Evaluating sycamore (Platanus spp.) population genetics to identify native trees for coastal restoration

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Native sycamores are hybridizing with an invasive species. Hybrid sycamores may not provide same ecological benefits in local habitats.

Platanus racemosa
"Western Sycamore"

- California **native**
- Drought tolerant
- Leaves are a food source to species
- Tree cavities provide shelter
- Found in coastal, river habitats

Wind pollinated
=
Easily interbreed
=
Hybrids have combined traits
=
Hard to ID natives for restoration

Platanus x hispanica
"London Plane Tree"

- European **non-native**
- Unknown leaf nutrition
- Unknown drought tolerance
- No tree cavities
- Planted in urban areas

Our goal is to find a relationship between genetics and age to easily identify native sycamores and improve restoration efforts.

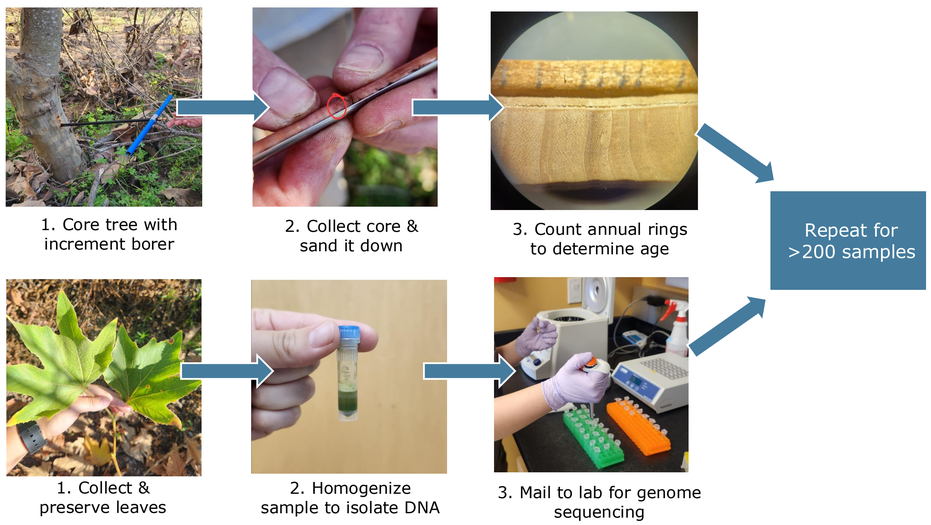

Figure 1. Methods for genomic and tree ring analysis.

Relationship between genetics and population age composition may reveal key insights that make native trees easier to identify in their habitats.

First, identify the area with the highest percentage of native trees.

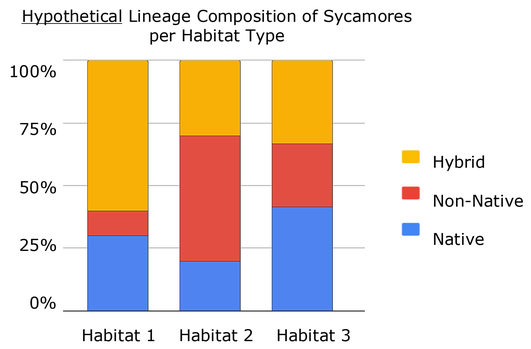

Figure 2.

Second, organize habitat's data to determine the best age that ensures native genetics

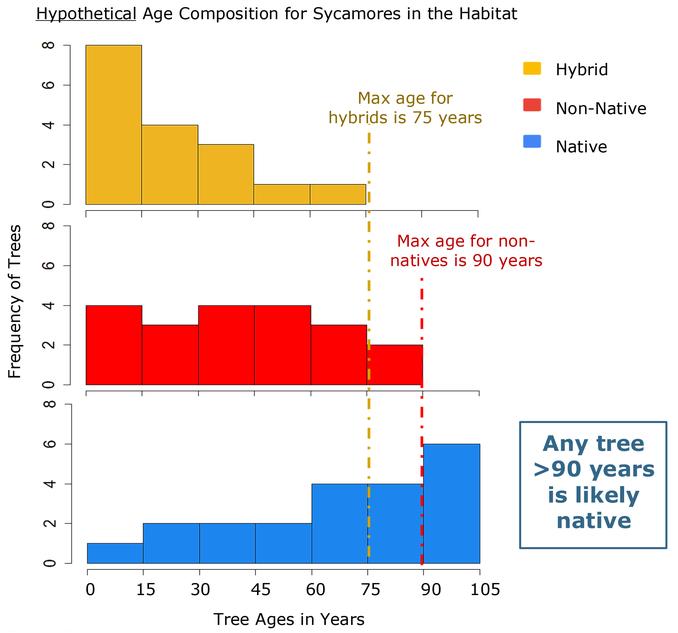

Figure 3.

Next Steps: Continue data collection and analyses to identify native donor trees for future propagation.

- Continue genetic analysis and age determination
- Assess how genetics relate to age composition of population
- Identify native donors for future project propagation
- Collect and propagate cuttings
- Use and distribute native trees for local restoration

Figure 4. Locations of sampled sycamore trees (red and yellow points).

Figure 5. Expected workflow after determining the relationship between genetics and age for quick identification of natives.

Literature Cited

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