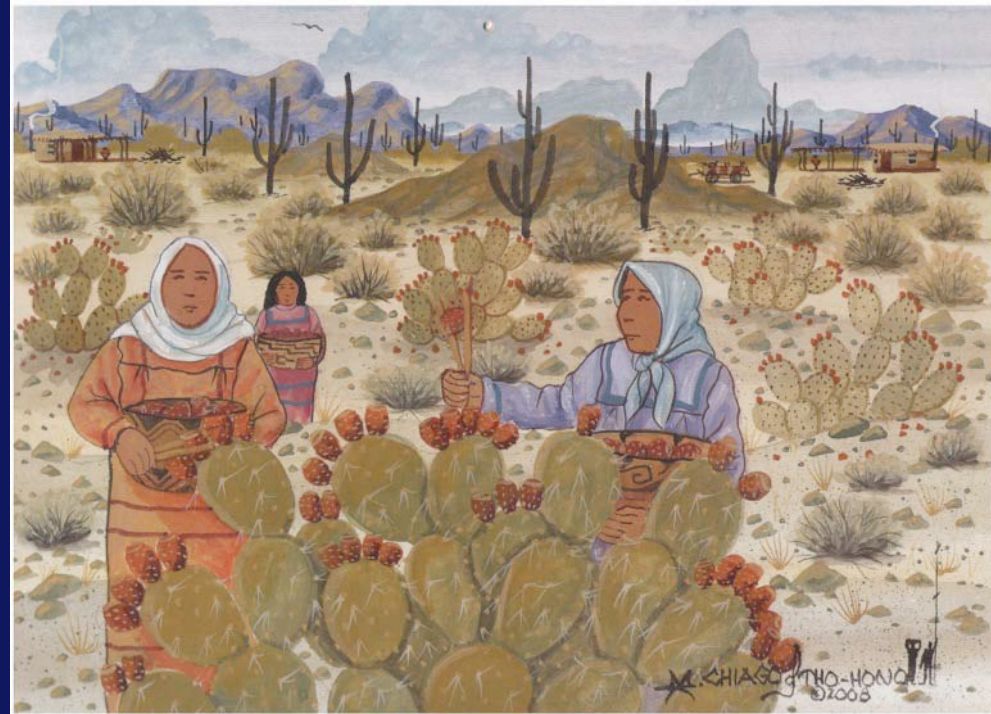








Tucson
wild plant
resources







Which plant is cultivated?