

Inviting California to Dinner: Bringing California native plant foods into your life, and the future of native plant agriculture

Antonio Sanchez and Dr. Naomi Fraga





# *SCHEDULE FOR TONIGHT'S TALK*

- Why are we all here today?
- Seriously, that was a deep question.....why are we here?
- Short discussion on the history of foods from the Americas
- Intro to easy to use plants from your garden or bought in store/ online
- Exploring little used plants and their future potential
- Samples!
- Questions at anytime
- Email to reach me: [nopalitonatives@gmail.com](mailto:nopalitonatives@gmail.com)

# Dedication (Call up Art Laboe)

- Dr. Naomi Fraga

- Chia Cafe

- Californias' First Folks

Recognize the importance of the native plant knowledge from the first Californians

First botanists, ecologists and horticulturists of California



Woman gathering tarweed seed  
From exhibit Seaweed, Salmon, and Manzanita Cider –  
A California Indian Feast

# miner's lettuce

## *Claytonia perfoliata*

- Annual, very easy to grow multiple crops a year by sowing seed every few weeks
- Found around oaks, light sun to shady areas
- Delizioso local green found in the wet season around Califas from Nov – Dec to April-June
- Can be treated as a cut and come again green
- Popular foraged food
- Pre-soak seed for best germination
- Grows in many soil types, best in soils with organic matter
- Don't be afraid to fertilize!
- Transplanting seedlings can be difficult
- Seed is commercially available

## Food

- fresh greens
- soup
- pesto



Claytonia perfoliata (miner's lettuce)

### Claytonia Specialty Green Seed

Product ID: 388

#### Cold-hardy salad green.

Quantities of heart-shaped leaf pairs, each "wrapped" around a white-flowered stem. Hardest of the winter salad greens, can tolerate moderate frost and can be grown all winter in mild regions or in cold greenhouses. The taste of the young leaves is wild and fresh. Suitable for multiple cuttings. Direct seed about 1/2" apart, covering 1/4", rows 12" apart, or transplant carefully from containers. Thin to 4-6" apart. Avg. 47,000 seeds/oz. PKT: Avg. 500 seeds, sows 20'. Packet: 500 seeds.

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Backordered until 03/15/15

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# QUICK AUDIENCE SURVEY (DATA WILL BE SHARED WITH PRESIDENT TRUMP)

How many CNPS members in the house?

How many Santa Barbara Botanic Garden members in the house?

Have you ever grown a native plant?

Have you ever killed a native plant?

Have you ever grown a rosemary plant?

Have you ever grown a lavender plant?

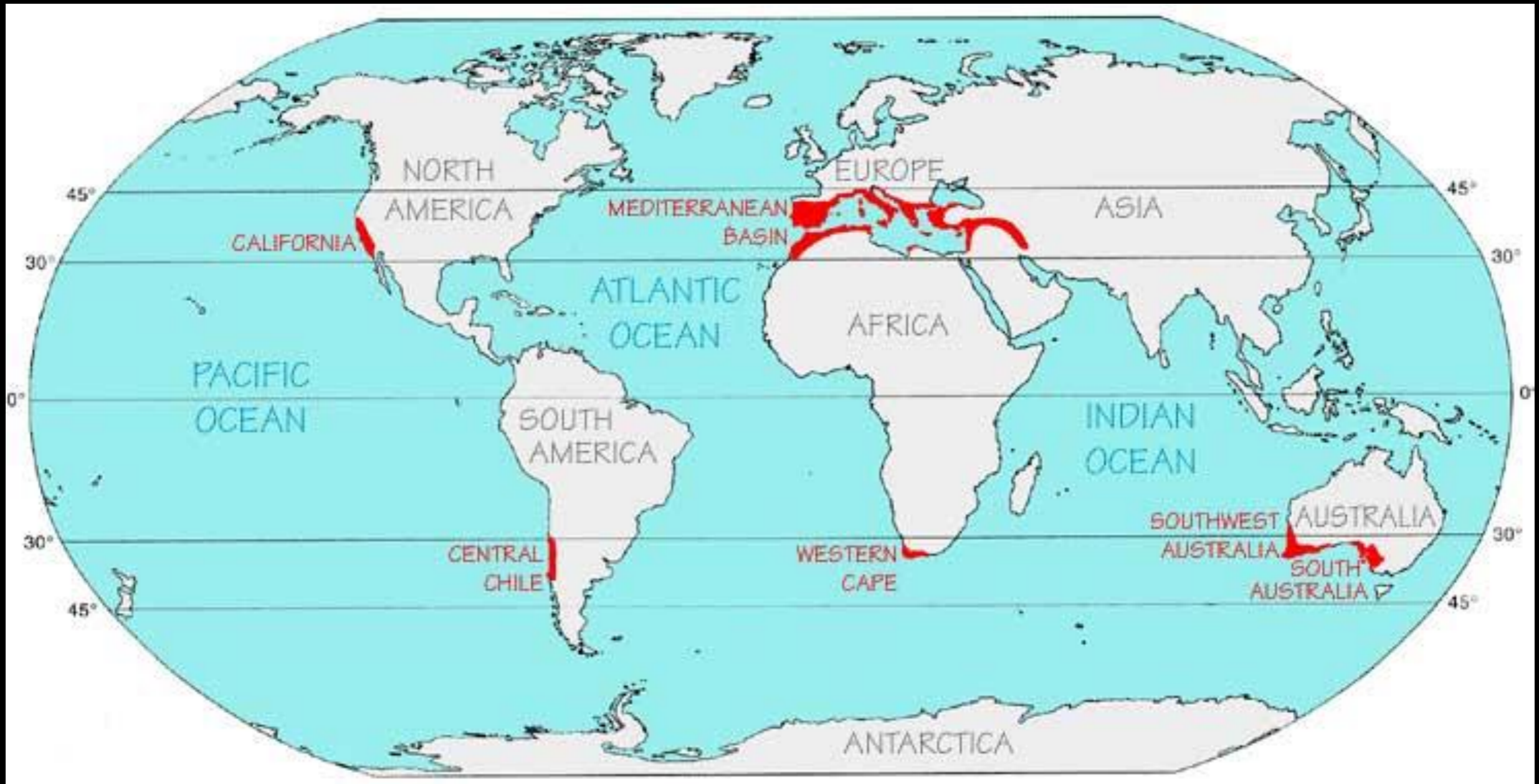
Have you ever grown a citrus tree?

Have you ever grown an olive tree or grape vine?





# Mediterranean Regions of the World





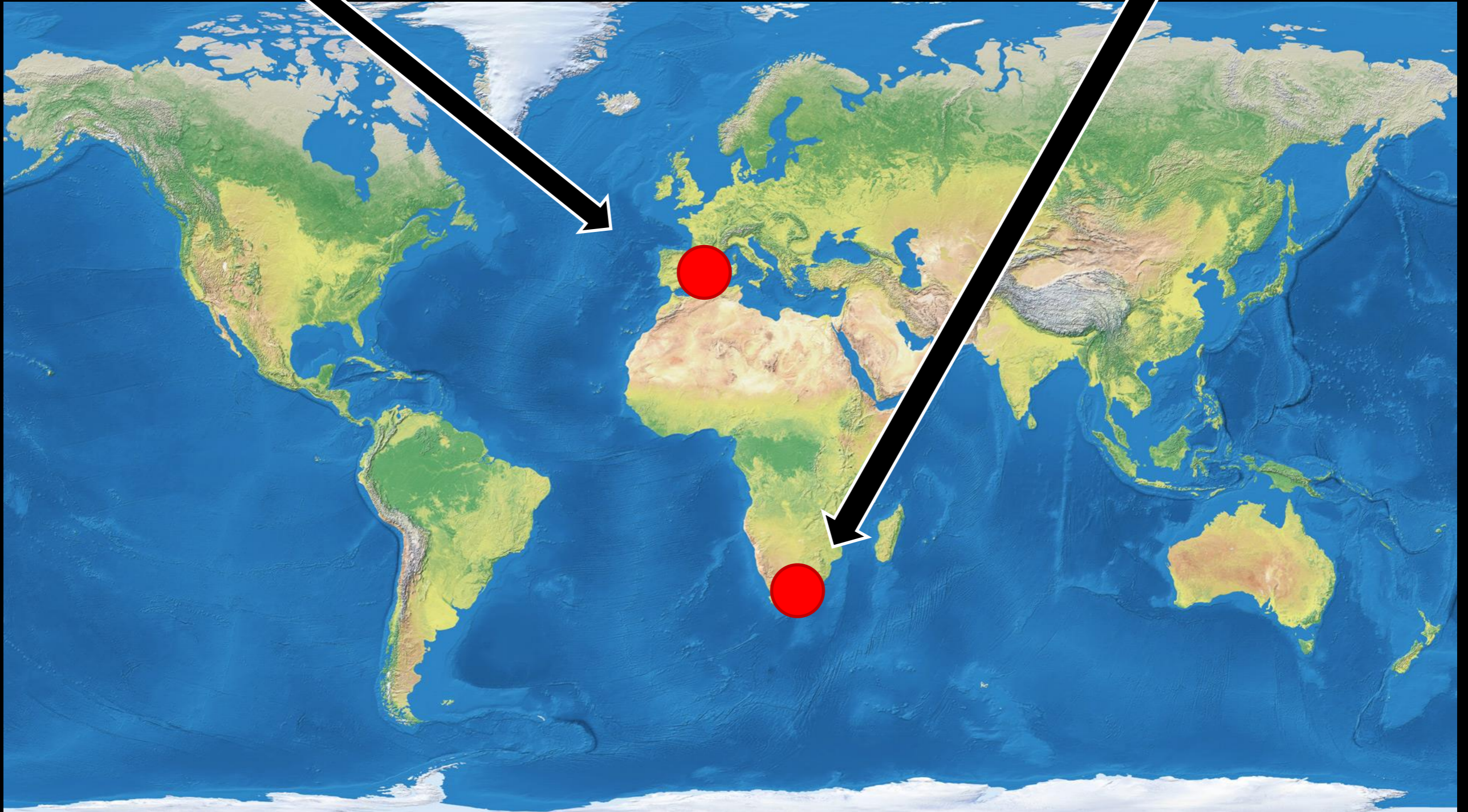
**You say Arugula, I say arrugada.....30 years ago**





Arugula; *Eruca sativa* (mustard family)

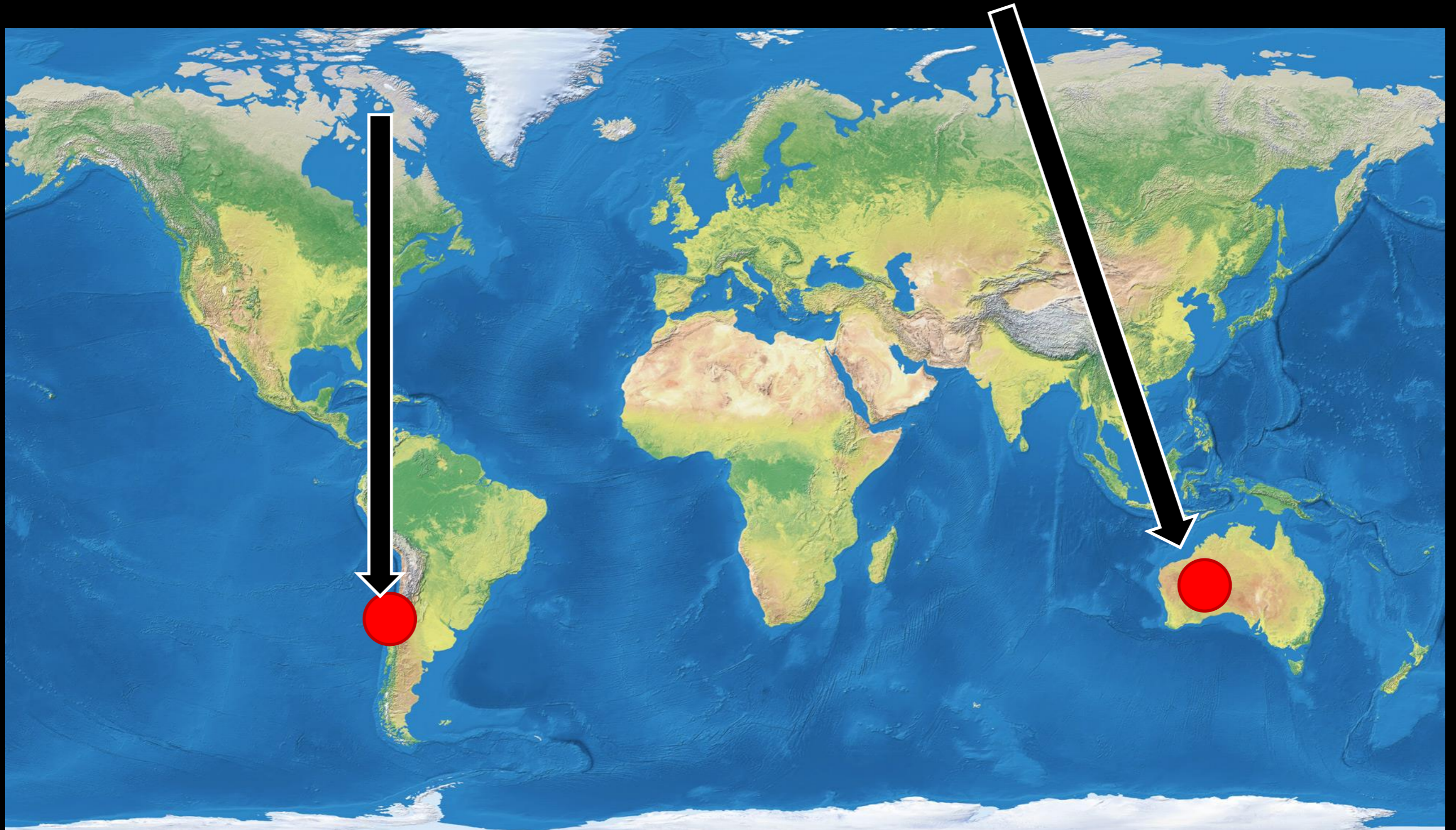
Rooibos; *Aspalanthus linearis* (bean family)





Chilean Guava; *Ugni molinae* (myrtle family)

Australia – BushFood Movement (10,000 years old or more)





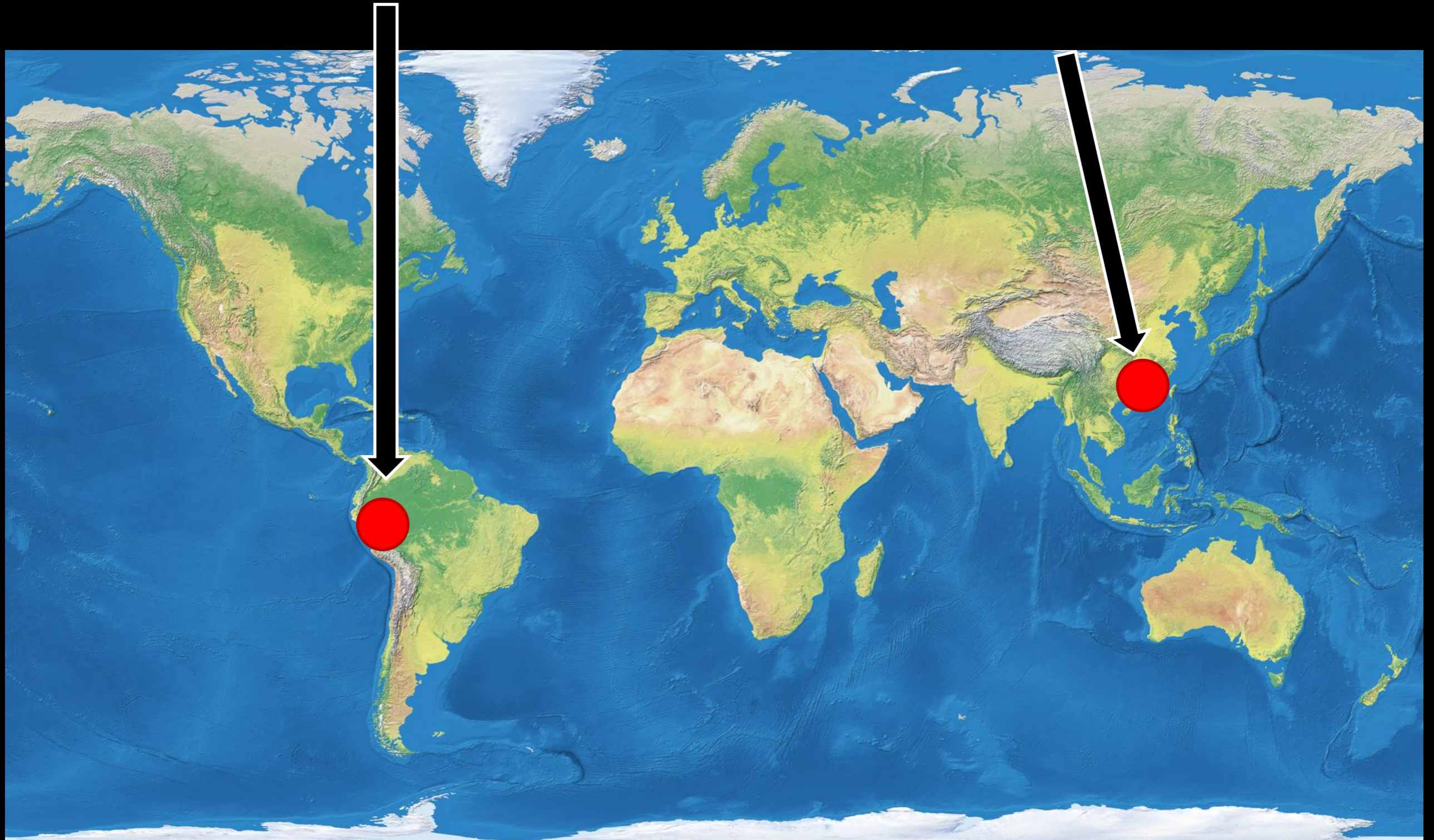
**You say key-noa-ahh, I say quinoa.....30 years ago**





Quinoa; *Chenopodium quinoa*  
(goosefoot family)

Goji Berry; *Lycium barbarum*  
(nightshade family)





# Crops of the America's

## North America

- Blueberry
- Concord grape
- Cranberry
- Pecans
- Sunflowers
- Strawberry



*Fragaria xananassa*

## Meso America

- Avocado
- Beans
- Cocoa
- Corn
- Papaya
- Peanuts
- Peppers
- Potato
- Quinoa
- Squash
- Strawberry
- Sweet Potato
- Vanilla



*Arachis hypogaea*



*Zea mays*





# Mexico vs. California





# WHY IS A MEXICAN=AMERICAN

- MESOAMERICA – ARIDOAMERICA – POLITICAL STATE OF CALIFORNIA
- Run into problems when we divide peoples by political borders
- MESOAMERICA provided the world with a lot of its most important crops
- MESOAMERICA yearly rainfall totals average between 20-40 inches a year or more
- City/ State of Puebla – 25 inches of rain, rainiest season in Summer, driest month is March
- Rainfall in Durango and California
- Less formal or no formal agriculture in Arido and California
- Many California folks were managing lands thru fires and maintenance for specific plant traits
- When you don't have agriculture, you tend to use a lot of land to provide food for your people





# MEXICO VS. CALIFORNIA

- New animals introduced begin to eat most of the native plants
- Weeds introduced and overwhelm native plant populations
- Over 90% of California Natives died in the 19<sup>th</sup> century, population went from 200,000 to roughly 15,000
- Arido and California peoples who did not die were most times relocated to less than desirable lands
- Native folks everywhere thru the Americas are proud and still around
- Don't blame native folks if they don't want to share any of their knowledge
- Don't generalize and say all natives liked this or that
- Don't pretend you are the first to use this plant or that it's some great new superfood (damn foodies)





# CALIFORNIA

- > 6,500 taxa in the State
- ca. 35% of the plants are endemic
- California floristic province a global biodiversity hot spot
- Over 2,300 rare, threatened or endangered species





# Crops of California

## Commercial crops native to CA?

### Wine grape

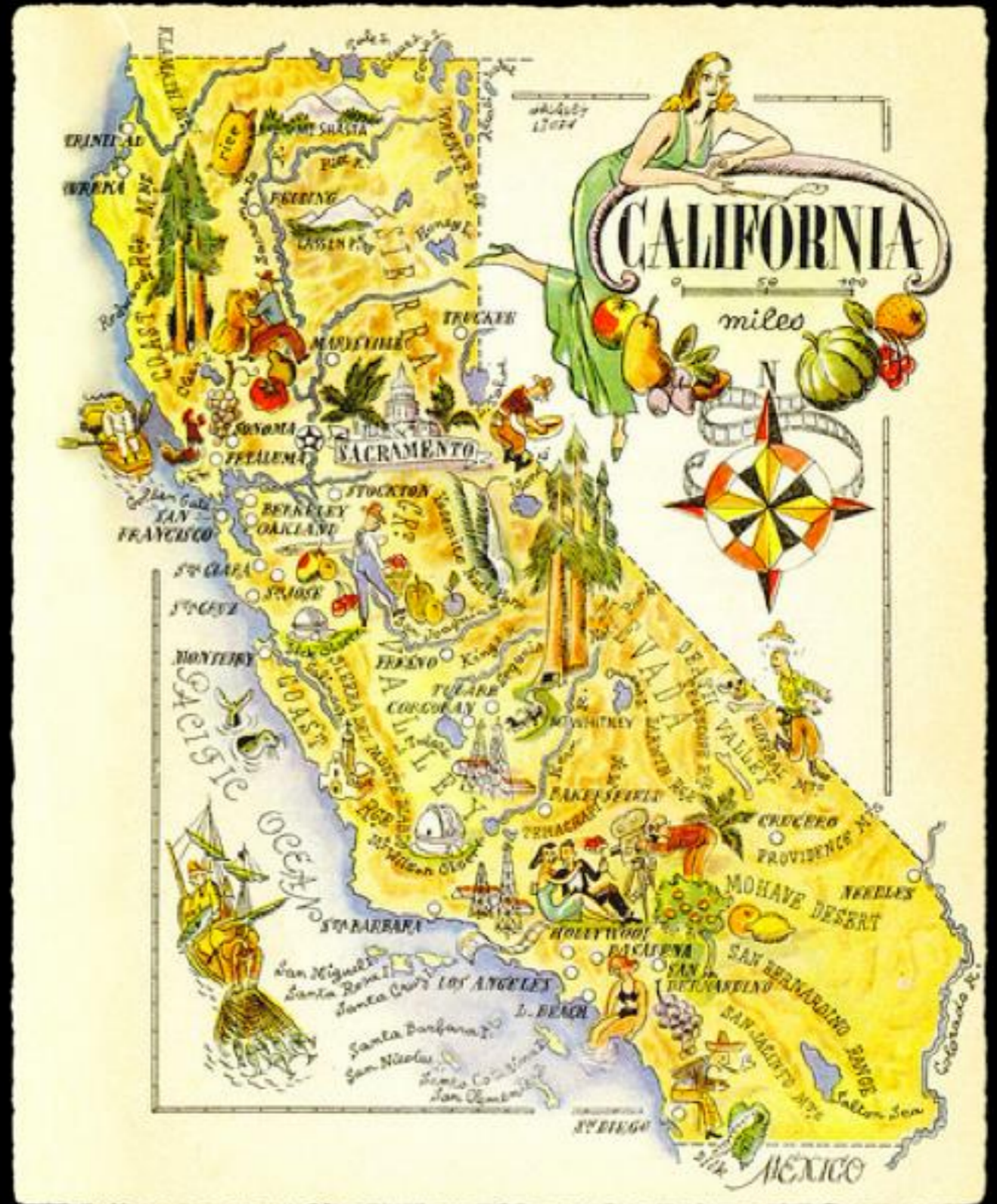
- Rootstocks of *Vitis californica* (CA Wild Grape) for wine production starting in the 1800's
- Many new, non-native hybrid rootstocks now preferred

### Walnut

- *Juglans hindsii* (Nor. Cal Walnut) rootstocks and hybrid rootstocks for English Walnut
- Currently used is 'Paradox' hybrid rootstock, mix of *Juglans hindsii* and *Juglans regia* (non-native)

### Cultivated strawberry?

- *Fragaria vesca* hybridizes with species involved in the cultivated strawberry hybrid
- *Fragaria virginiana* and *Fragaria chiloensis* parents of *Fragaria xananassa* are both native to California



California map by Jaques Liozu



# Why promote cultivation of California plants for food

1. Increase use and appreciation of local plants
2. Reduce wild harvest
3. Provide a sustainable and available supply
4. Cultural Revitalization
5. Commercial development of a regional resource (food security)
6. Water conservation
7. Reliable botanical identification
8. Most authentically local food





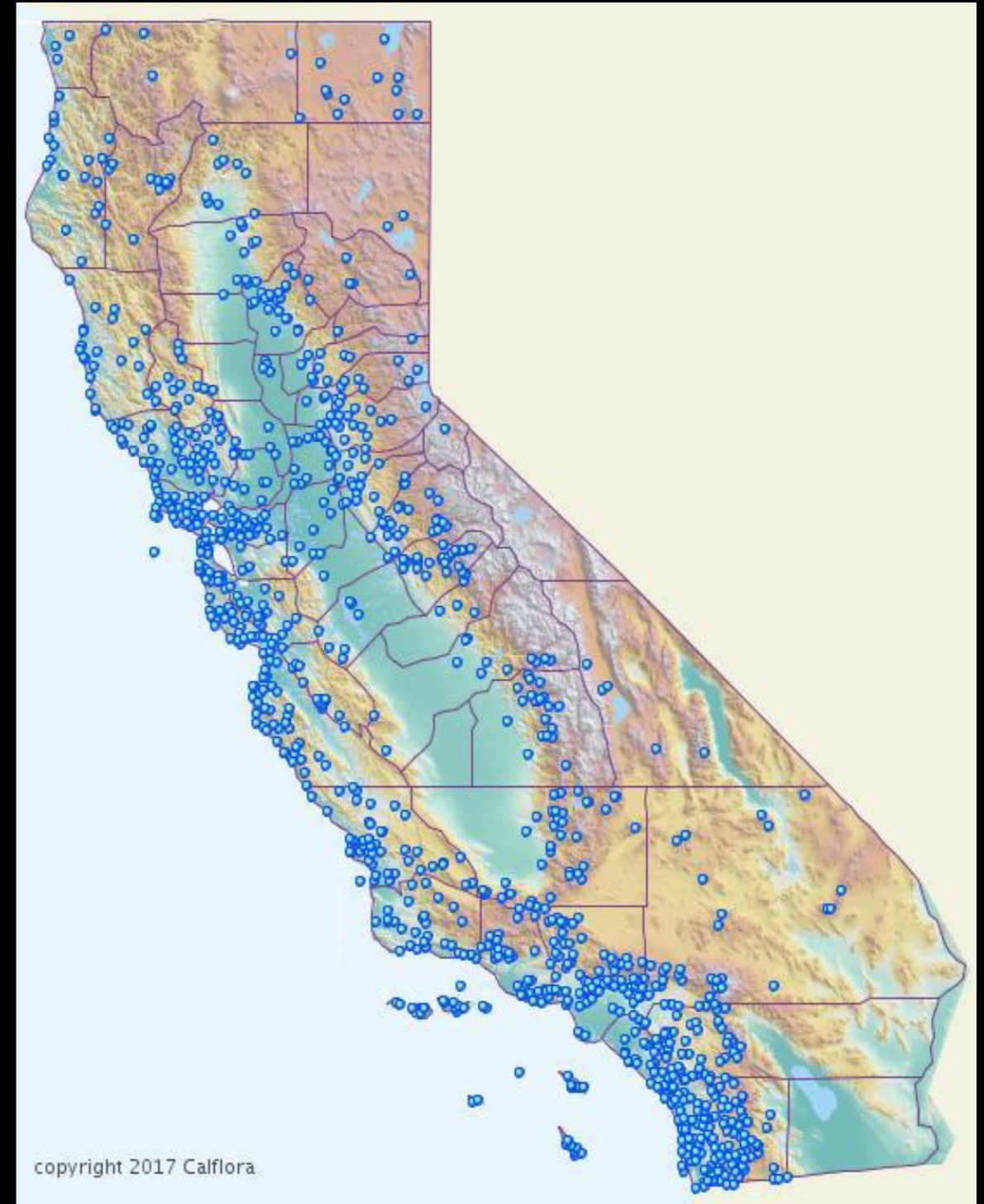
# To Forage or Not To Forage

1. Is it legal to harvest in the wild?
2. Is it sustainable to harvest in the wild?
3. How about growing some of this in your own garden?
4. If you grow your own, you can keep plants better hydrated and lengthen harvest time and achieve greater yields
5. Many edible native plants double as habitat plants and are low-water, win-win-win-win-win
6. Strongly encouraged to NOT harvest from the wild and instead grow them in your yard or community garden





# INTRO TO CAL FLORA WEBSITE





WIDE RANGING AND NOT SO WIDE RANGING  
(MINER'S LETTUCE AND NEVI'S BARBERRY)





# *Terms to know about*

**Adaptable** – This plant is easy to grow....it's adaptable to a lot of conditions in the wild or in your garden....like my taste for beers is adaptable....king cobra = sierra Nevada

**Wide-Ranging Species** – Species found in many different parts of CA, including coast, wet areas, etc

**Cultivars/ Selection** – Short term for cultivated variety of plant, usually a perennial

**Hybrid** – A mix if 2 species that normally wouldn't mix in the wild, like donkey and horse = mule or Korean food and tacos = gentrification

**Seed Strain** – A seed collection that produces plants with unique characteristics, like white California poppies

**Land Race** – A locally adapted seed strain, usually an annual, like Nambe Chile or Chimayo Chile

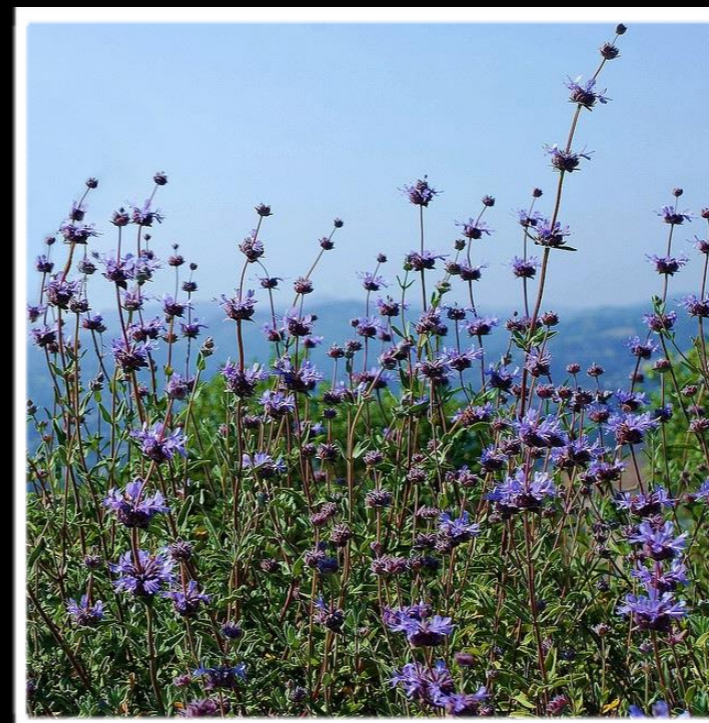
**CA Native Plant** – Plants found in the area of California or the California Floristic Provenance before the arrival of Europeans and other

**Native California's Private and Lost Cultivars** - The idea that native folks had selected and maintained many different native foods for superior taste, etc....many of these were lost during the dark times



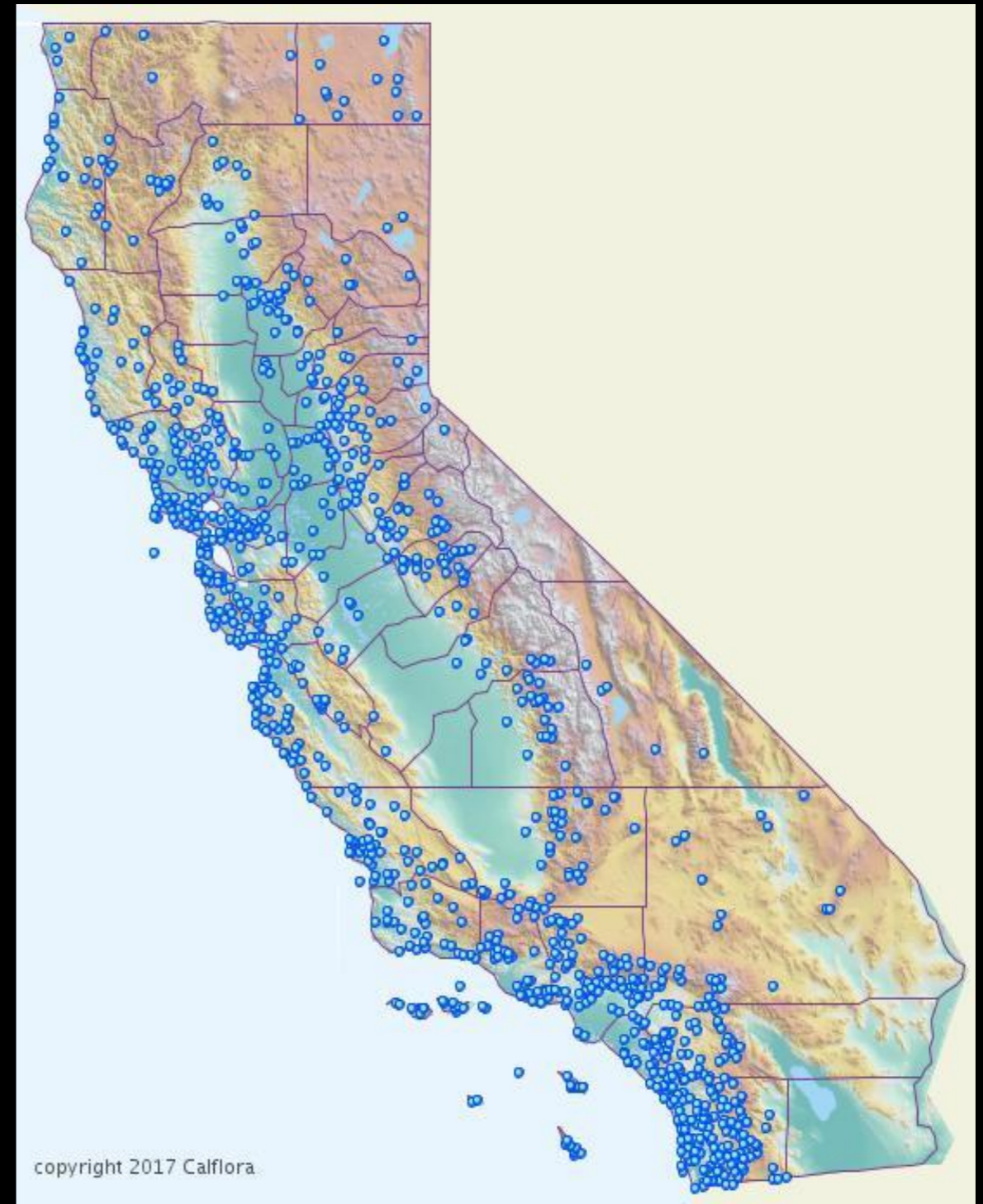
# top foods to develop and use NOW (easy)

1. *Miners lettuce*
2. *Hummingbird Sage*
3. *Salvia clevelandii* and hybrids
4. *Allium unifolium*
5. *Mesquite*
6. *Grape*
7. *Golden Currant*





# MINER'S LETTUCE (CLAYTONIA PERFOLIATA)





# miner's lettuce

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# SALVIA SPATHACEA (HUMMINGBIRD SAGE)





# *Salvia spathacea* – hummingbird sage

- Naturally sweet
- In cultivation and easy to grow
- Evergreen in gardens with Summer water
- Makes an excellent potted plant
- Prefers light shade but does well with full sun near coast
- Grows by rhizome, so cut back aggressively first year to promote underground growth
- Cultivar 'Pilitas' stays less than 4 inches tall, very neat and uniform
- Water 2-3 times a month from April-October for evergreen leaves
- Deadhead for extra flowers

## **Food**

- Hot and Cold Tea
- Sweets (ice cream, syrup)
- Seasoning
- Fried leaves



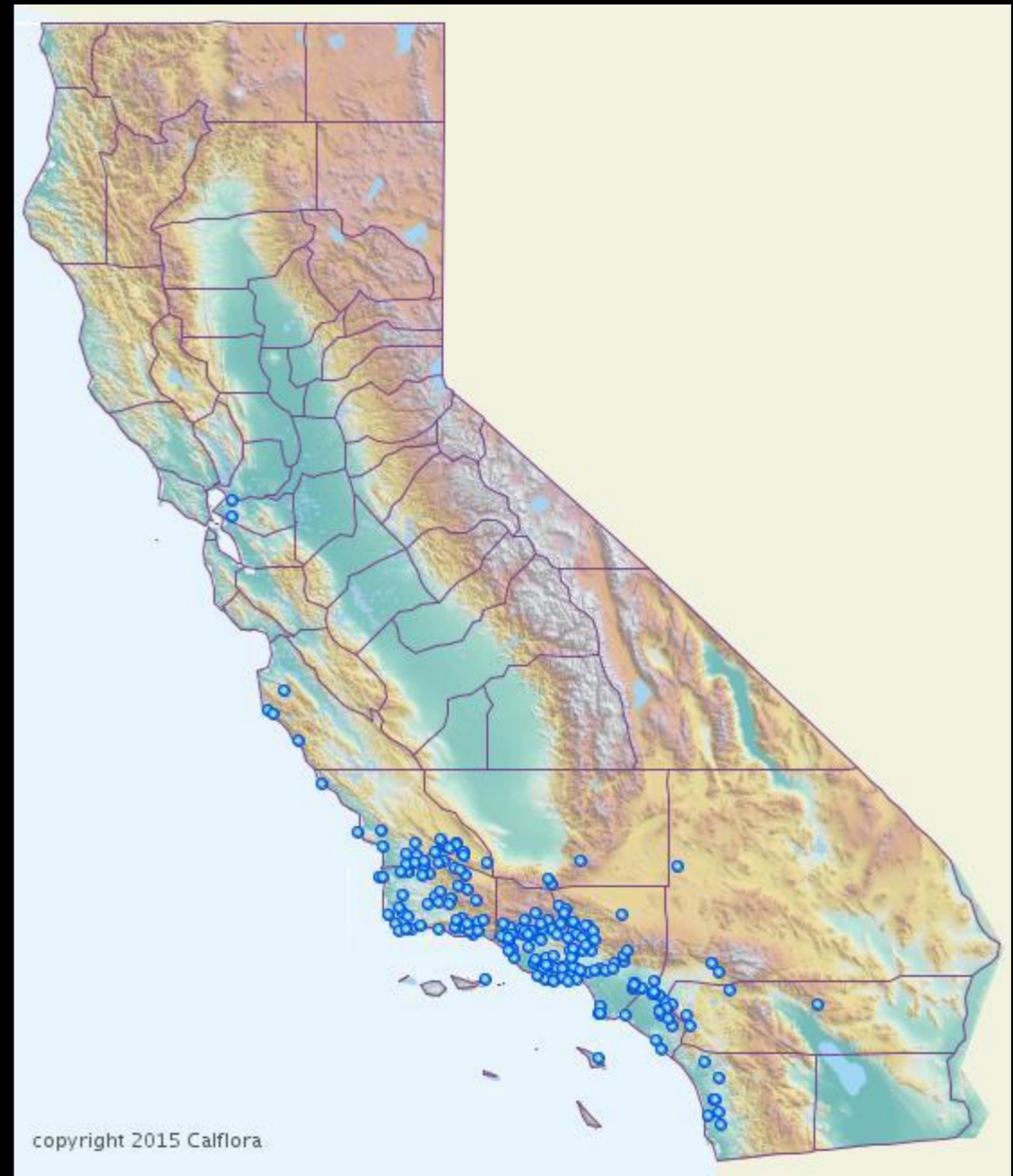


# SALVIA CLEVELANDII (CLEVELAND SAGE)





# SALVIA LEUCOPHYLLA (PURPLE SAGE)





# Cleveland sage and hybrids

## *Salvia clevelandii* and hybrids

- *Salvia officinalis* and other herbs commonly sold in a variety of stores, why not native sages?
- Can be used with or as replacement for lavender, rosemary and sages
- Already available in cultivation and easy to grow
- Tastes great!
- For pesto, use hybrids 'Aromas', 'Allen Chickering', 'Pozo Blue' and 'Whirly Blue'
- Hybrids are adaptable and tolerant of extra Summer water
  - *Clevelandii* does not like too much extra Summer water, can drown

### Food

- seasoning
- pesto
- beer
- ice cream
- baked treats
- infused in oils



*Salvia clevelandii*



sage pesto



sage ice cream



# ALLIUM UNIFOLIUM (ONE-LEAF ONION)





# *Allium unifolium* – one leaf onion

- All parts of the plant are edible and tasty (flowers, leaves, bulbs)
- Showy plant
- Flower and leaves are seasonal, but bulbs can be harvested most of the year
- One of the easiest native bulbs to grow
- Tolerates wet soils during the Summer
- All native *Allium*'s we have tried are edible and tasty, though not all tolerate consistent summer waterings

## **Food**

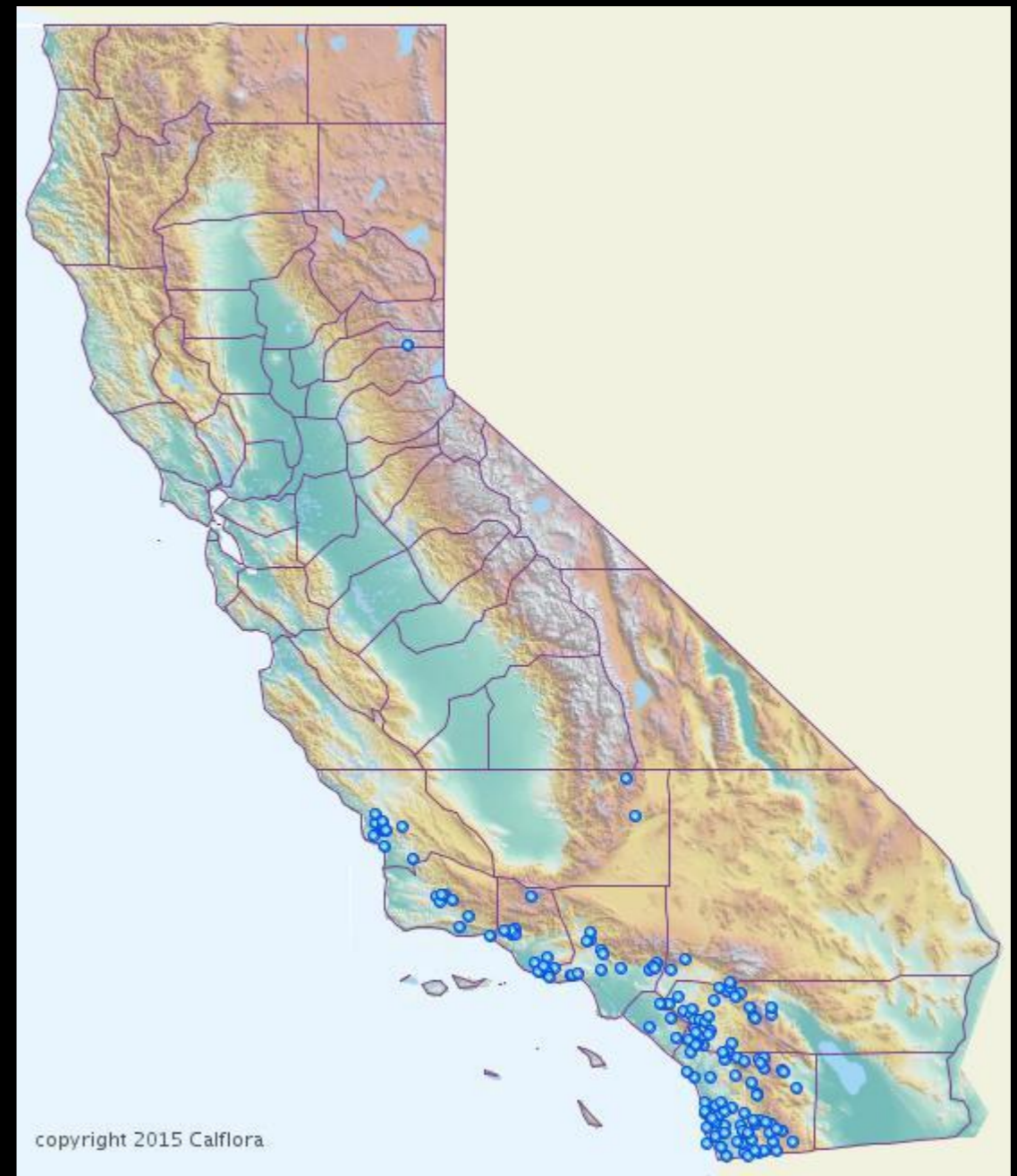
- Use like you would use garlic or shallots, or chives
- Seasoning
- *A. unifolium* is pretty mild, but other species can be spicier and more variable.



Photo by [DrystoneGarden.com](http://DrystoneGarden.com)

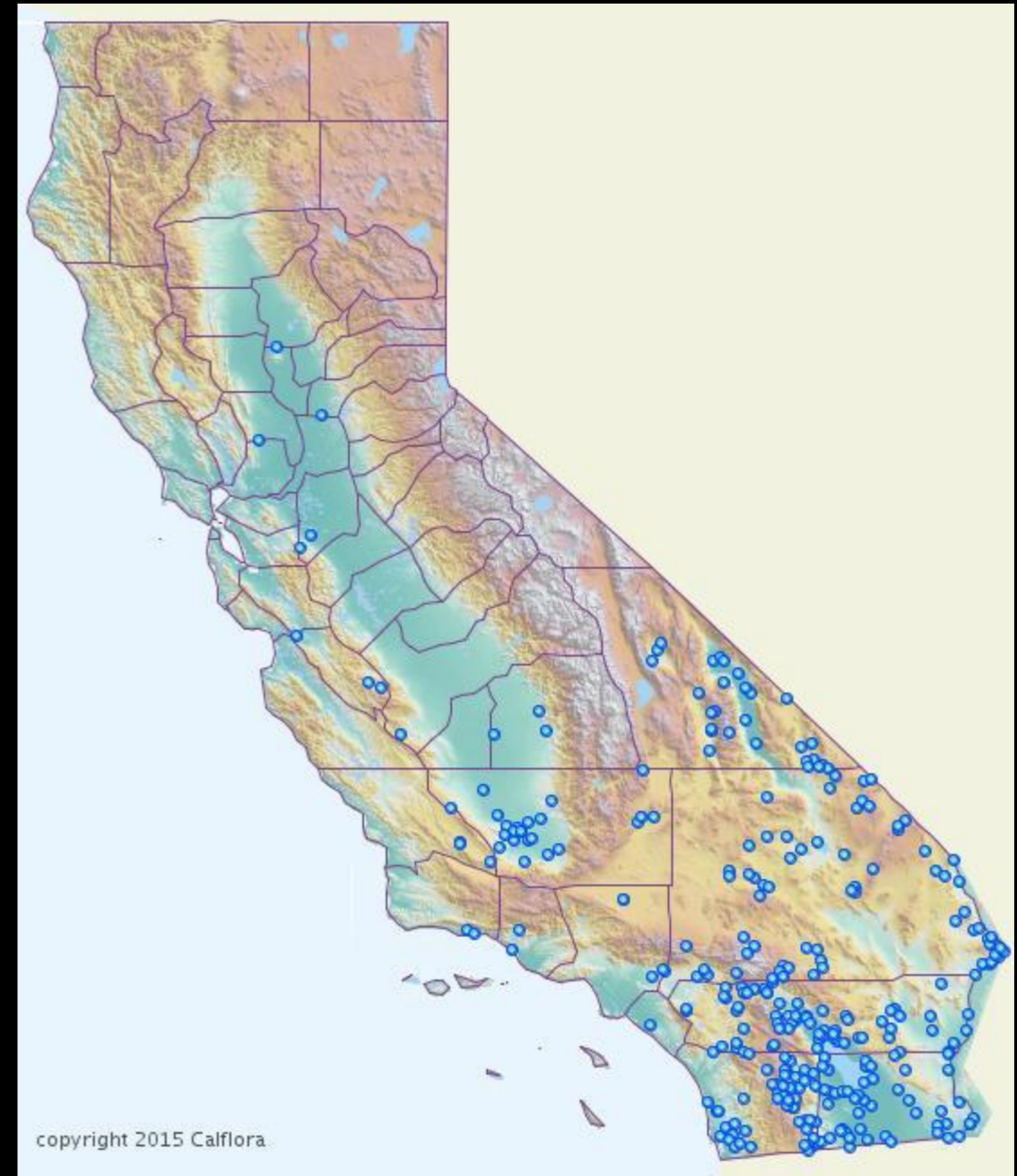


# ALLIUM HAEMATOCHITON (RED SKINNED ONION)





# PROSOPIS GLANDULOSA (HONEY MESQUITE)





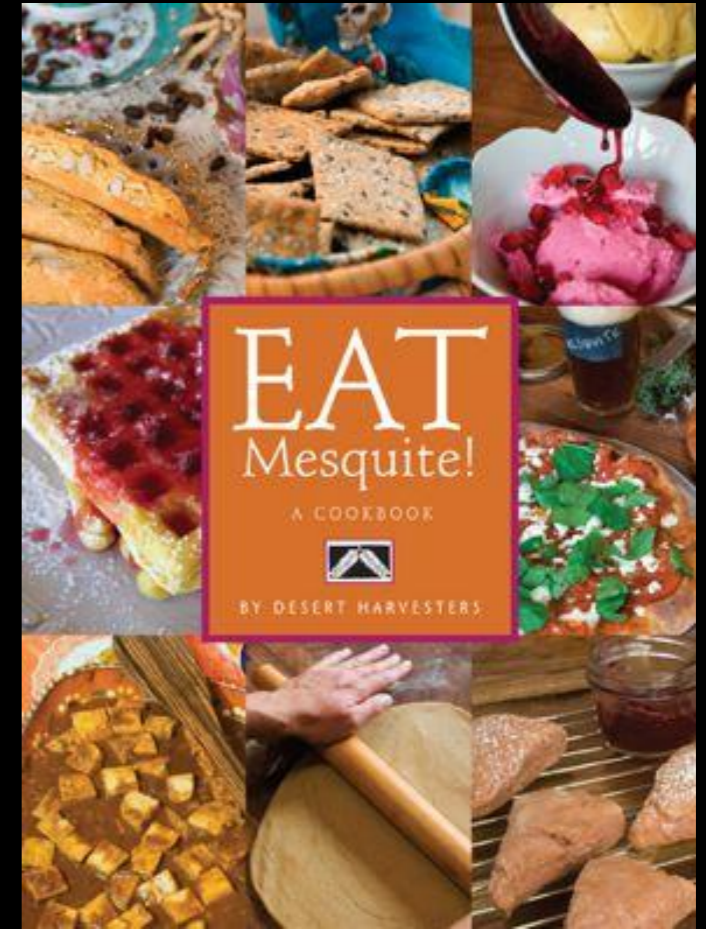
# eat mesquite!

## *Prosopis glandulosa* var. *torreyana*

- Mesquite flour, meal or powder
- Product of Argentina most accessible
- Difficult to find locally sourced flour
- Native Seed Search (Parker AZ)
- Desert Harvesters in Tucson
- Seri, Sonoran Desert in Gulf of California, Mexico
- High protein, low glycemic index, good source of soluble fiber, gluten free
- Trees very easy to grow, but can produce low-quality fruit (pods) away from desert
- Cross-Pollination seems to be necessary

### Food

- breads and tortillas
- pizza dough
- cookies
- pancakes
- shakes and smoothies
- mole



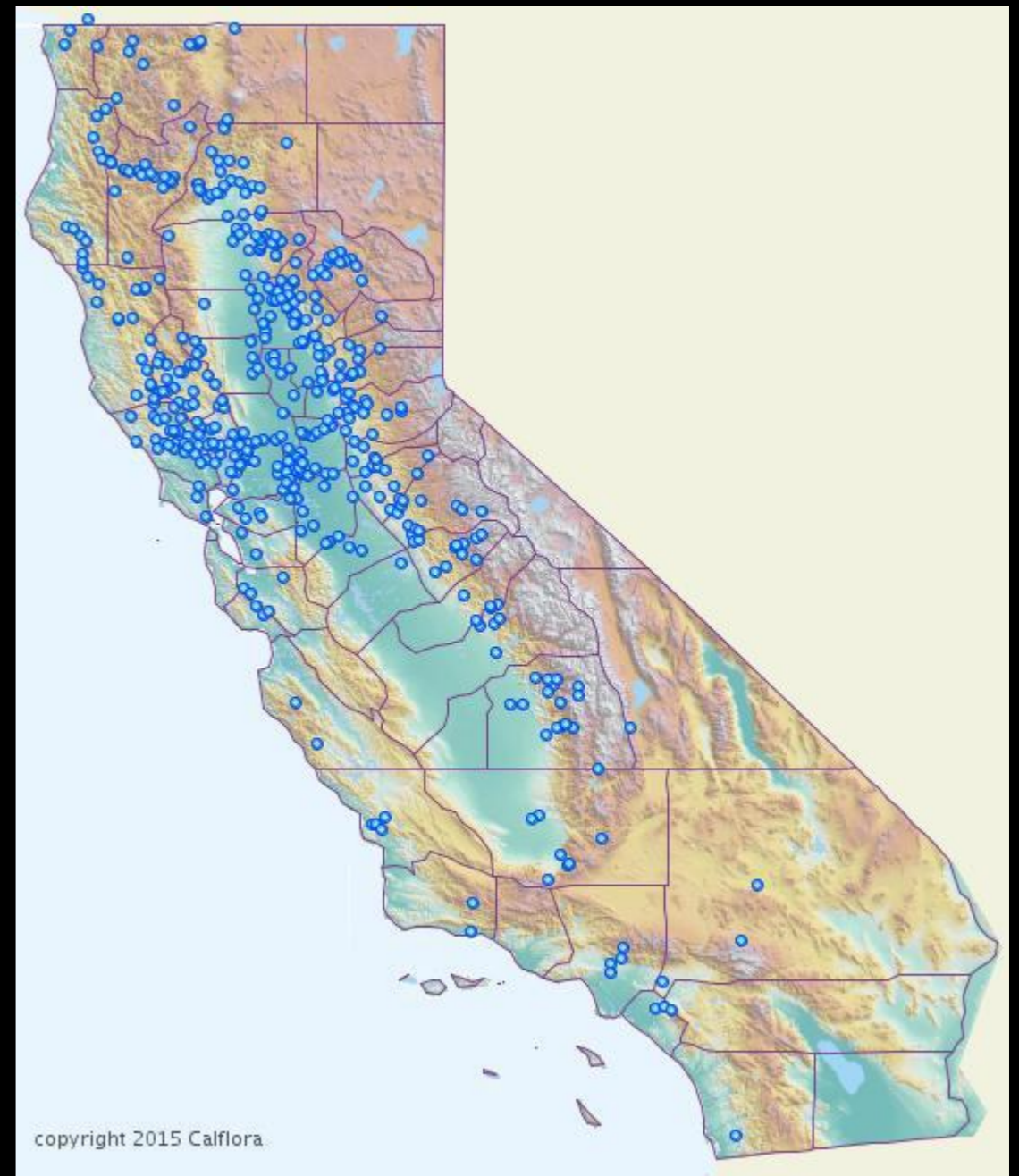
Cookbook by Desert Harvesters

<http://www.desertharvesters.org/>



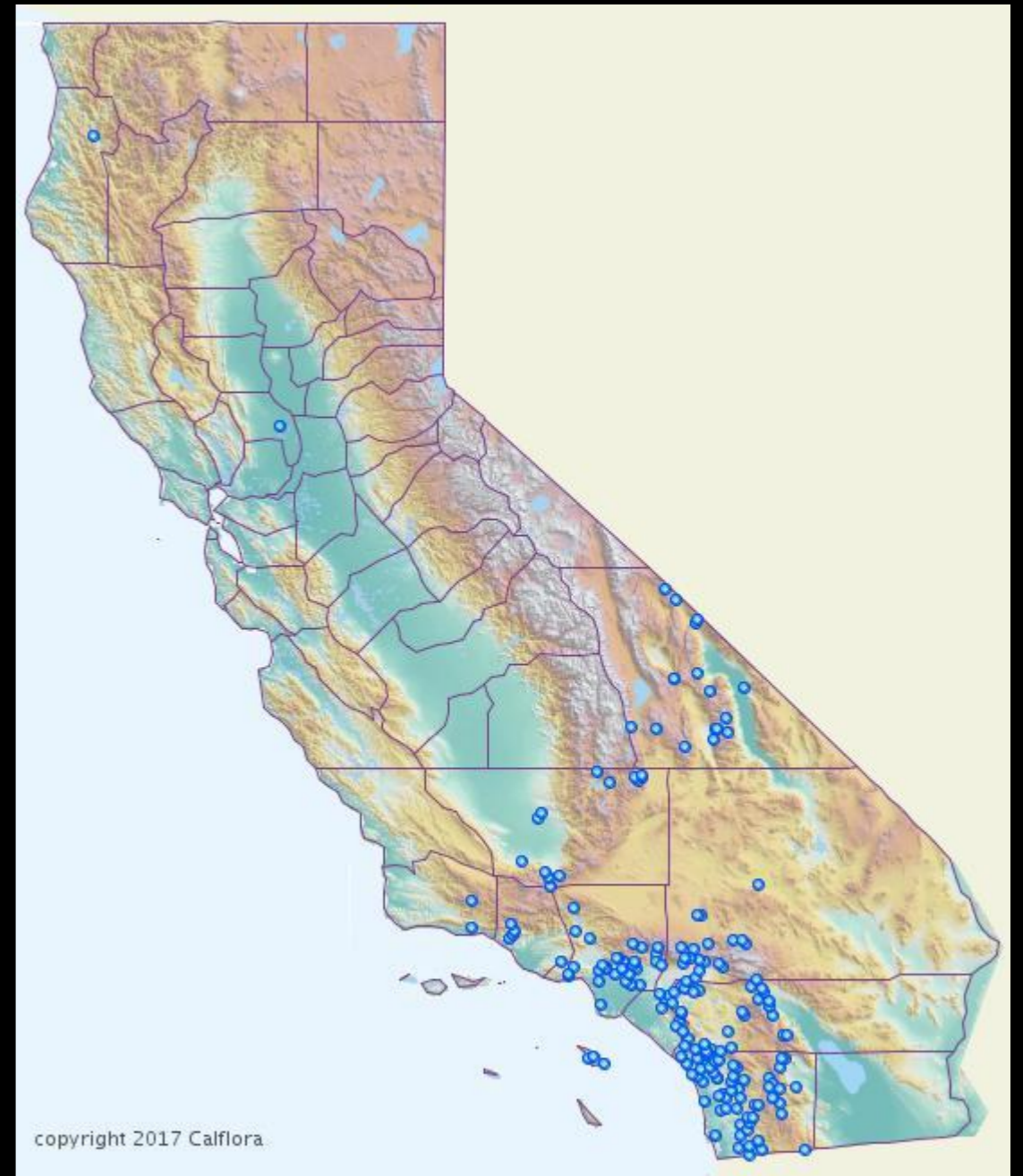


# VITIS CALIFORNICA (CA WILD GRAPE)





# VITIS GIRDIANA (DESERT WILD GRAPE)





# *Vitis* 'roger's red' – roger's red wild grape

- Hybrid between *Vitis californica* and *V. vinifera* 'Alicante Bouschet'
- Self-pollinating
- Easiest native sweet fleshy fruit to grow
- Produces a crop within two to three years
- One plant can produce an abundance of fruit
- July to September is the typical harvest time
- Small and sweet with seeds

## Food

- Jelly
- Juice
- Fresh
- Leaves (dolmas?)
- Fermented beverage?





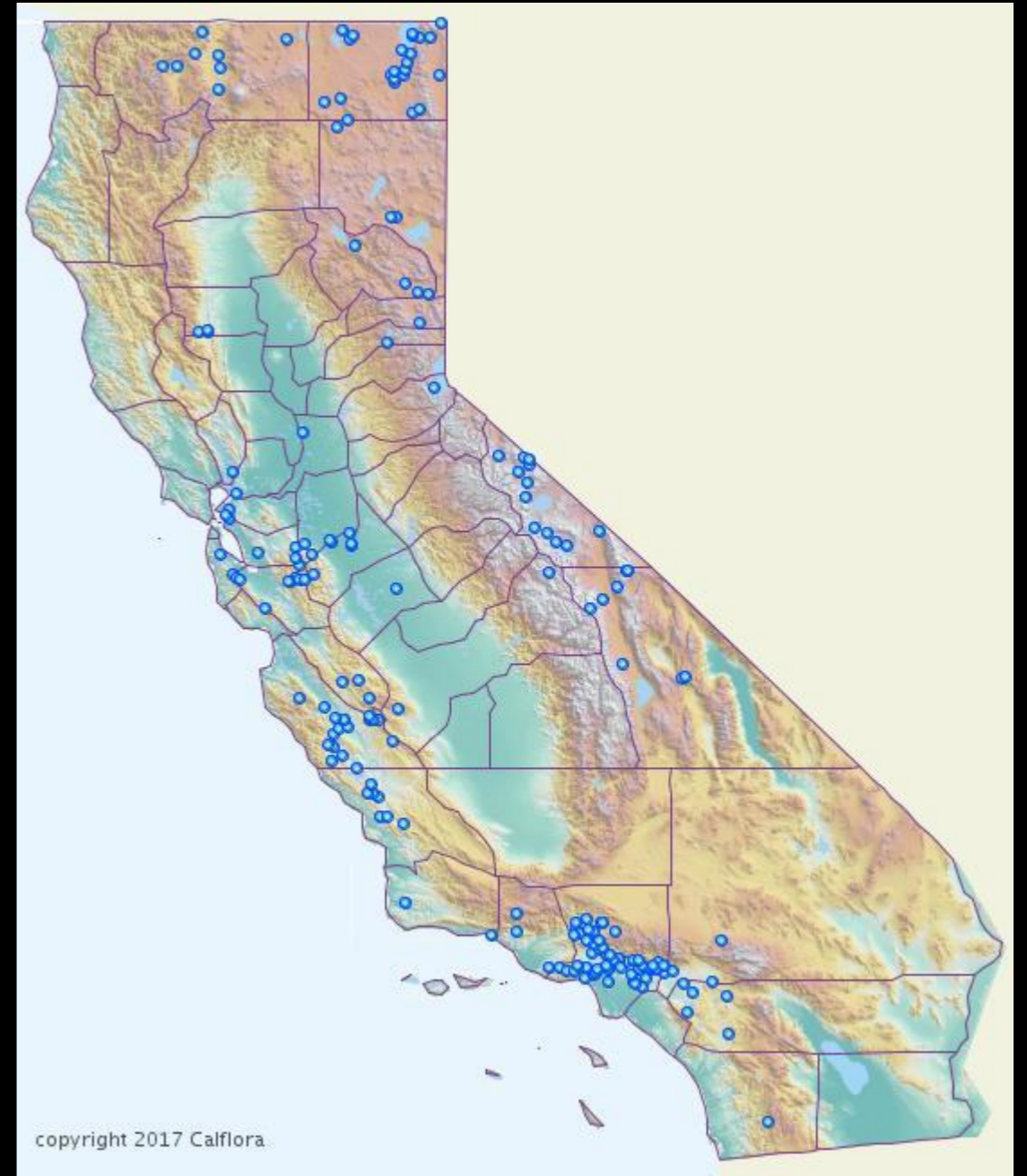
# Bringing blueberries into the garden

- Frederick Vernon Coville (1867-1937), botanist and expert in rushes, currants and blueberries.
- Before this work blueberries were considered unsuitable for cultivation
- LET'S BE CLEAR.....native folks already knew about blueberries and no doubt had their favorite areas and plants
- In 1911 Elizabeth White, approached Coville to use her family farm as a site to create a viable crop with a pleasant fruit.
- By 1916, they had developed a commercially viable plant.





# RIBES AUREUM (GOLDEN CURRANT)





# golden currant

## *Ribes aureum*

- Flavor is highly variable.
- No cultivars have been developed for flavor
- Plant with promise and could be promoted thru local nurseries, community gardens and small farms
- Self-pollinating but plants seem to produce larger harvests when the homies are around

Regarding Ribes cultivars “The fruit of the wild species is often less than 1cm in diameter, but named cultivars have considerably larger fruits up to 3cm in diameter”

### Food

- jams
- eaten fresh, whole
- cordial
- medicinal



*Ribes aureum*



*Ribes* cultivated for fruit



# Some ideas for the NEAR future

1. Native berries (various)
2. Quail Bush
3. Chia
4. Elderberry
5. Pinyon Nuts
6. *Triteleia* species
7. Purslane
8. Slim jim bean





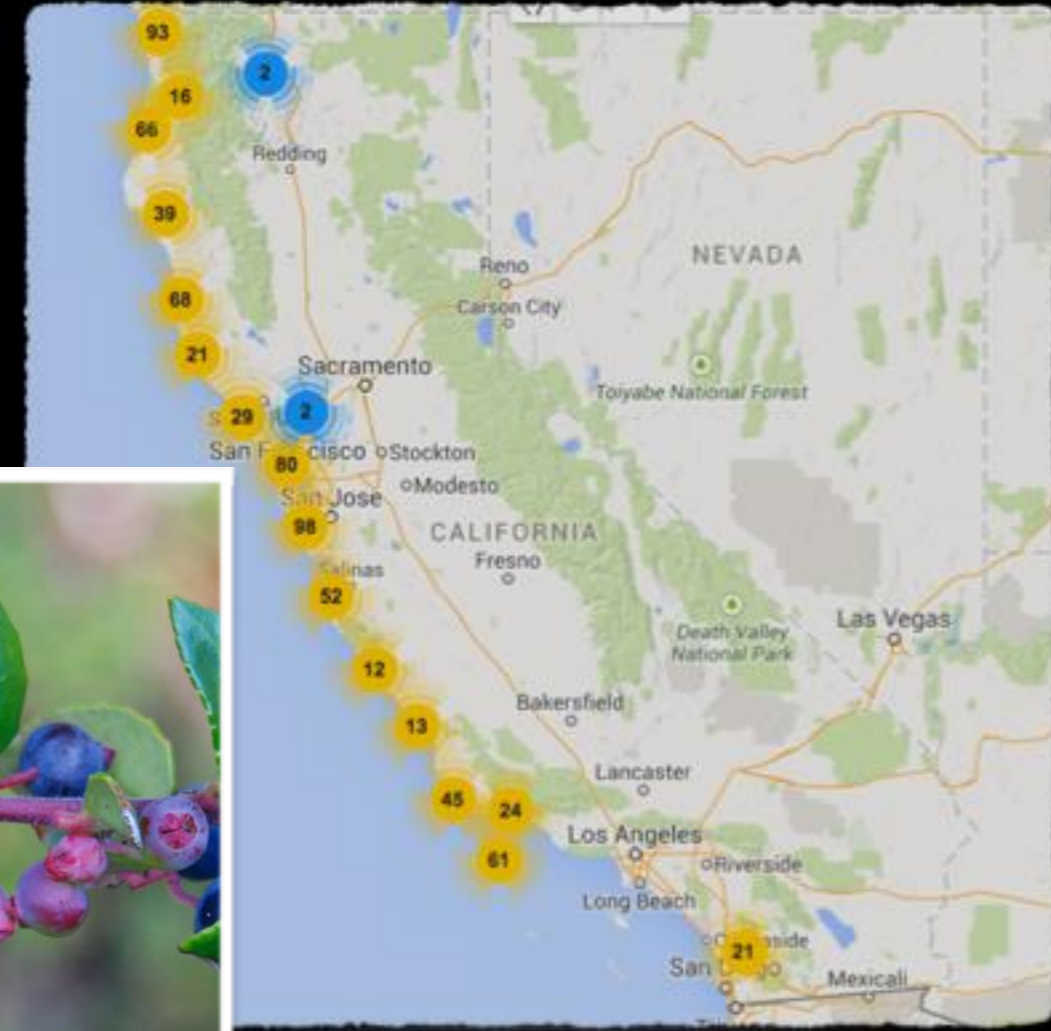
# native “berries” (barberry, currants, etc)

*Berberis, Ribes, Rubus, Fragaria*

- *Gaultheria shallon* (salal)
- *Vaccinium ovatum* (huckleberry)
- *Lycium sp.* (goji berry)
- *Berberis sp.* (barberry)
- *Ribes sp.* (currant)

## Food

- jams
- eaten whole
- cordial
- medicinal



*Vaccinium ovatum* in California

Barberry jam



*Lycium andersonii*





# Vaccinium ovatum – California Huckleberry





# *Vaccinium ovatum* – California Huckleberry

- Native along the coast of California, and very common thru the Pacific Northwest
- Somewhat easier to cultivate than a close relative, the blueberry
- Produces a crop within two to three years from a 1 gallon plant
- Self-fertile, but plant more than one for abundant yields
- July to September is the typical harvest time
- Small, sweet and slightly bitter

## **Food**

- Jelly
- Juice
- Fresh
- Fermented beverage?



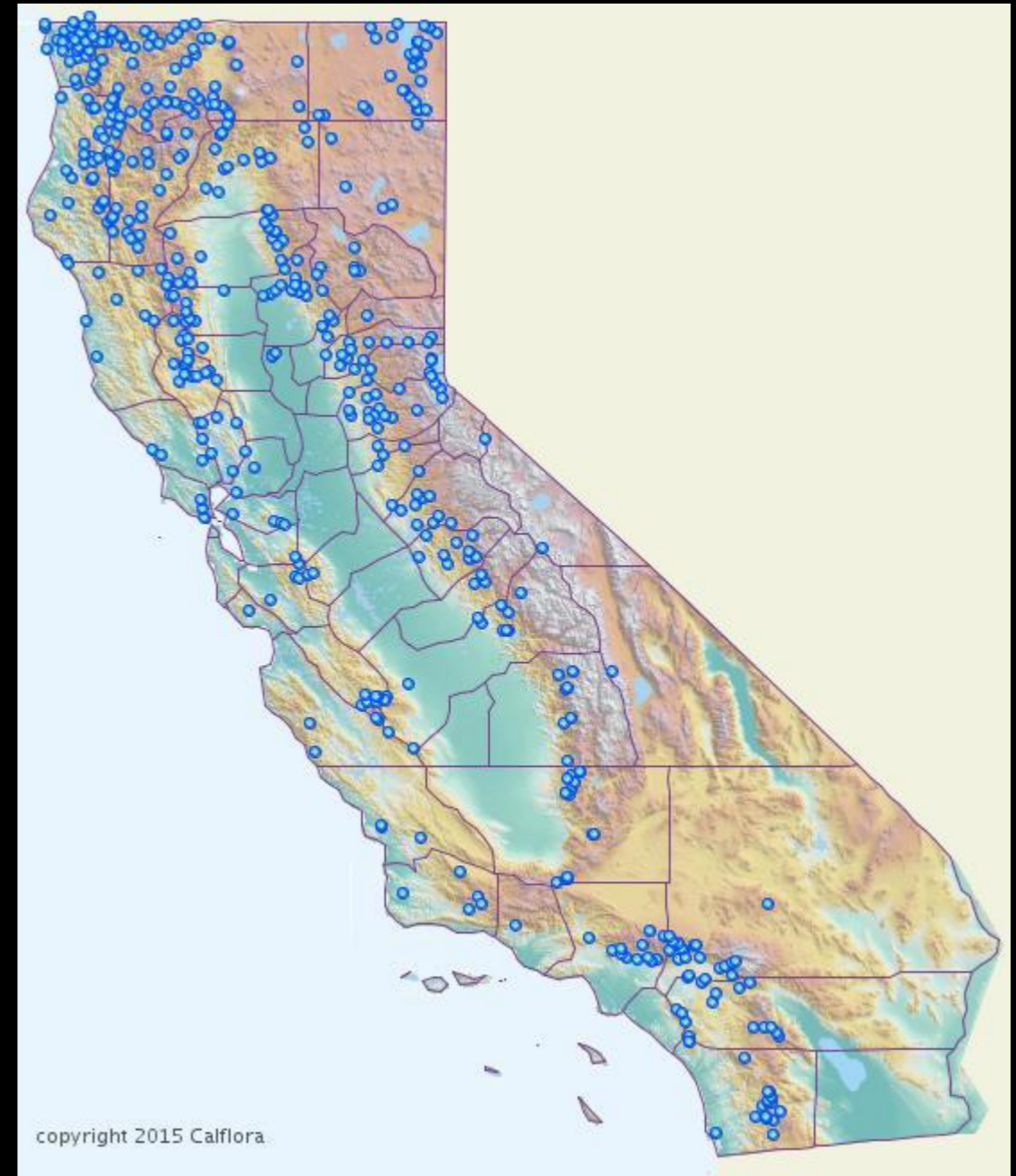


# Berberis nevinii – Nevin's Barberry (self-pollinating)



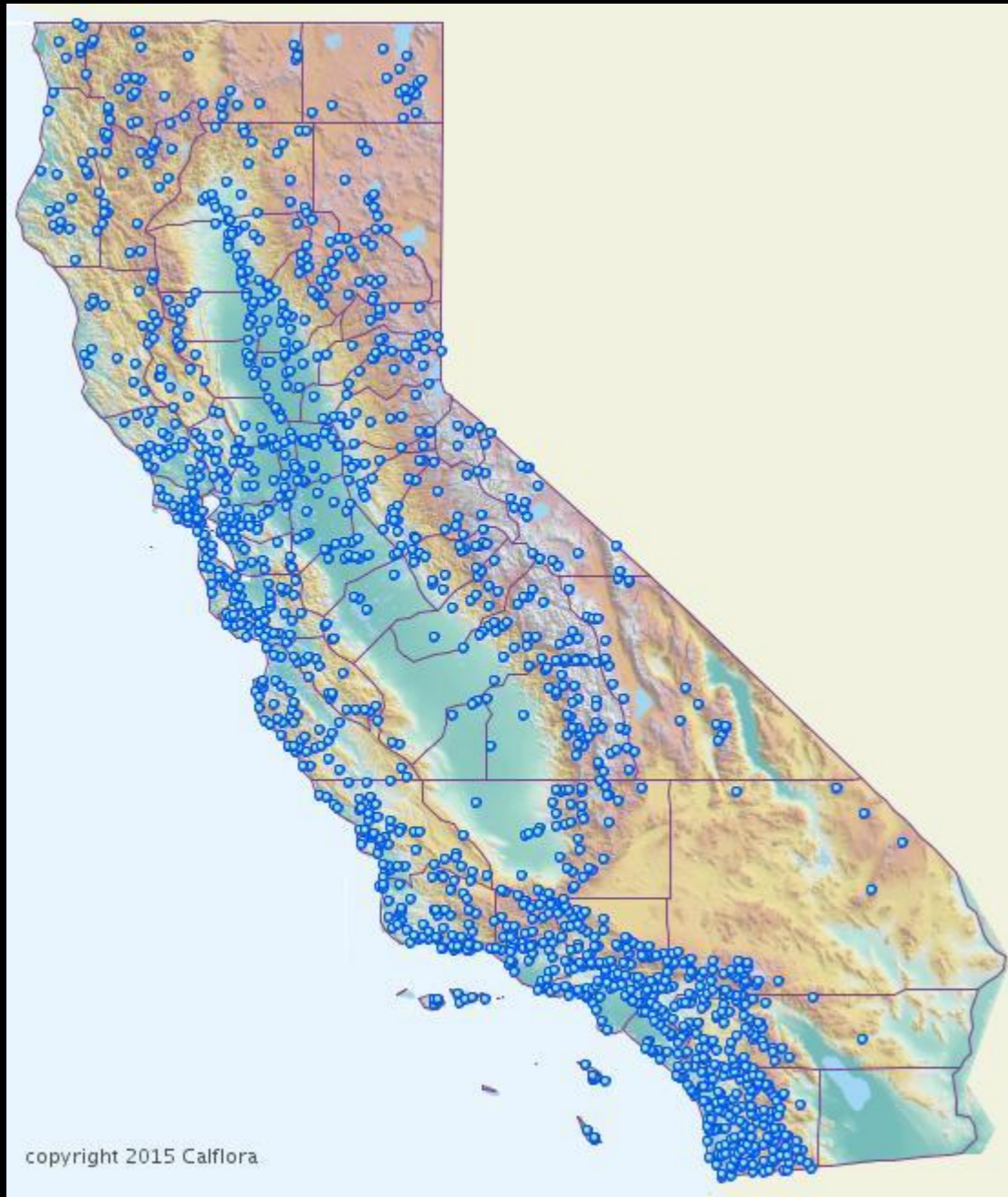


# Berberis aquifolium – Oregon Grape (self-pollinating)





# Mexican Elderberry – *Sambucus mexicana*





# *Mexican Elderberry – Sambucus mexicana*

- Quick growing small tree native across California, often seen growing near water sources
- Produces abundant clusters of tart blue-black berries within 4-6 years
- June to September is the typical harvest time
- Has been used for hundreds of years by different cultures across the world
- Self-Pollinating, but higher yields with more trees in area
- Very adaptable plant
- Fruit contains high levels of phosphorus, potassium, etc.

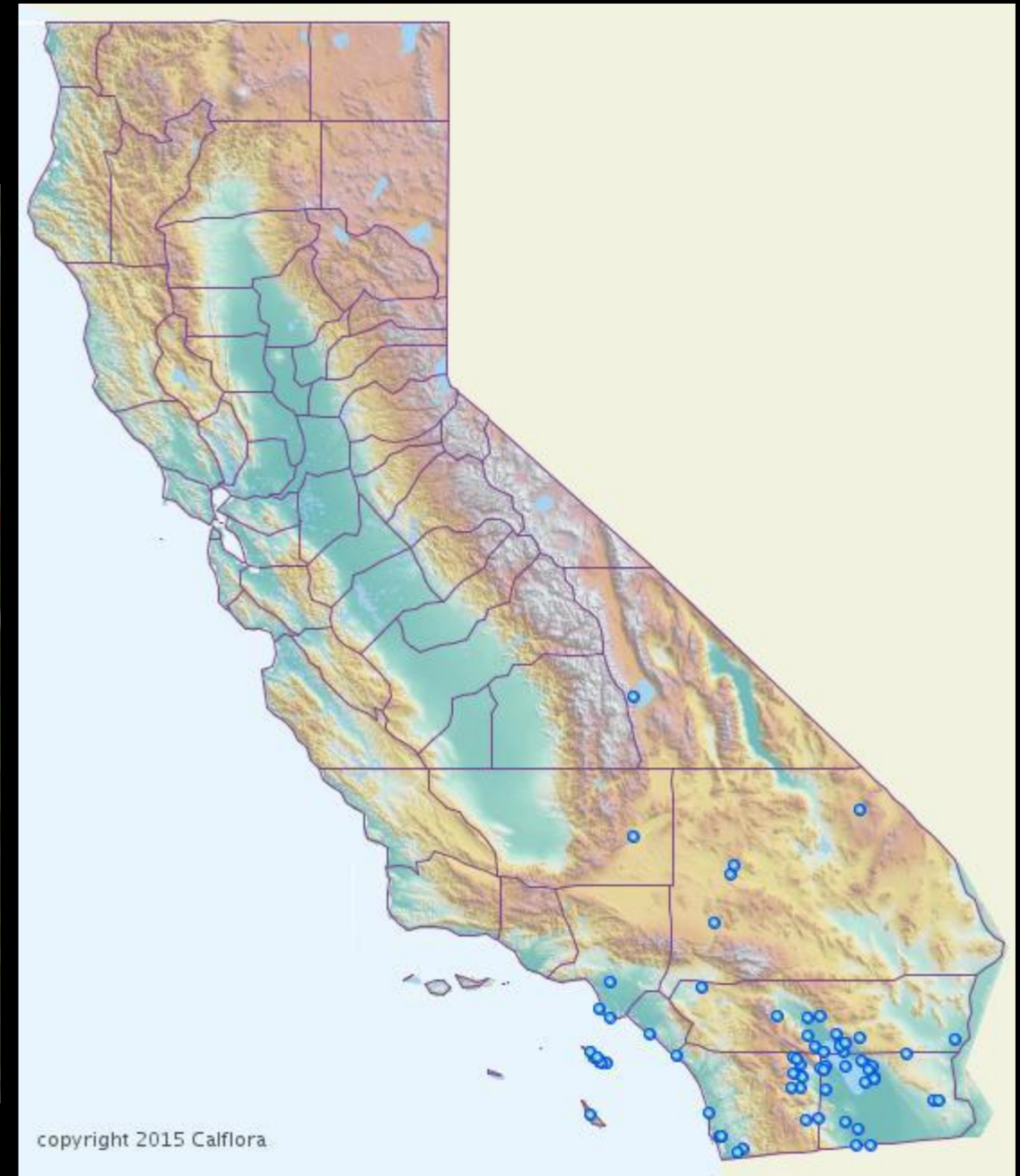
## **Food**

- Jelly
- Juice
- Honey
- Vinaigrette (I don't use it so I can't spell it)
- No fresh fruit consumption recommended
- Baked goods
- Wines and other Fermented beverages



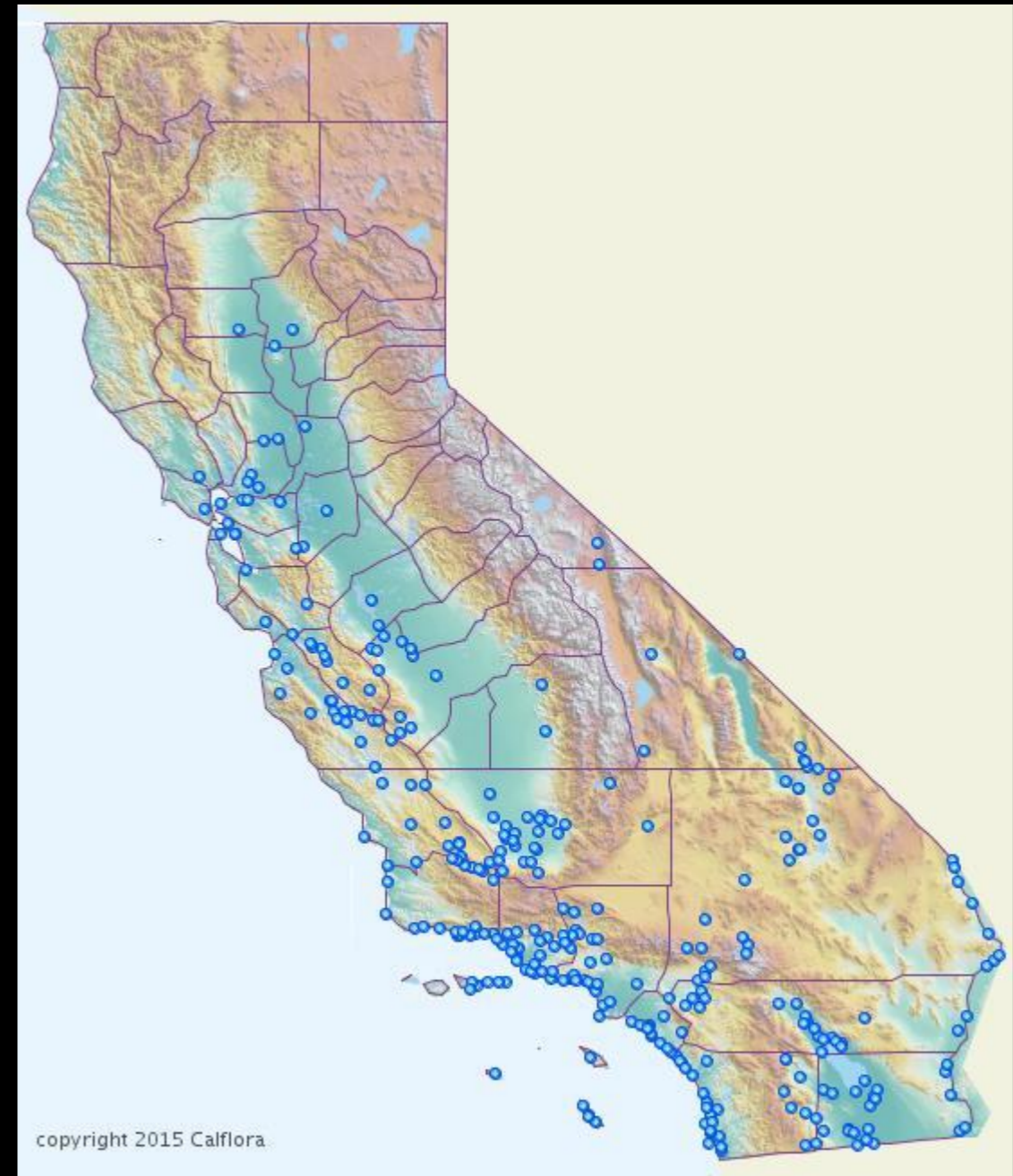


# LYCIUM BREVIPES (BAJA DESERT THORN).....SELF POLLINATING





# ATRIPLEX LENTIFORMIS (SALTBUSH)





# Quailbush – Welcome to La Familia del Amaranto

- Quinoa
- Spinach
- Amaranth/ Quelites
- Beets
- Lamb's Quarters
  
- Easy to harvest, minimal cleaning. More cleaning if you want pure seed.
- Other species (annuals?) may have potential as well.
- Male and female plants, plants at least one of each for seed production

## Food

- toasted fruits (seasoning)
- greens
- grain



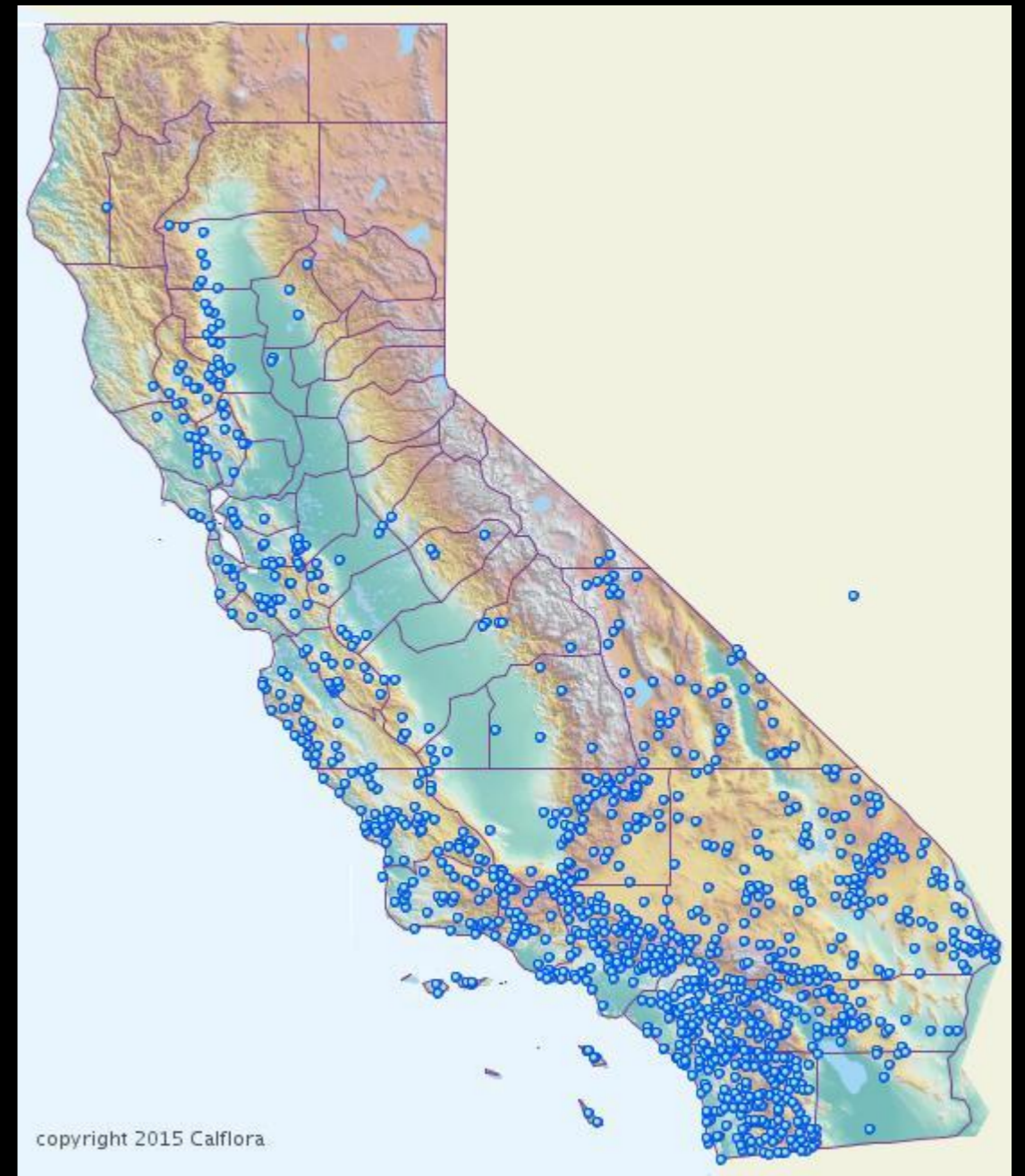
*Atriplex lentiformis* fruits



*Quinoa*

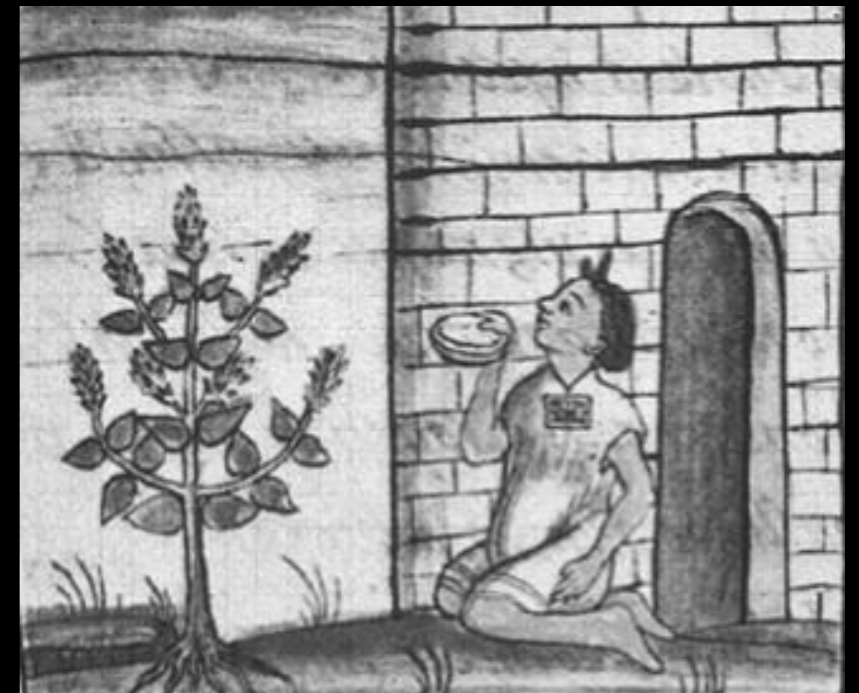
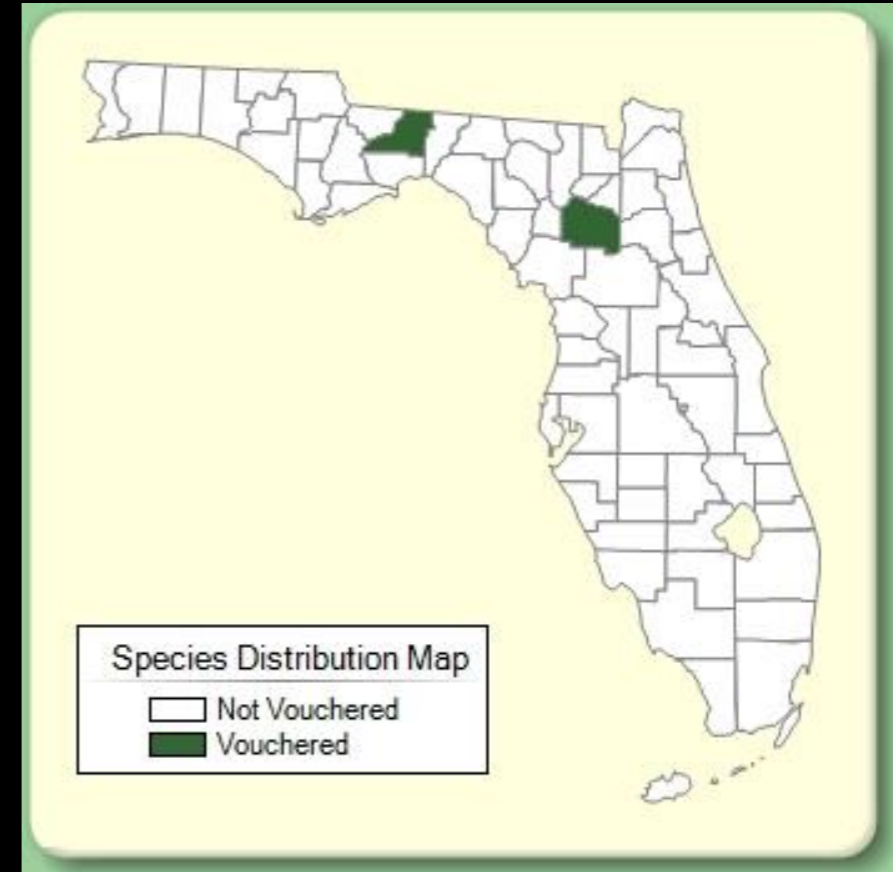


# SALVIA COLUMBARIAE (CHIA)





# SALVIA HISPANICA (CHIA)





# chia

*Salvia columbariae* or *S. carduacea*

- Important to indigenous cultures
- The non-native species is a popular food (*Salvia hispanica*)
- *Salvia hispanica* retail is available at \$2/lb
- *Salvia columbariae* wholesale is at \$120/lb
- Annual habit may make easier to select high yielding genotypes

## Food

- chia pudding
- smoothies
- baked goods



Collecting *Salvia carduacea* Photo by Deborah Small



chia cookie



chia pudding



# pinyon pine

## *Pinus monophylla*

- US Market \$100 million (Missouri's Center of Agroforestry 2004)
- > 80 percent of US pine nuts are imported from China.
- US pine nut trees are not managed for commercial nut production.
- Limited harvest in Nevada

## Food

- pesto
- baked treats
- pine nut oil
- tea (leaves)
- topping

*Pinus monophylla* (single needle pinon pine)





# Slim jim bean (*Phaseolus filiformis*) and Verdolagas (*Portulaca oleracea*)

## *Slim Jim Bean*

- Related to Tepary Beans
- Seen once in last 30 years in Riverside
- Somewhat common in Baja California
- Tepary beans are being studied for extreme drought tolerance in Columbia and other areas
- One rain = crop 2 months later

## **Purslane**

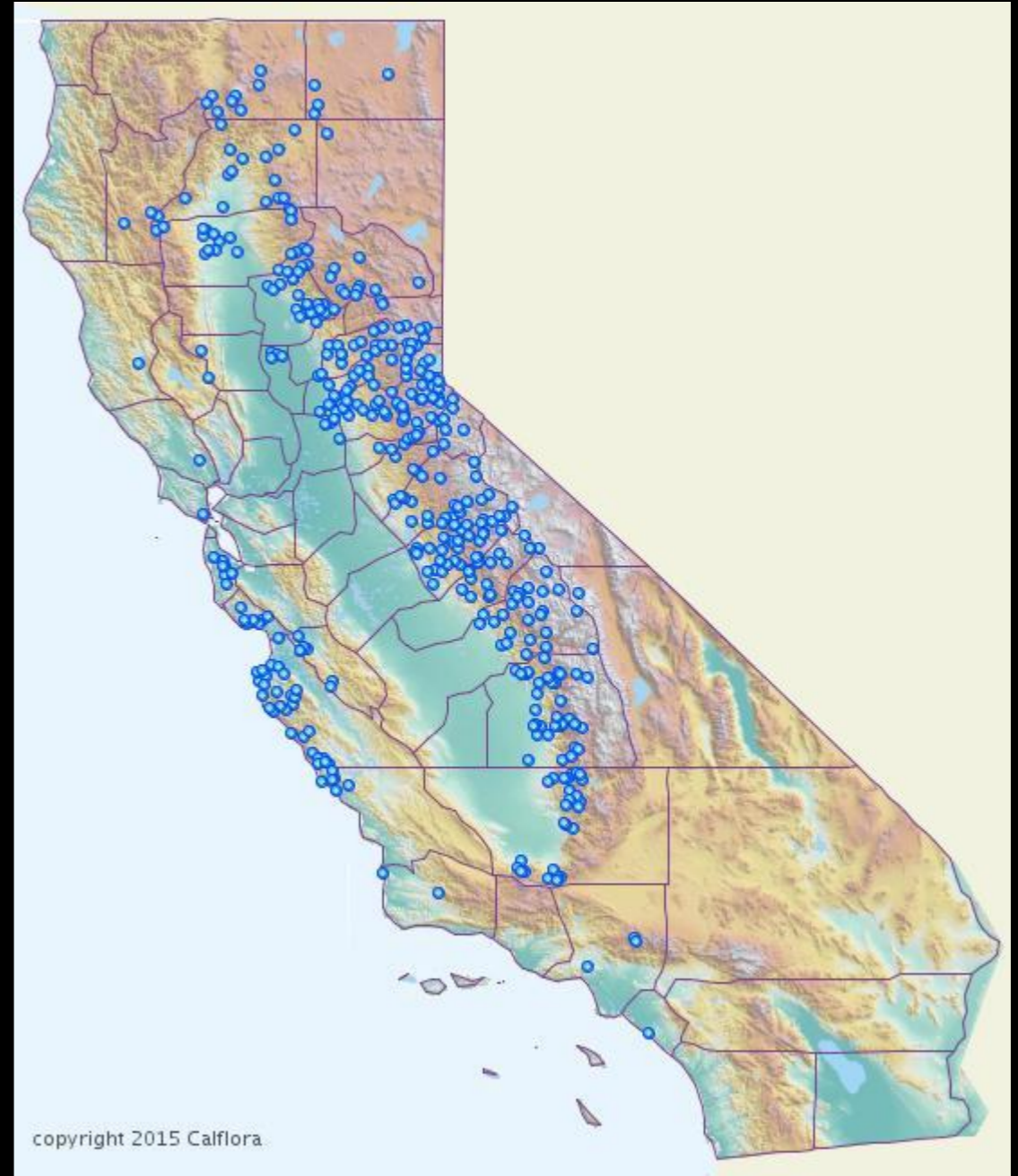
- Reportedly one of the highest, if not highest known plant source of omega 3 fatty acids
- Grows as a non-native weed in many cultivated areas
- Genetic research at Rancho Santa Ana

*Don't smoke this weed A!*





# TRITELEIA IXIOIDES (GOLDEN BRODIAEA)





# ALOYSIA WRIGHTII (OREGANILLO)





# What would a local native food farmers market stand look like?

## Fresh Produce

Miner's lettuce  
Purslane  
Saltbush greens  
Hummingbird sage leaves  
Grapes  
Elderberries  
Saltbush seed  
Fresh Cali oregano and other herbs  
Gooseberries/currants  
Blackberries  
Fresh Beans  
Onions/chives (*Allium*)  
Potatoes (*Dichelostemma*)

## Prepared Foods

Roasted saltbush seasoning  
Dried Sage and Oregano seasonings  
Prunus hummus  
Sage pesto  
Acorn paste  
Manzanita cider  
Chia mixes  
Mesquite baked goods  
Dolmas  
Toyon-Chia energy bars  
Infused oils and vinegars



# *What would ¼ acre native food display garden look like?*

- Traditional raised beds for growing greens, onions, corms and bulbs, herbs
- Native Vineyard (for wine production?)
- Pitahaya-style rows of various clones of golden currant for taste and harvest trials
- Locals only area – Place for tribal folks to harvest food for diets, ceremony, etc including...
- Chia growing trials for tribal people, to produce larger seed heads/ more seed, and easier to cultivate in gardens
- Rows of various Atriplex (saltbush) plantings for taste and harvesting/ processing trials
- Hedgerows and/ or orchards of various clones of Elderberry
- Blackberry and Blueberry-style rows of Huckleberry clones, Barberry clones, etc
- Side – by side plantings of commercially available food plants and their native relatives





*Where can I find out more about this local food stuff with this really nice and funny speaker?*

- TONIGHTS SAME CLASS.....Thursday March 8<sup>th</sup> at Southern California Hort. Society in Los Angeles
- Native Food Cooking Class at A Smart Garden March 14<sup>th</sup> Wednesday Night (\$59.00 a Cabeza)
- May 12<sup>th</sup>.....Ventura Water, Native Plant Maintenance (Springtime)
- May 15<sup>th</sup>.....15 Minutes of Native Plant Fame at Santa Barbara Botanic Garden





# Examples of folks already using and selling native foods online

Malki Museum – Annual agave roast

- Chia Cafe Collective – Cooking the Native Way Book
- Larner Seeds, new book on California Foraging. <http://www.larnerseeds.com/>
- Desert Harvesters Mesquite Cookbook <http://www.desertharvesters.org/mesquite-in-the-kitchen/eat-mesquite-cookbook/>
- BrewLab in Carpinteria – Hummingbird Sage Beer

Ms

HOW MANY FOLKS would be interested in a native food conference?





# Where do we go from here?

- 201? Native Food Symposium
- Food section at native plant nurseries, fruit plants, greens, etc.
- Native Food Demonstration Gardens in public spaces (can be used as training for permaculture and other hippie interns while gathering data)
- CNPS – Promote research and use of native foods
- \* Pitahaya – A new water efficient crop for So Cal Farms
- UC Small Farm Program and Specialty Crops Program
- USDA Specialty Crop Block Grant Program
- Field trials and development of cultivars
- Work with Small Farms, Tribal folks, State and Community Colleges, Garden Clubs, Nurseries, Botanic Gardens and Community Gardens for grants, land and people to further this work
- Marketing and promotion (e.g. miner's lettuce)
- Outreach to influential people, people with \$\$
- Interested? Please contact [sanchezhorticulture@gmail.com](mailto:sanchezhorticulture@gmail.com)





# Thank you!

- Native Peoples
  - Botanic Gardens and Small Native Plant Nurseries
  - Rancho Santa Ana Botanic Garden
  - CNPS chapters and members
  - Dr Naomi Fraga
  - Chia Café
- 
- MY CHALLENGE TO YOU.....IF YOU LIVE IN CALIFORNIA, EAT CALIFORNIA (IF YOU CAN AFFORD IT)
- 
- NOPALITONATIVES@GMAIL.COM



Monkeyflower very little nutritional value!



# Additional Photo Credits

- Arugula (wiki fitness)
- Mediterranean Map (imgarcade)
- Quinoa (scidev.net)
- Salvia spathacea (Annie's Annuals)
- Salvia clevelandii (Las Pilitas)
- Allium unifolium (Dry Stone Garden)
- Huckleberry (nw plants)