Mitigating Cultural Losses From Laurel Wilt

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Laurel Wilt & American Indians

- Miccosukee & Seminole tribes in south & central Florida
  - Mixture of northern tribes
  - FL presence since 18th century
  - Never surrendered!
  - Largely isolated until the 20th century
Laurel Wilt & American Indians

- Cultural & Medicinal Importance
  - Redbay (Persea borbonia) and Swamp Bay (Persea palustris)
  - Key ingredient in 90% of medicine
  - Key element in cultural activities
Laurel Wilt & American Indians

- Ecologically Important....
  - Keystone canopy species in the Everglades
    - Composes 30% of tree canopy
  - Mortality rates of up to 100%
- Wilt has spread rapidly since its introduction into the US in 2002, reaching south Florida in 2010
Research Objectives

1) Identify, propagate and preserve swamp bay trees in south Florida with the potential for resistance to laurel wilt

2) Establish pilot restoration projects in state, federal and tribal lands devastated by laurel wilt

3) Identify if coppicing is a viable prophylactic management technique for prevention of laurel wilt
1) Identify, Propagate & Preserve

- Identify
- Some trees more important?
- Representative samples from all tribal lands
- Trees with existing resistance?
1) Identify, Propogate & Preserve

- Propagate
- Traditionally difficult to propagate
- Expand on previous Hughes & Smith Redbay study, 2013:
  - New propagation techniques

Refered Research

Vegetative propagation of putatively laurel wilt-resistant redbay (Persea borbonia)

Marc A Hughes and Jason A Smith
1) Identify, Propagate & Preserve

- Hughes & Smith Redbay study, 2013:
  - 3:1 Vermiculite:Perlite Mix
  - Intermittent Mist
  - No bottom heat
  - 0.3% IBA gel
  - 20 - 37% rooting success in Redbay
1) Identify, Propagate & Preserve

- New Ideas
  - Alternative rooting hormone and nutrients
    - Worm castings & tea
  - Traditional rooting hormones
    - IBA, NAA, IAA ~ Liquid/gel/powder
  - Softwood & semi-hardwood cuttings?
  - Time of year & cutting size
  - Mist? Or low-tech?
1) Identify, Propagate & Preserve

- Apical wedge graft
- Air layering
1) Identify, Propagate & Preserve

- Preserve
- Tree “banks”
  - In-ground plantings in Citra, FL
  - UF Greenhouse, Gainesville, FL
  - Botanical Gardens
- Trees made available for re-planting or greenhouse storage on reservations
2) Establish Restoration Projects

- Replant in state, federal and tribal lands
- Putatively resistant trees
- Areas devastated by LW
3) Coppicing

- **What is it?**
- **Why?**
- Beetles attracted to trees with 3”+ diameters
- Trees may be able to “skip” epidemic
3) Coppicing

- Two Experiments; Eight Treatments
  - Seasonal effect? (Winter vs. summer)
  - 64 trees in Goethe State Forest, 8 - 25 cm dia
  - Cut surfaces covered with 1” soil or tanglefoot
  - Height: 1” below or 2” above ground
  - With and without fungicide
- Monitor beetle populations
- Possibly include a prescribed burn observational study
3) Coppicing

- **Advantages**
  - Non-chemical management technique
  - Ability to save diverse range of genetic material
  - Prescribed burns could be fast & economical
Where You Can Help

✧ Help us find “survivor” trees
✧ Provide location, or
✧ Provide cuttings and send
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Questions? Comments?

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