



SAN DIEGO COMMUNITY GARDEN NETWORK

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PINE FAMILY



Pinaceae

Py-NAY-see-ee

PINE FAMILY



PINE / CONIFER

Members of the family Pinaceae are trees (rarely shrubs) grow from 7 to 300 ft tall, mostly evergreen (except the deciduous *Larix* and *Pseudolarix*), resinous, monoecious, with whorled branches, and spirally arranged, linear (needle-like) leaves.^[1] The embryos of Pinaceae have three to 24 cotyledons.

Monecious = both male and female cones on same tree



Pine Resin: odiferous oleo-resin is terpene-based and is used for plant/tree protection. Distilled pine resin makes turpentine.

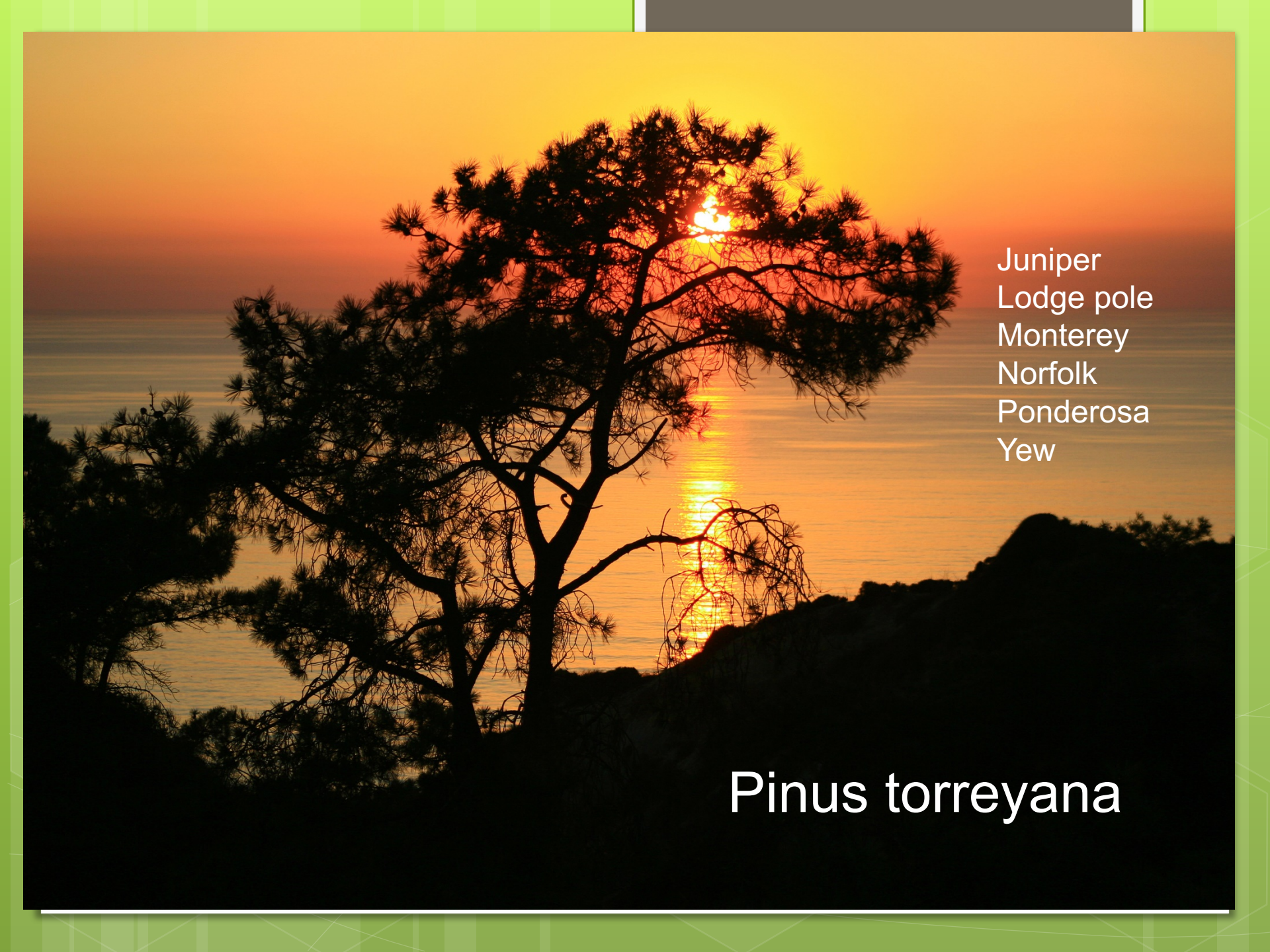
Methuselah: Oldest known bristlecone pine – 4600 years old (White Mountains, CA)

250 Species



250 Species

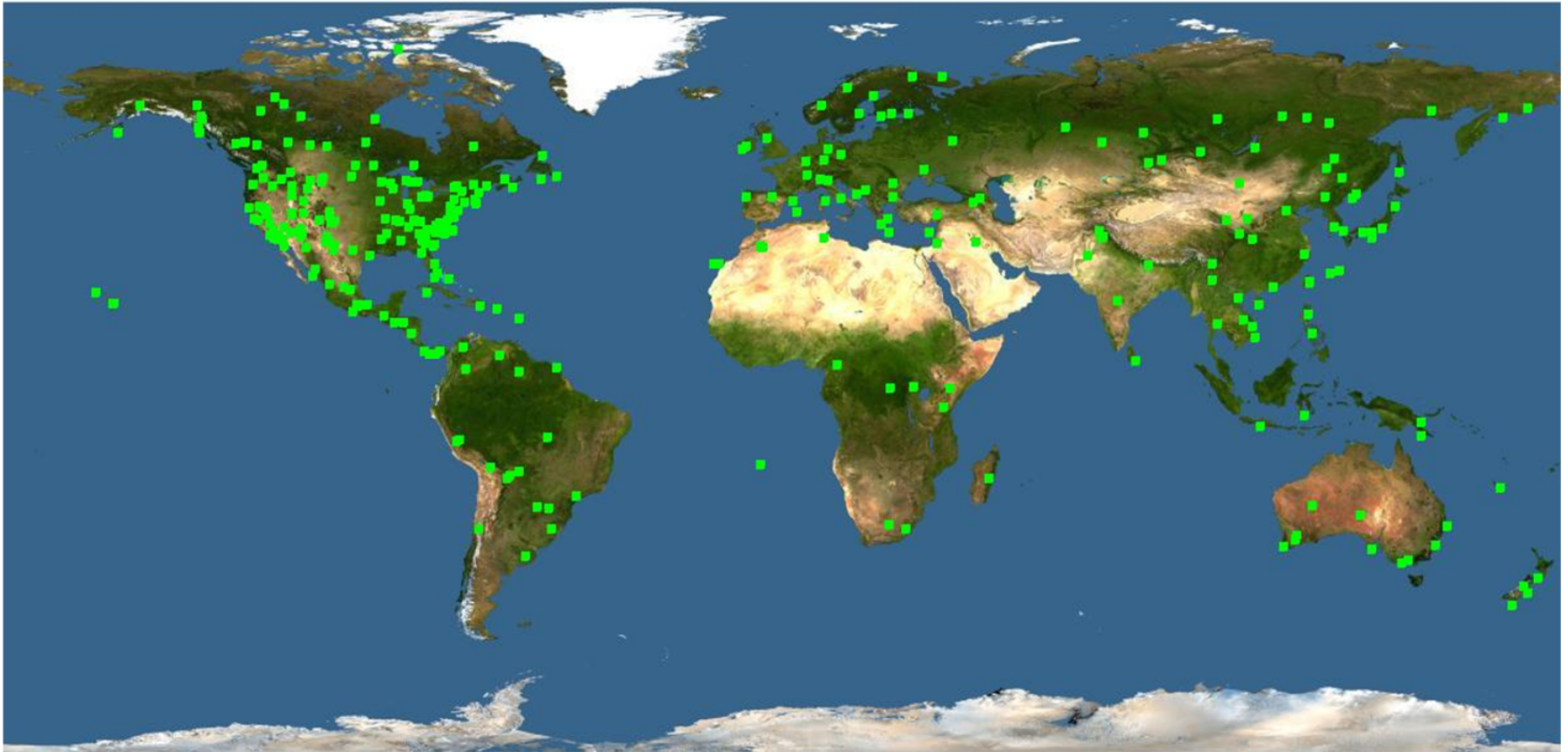


A large, dark silhouette of a pine tree stands in the foreground, its branches reaching across the frame. The background features a bright sunset over a body of water, with the sun low on the horizon and its light reflecting on the surface. The sky transitions from a deep orange near the horizon to a lighter yellow at the top. In the distance, dark silhouettes of hills or mountains are visible. The overall scene is peaceful and scenic.

Juniper
Lodge pole
Monterey
Norfolk
Ponderosa
Yew

Pinus torreyana

Figure 6. Distribution Map of Pines



Likes temperate climates, mostly in Northern Hemisphere, with sub-arctic to tropical distribution.

PINE SOIL

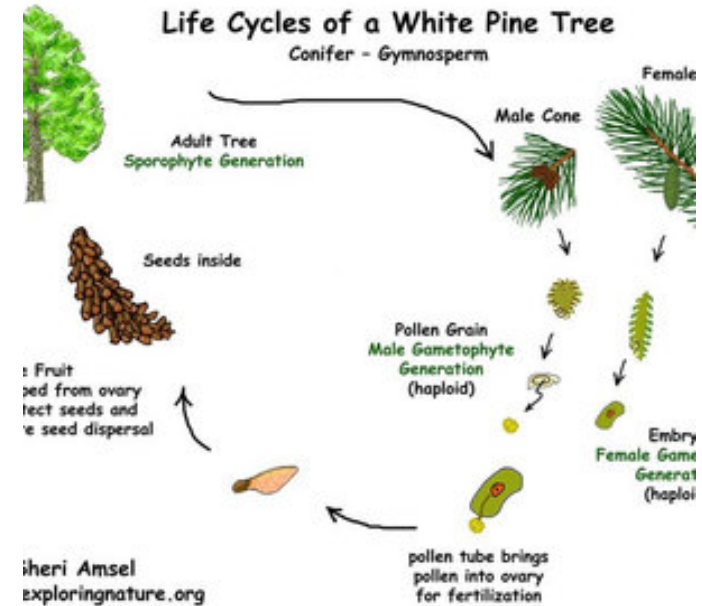
SOIL

Prefers slightly acidic well-draining loamy soil, though different species have variable tolerance for drought. TP likes sandy soil.

WATER

Generally believed to be drought-tolerant. Seedling require regular deep watering through the first three years of their lives, especially during summer months. Young plants send out deep tap roots -- up to 20 to 30 inches long -- which help anchor them and enable them to use deeper soil moisture.

PINE SEX



PROPAGATION: Male pollen fertilizes female ovary. Seed takes 18-36 months to mature. Each scale linked to two seeds. Mature seed-scale acts as a leaf with wings, allowing the seed to be dispersed via *wind*; large-cone species by birds.

PINECONES



Plan. 12. 1891

PINE NEEDLES



Torrey Pines

The **Torrey pine**, *Pinus torreyana*, is a rare pine species in the United States, an endangered species growing only on the Torrey Pines State Natural Reserve, a bluff above the Pacific Ocean, and on one of the Channel Islands, endemic to the coastal sage and chaparral ecoregion in the U.S. state of California.^{[2][3]}



Pinus torreyana has been considered as a plantation tree for forestry use in Australia, New Zealand and Kenya.^[13]

Torrey Pines

Pinus torreyana is found in the [Coastal sage scrub plant community](#), growing slowly in dry sandy soil. The root system is extensive. A tiny seedling may quickly send a [taproot](#) down 24 inches seeking moisture and nutrients. A mature tree may have roots extending 250 ft. Exposed trees battered by [coastal winds](#) are often twisted into beautiful sculptural shapes resembling large [bonsai](#), and rarely exceed 40 ft tall.

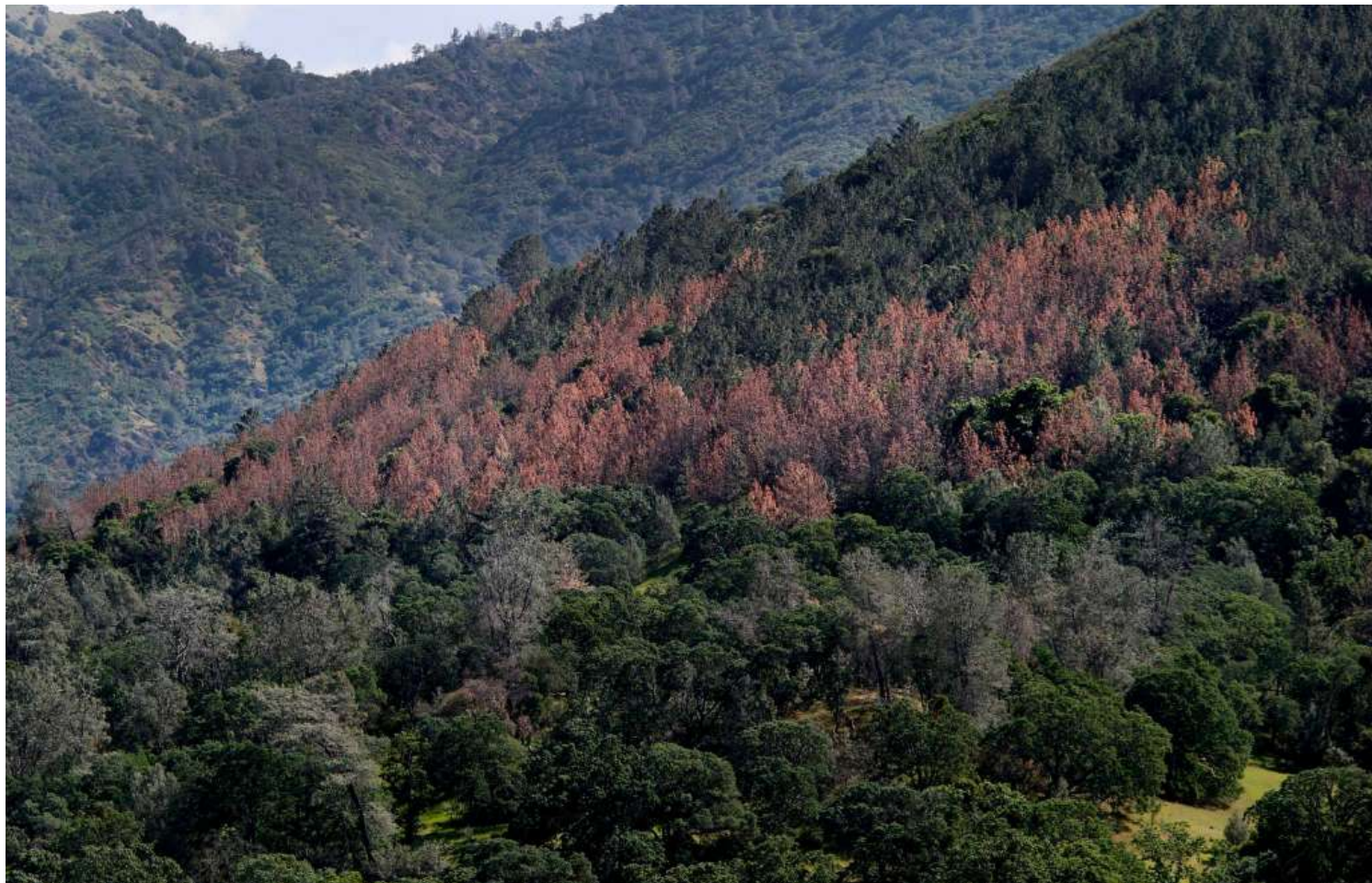
Pinus torreyana was one of the rarest pine species in the world in the early 20th century, with only around 100 trees surviving

Torrey pine is protected by a city tree ordinance in [Del Mar](#), near the native habitat, and construction projects and citizens require a permit for its removal.^[12]

Healthy Pines

Tree part	Uses
Needles	High concentration of Vit C. (pine tea); extract also used as an astringent
Boughs	Bedding, roof thatching (waxy needles)
Nuts	Rich in Vit E, B-complex and oleic acid; minerals - Mn, K, Fe, Mg, Zn, Se
Wood	Heat energy from fire wood (fatwood), lumber (douglas fir) for construction

What happened here?



Name that Bugly?



Tree Bark Damage

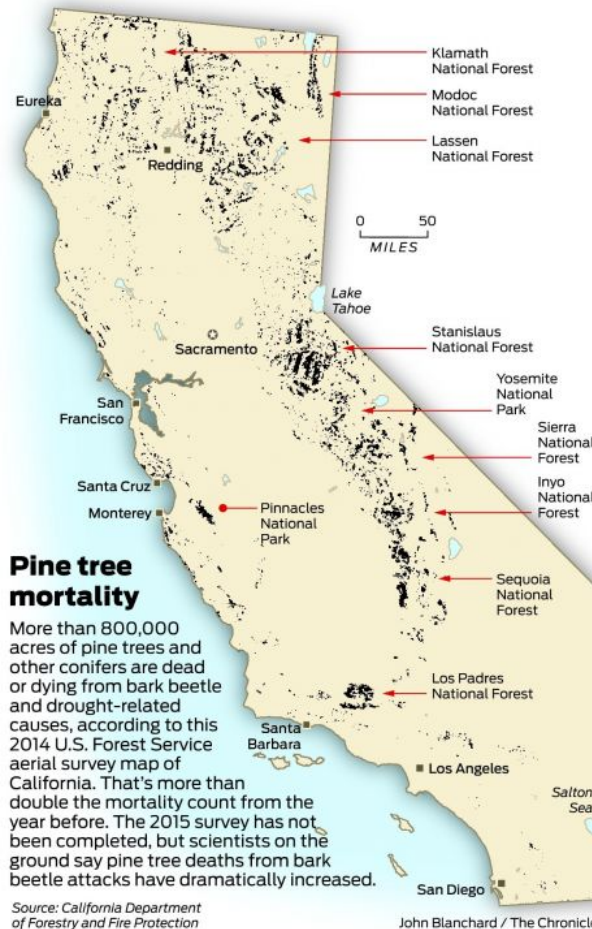


Pine killer



bark beetle

CA Pine Tree Mortality



North American Epidemic

- Warm winters at higher elevations
- Dead trees pose falling and fire hazards
- Natural predators, trees ability to heal
- Drought, climate change
- SEE Pest Notes for IPM

Pest Notes (Nov 2008)

[http://www.ipm.ucdavis.
edu/PDF/PESTNOTES/
pnbarkbeetles.pdf](http://www.ipm.ucdavis.edu/PDF/PESTNOTES/pnbarkbeetles.pdf)

“If all insects on Earth disappeared, within 50 years all life on Earth would end. If all human beings disappeared from the Earth, within 50 years all forms of life would flourish.”

— Jonas Salk

