

# Affordable Gardening in Arid Climates

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AZ Health Zone Annual Conference

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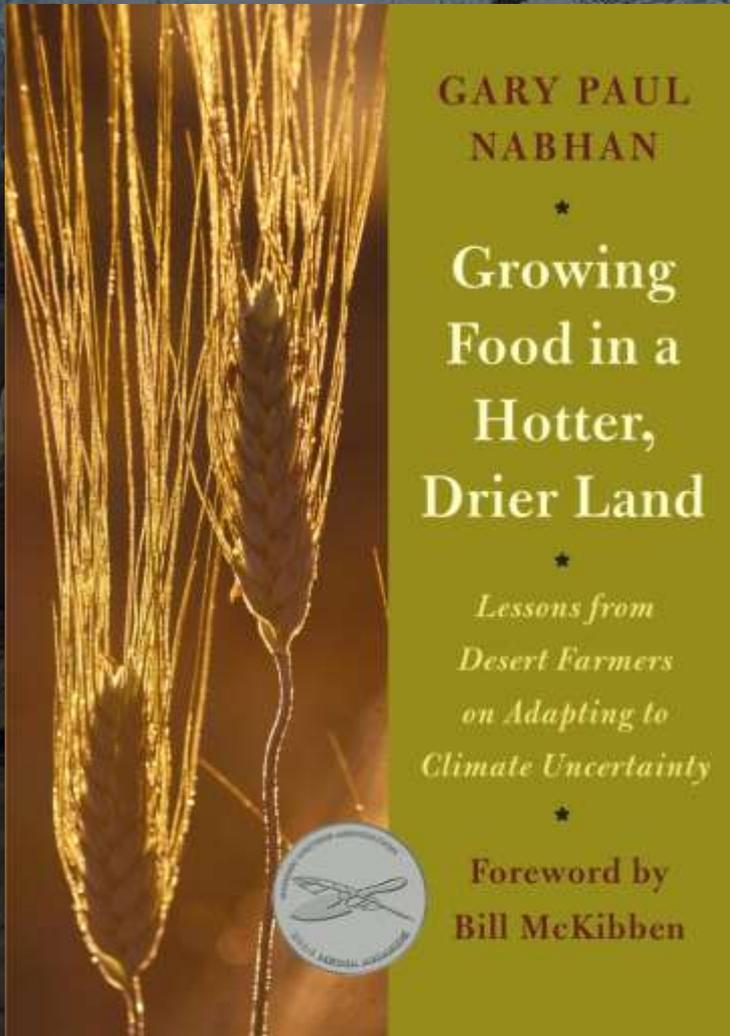
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# TODAY

1. Introductions – personal connection
2. Framing – affordable & sustainable
3. Approach – bio-/eco-/ethno-mimicry
4. Techniques - we'll start with fredges
5. Q&A
6. Apply to a garden activity (if time)

# Introductions

- 📍 **Your Name**
  - 📍 **Organization**
  - 📍 **Area of AZ/County you work in**
  - 📍 **How are you personally connected to growing food?**
-



**Climate uncertainty  
addresses both  
affordability &  
sustainability**

# Affordability - History

- 📍 Homesteads, victory gardens
- 📍 Farming as an occupation
- 📍 Racialized food systems in US

# Sustainability – People & Place

- 📍 Us & our target audience
- 📍 Southwest, colonized land
- 📍 Homes, schools, & communities
- 📍 Monty Don

# Time-Tried Strategies in Deserts

- 📍 Sunlight abundance, deflection
  - 📍 Water, energy needs
  - 📍 Clustered, recycled
  - 📍 Cooperation, diversity
  - 📍 Stripped-down
  - 📍 Celebration
-

# Biomimicry



# Eco-mimicry



4. Take the smaller pruned-off branches and weave 4- to 6-foot segments horizontally in between the upright (living) stakes until they create a sieve or webwork of materials 3 feet high from the ground.
5. Wait (and if necessary, hand-water) until late March, or at least until the live stakes root and leaf out as actively growing saplings.



These cottonwood stands were eco-mimicked by Sonoran farmers to maximize the benefits from their living fencerows or fredges



# Ethno-mimicry



# Inspiration, not duplication

1. Native food species
2. Organisms that grow together
3. Edible landscapes

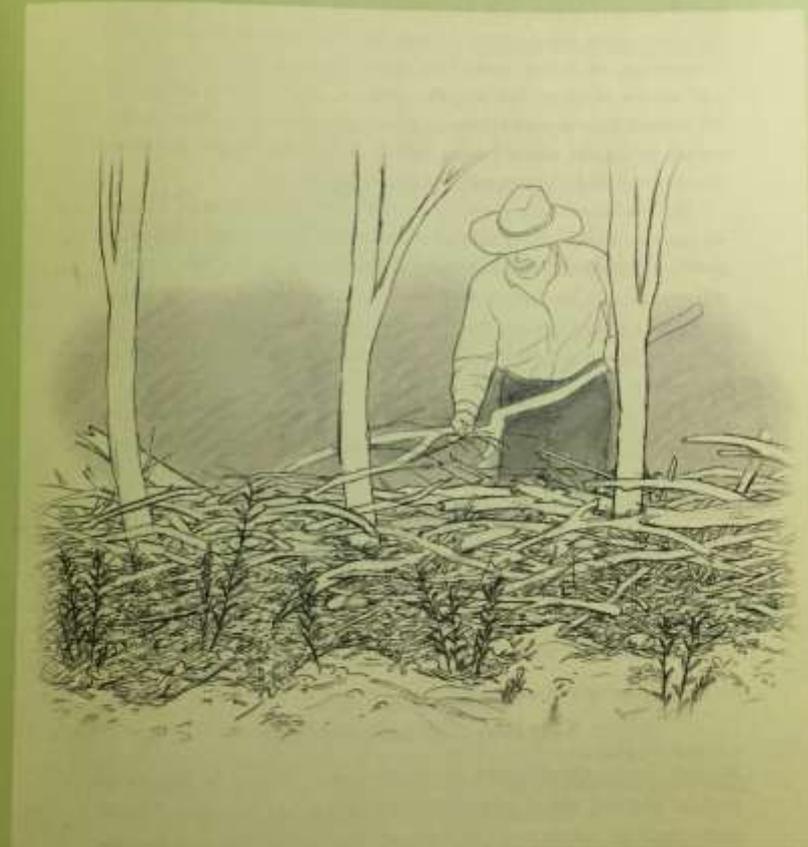
# Fredges

SEEKING INSPIRATION AND SOLUTIONS

ated in microclimates where they are  
to the sun.<sup>27</sup>

recent tourist resort developments  
forating more wells at Sora, leading to  
petition for fresh water, and more  
puddles of brackish water.<sup>28</sup> Sora  
has outlived many other threats  
of years of sustaining a rich, water  
, and my hope is that its Beker and  
unities have the resolve and the  
their resilience once again.

se, desert oasis food forests are so  
the Old World, but over the last  
ve been developed in the Americas  
Jesuit, Dominican, and Franciscan  
e from Europe to colonize Mexico  
ght desert-adapted Old World crop  
es of Baja California. Of the 21 plants  
tially introduced to that desert par  
74, nearly all of them have persis  
he missionaries mimicked the  
remembered from their travels  
and in the Canary Islands.<sup>29</sup> To  
lated the classic model of oasis  
developed in the Middle East  
hen transplanted and refined to  
ing climates they encountered



Rain gardens can benefit if you locate brush weirs upstream to slow runoff velocity and force the deposition of nutrient-rich

a hedgerow; across the pond from the Brits, the term is usually reserved for some ornamental plants up against the wall of a house or garage in a suburban

the rest of its seeds from being wind-blown to another advantage in the United States, since every red-blooded American male already knows how to "band for the fledge" when it's time to get something on rail



Fredges, shelterbelts, and windbreaks are essential to water conservation and crop production in windswept Tajikistan.

#### SEEKING INSPIRATION AND SOLUTIONS



A living hedgerow or fledge protects field edges and captures nutrient-rich organic debris from upstream for soil building and enhancement in eastern Sonora, Mexico.

but are still being constructed today.<sup>8</sup> Similar fredges, once commonplace north of the border in Arizona, have virtually vanished from these agrarian landscapes, thus ensuring a great vulnerability in the face of

#### GROWING FOOD IN A HOTTER, DRIER LAND



This living hedgerow or fledge not only protects field soil banks from erosion during catastrophic storms, but captures nutrients to regenerate the field's fertility and productivity.

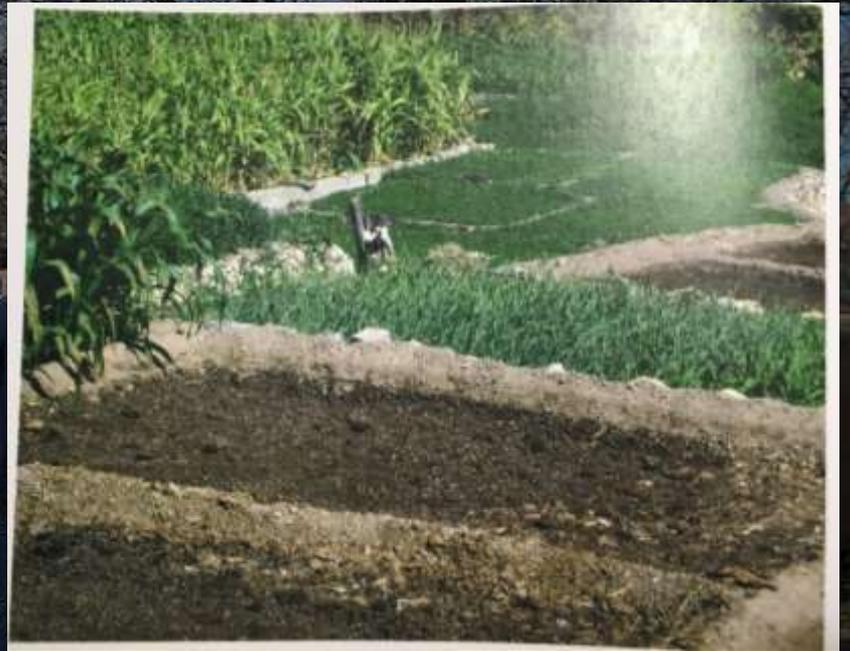
they are only now beginning to assess how such human-tended cur-

# Rain & waffle gardens

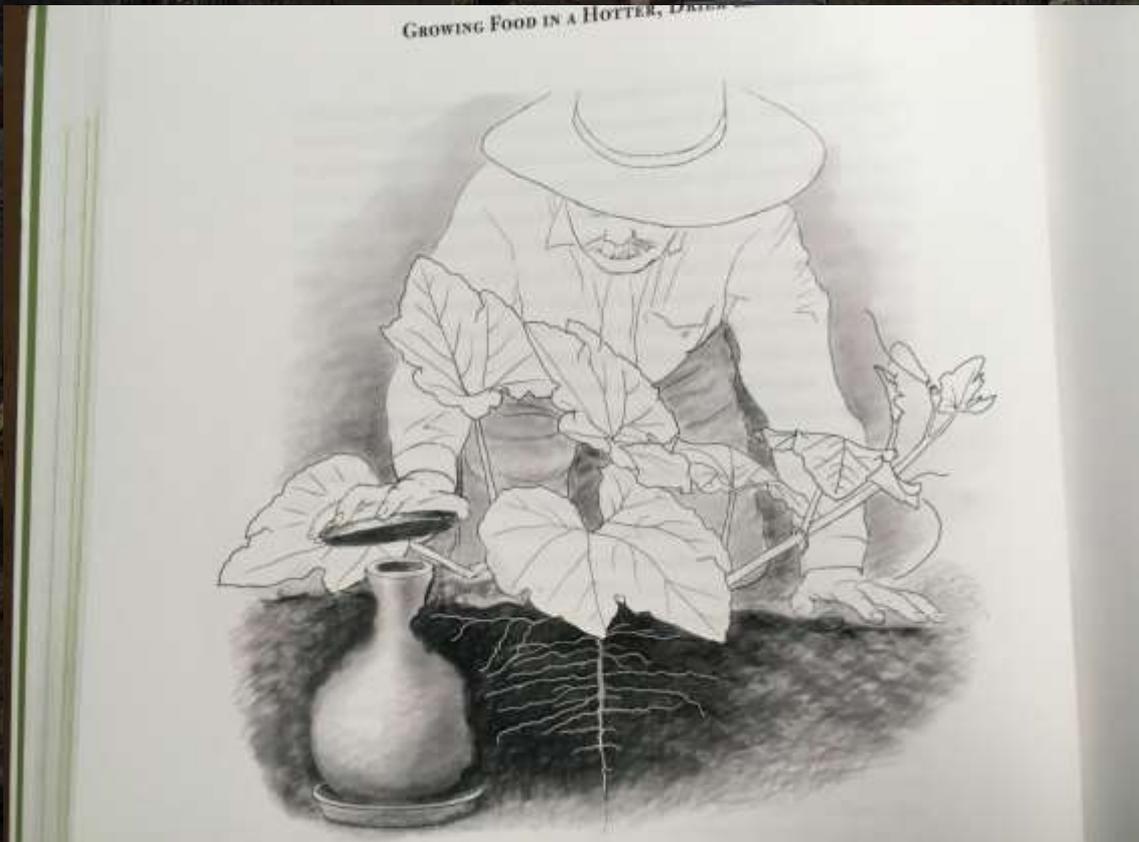
Caleb Weaver  
in garden of  
anniversary,  
looking for the  
illy collected  
as at a spot  
rlooked, for  
yet, when I  
realized that  
ver from our  
also capture  
a small wa-  
or gardens.  
catchment-  
t we could  
rainfall and  
he planted  
ould still be  
ll, I selected  
long served

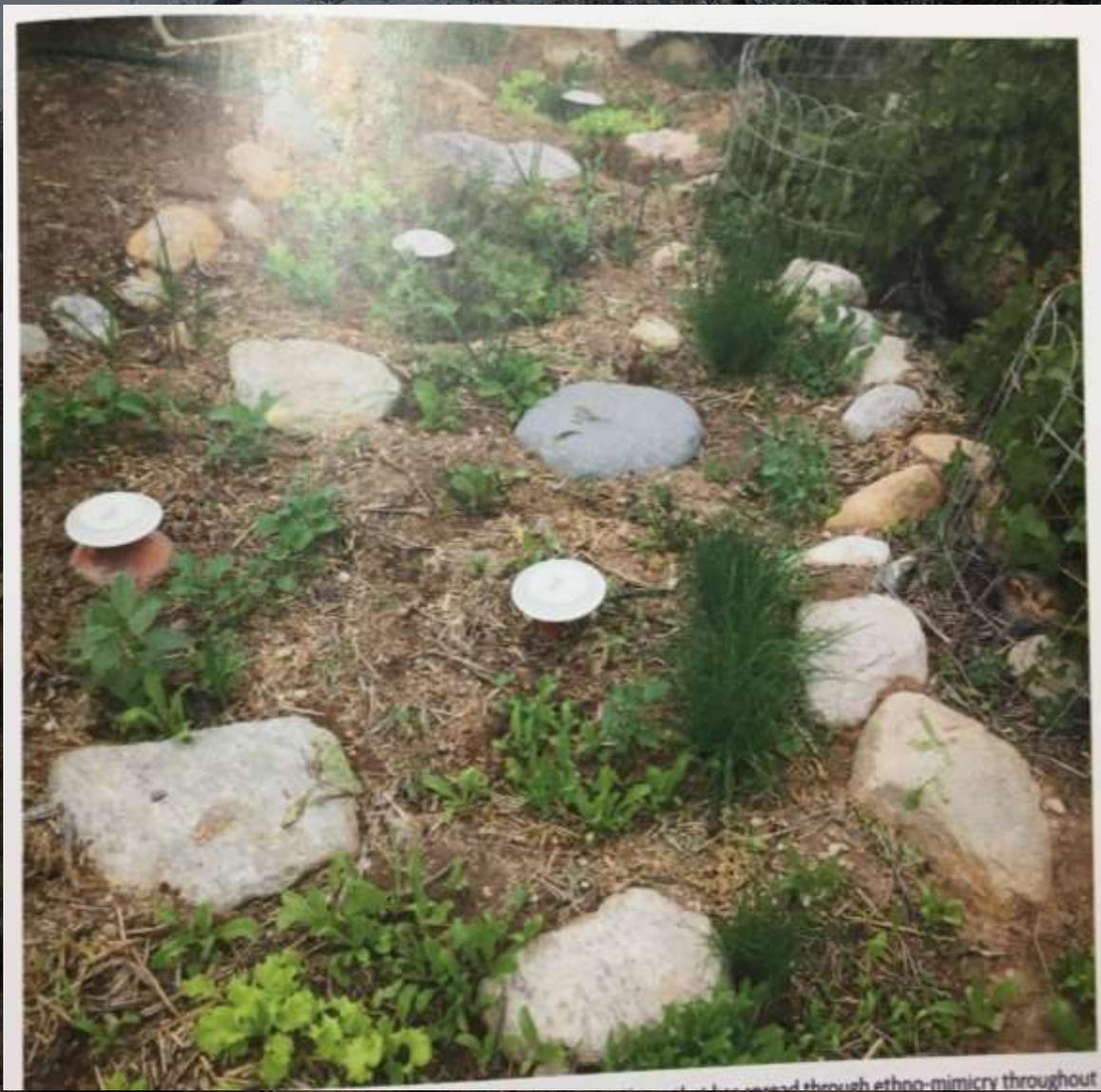


A rain garden designed as a "waffle garden" slows the flow of water and nutrients to grow perennial edible crops and medici-



# Buried clay pot irrigation – Ollas





... spread through ethno-mimicry throughout

# Other micro-irrigation strategies

- Wick irrigation
- Deep pipe
- Perforated rain pipe

Always need micro-leveling and mulching



# Nurse trees & plant guilds



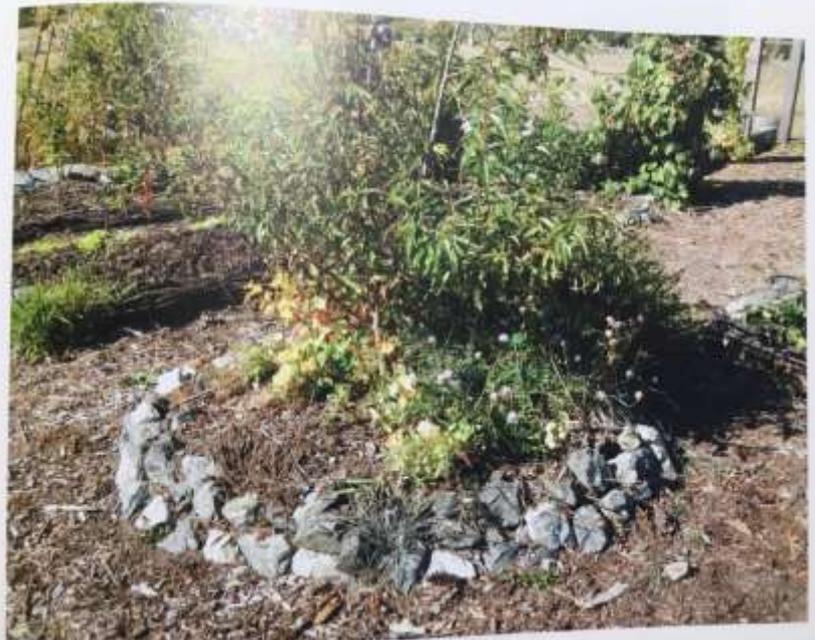
student Humberto Suzan, we once gathered a year and a half ago



Mesquite functions as a protective nurse tree for herbs at Rancho el Peñasco Eco-Lodge in Sonora, Mexico.

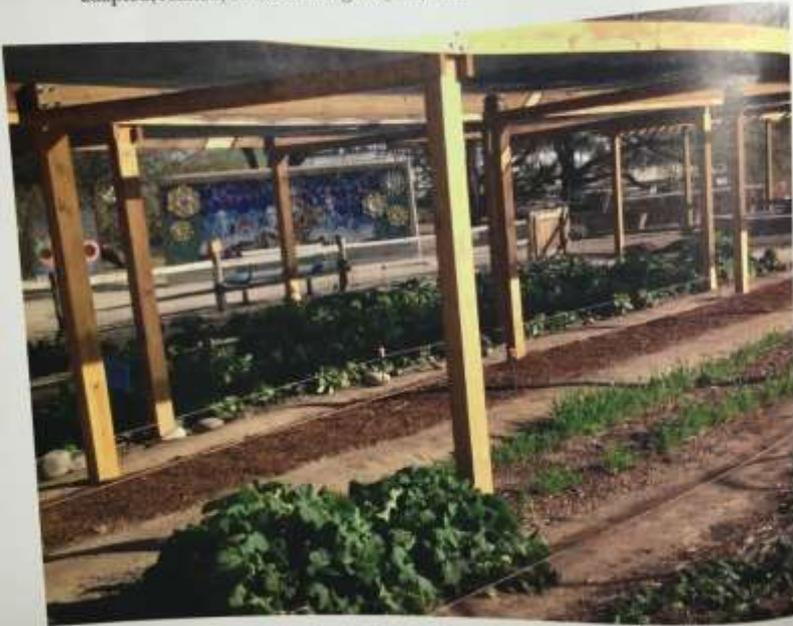


...securing survival.



# Boundary layers

brunt of heat stress. Let's see what has worked for them that may be adapted, refined, or used analogously in your particular foodscape.



A shade-cloth-covered Southwestern-style ramado allows vegetable production throughout the summer at Tucson Village

BREAKING THE FEVER



Desert permaculturist Brad Lancaster uses the vines of Mexican creeper or coral vine (Ampelopsis) as a passive boundary layer



Permaculturist Greg Peterson (www.greghill.com)



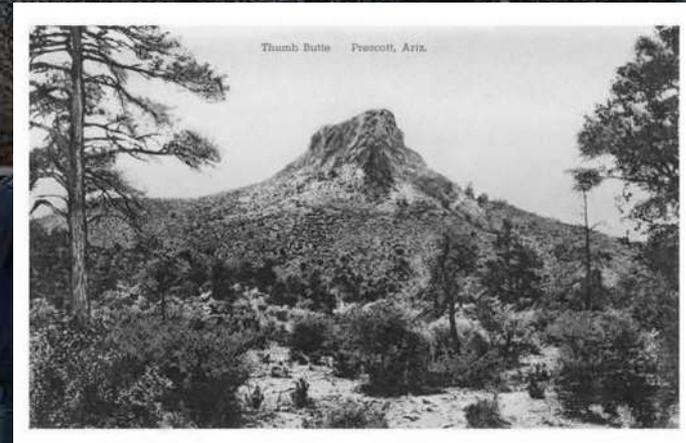
# Moisture-holding capacity



Close-up of flood-washed organic detritus to be composted for soil moisture enhancement in rain gardens.

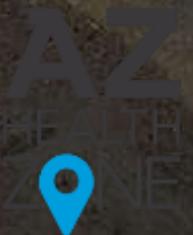
# There's way more!!!

- 📍 Fruit & nut tree guildes
- 📍 Terracing and edging
- 📍 Intercropping
- 📍 Pollinators



# Questions?

Images are for educational purposes only. Most are from *Growing Food in a Hotter, Drier Land* by Gary Nabhan, find out more by visiting <https://www.garynabhan.com/books/>



# Application to SNAP-Ed

- 📍 **Activity: Sketch a garden you're working on, draw out how you might incorporate some of these techniques**
- 📍 **If time, share with a partner**

A group of about ten people are gathered around a wooden frame structure on a dirt field. They appear to be engaged in a discussion or inspection. The background shows trees and a clear sky. The text is overlaid on the image.

# Thank you!

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