

Thousand Cankers Panel Discussion

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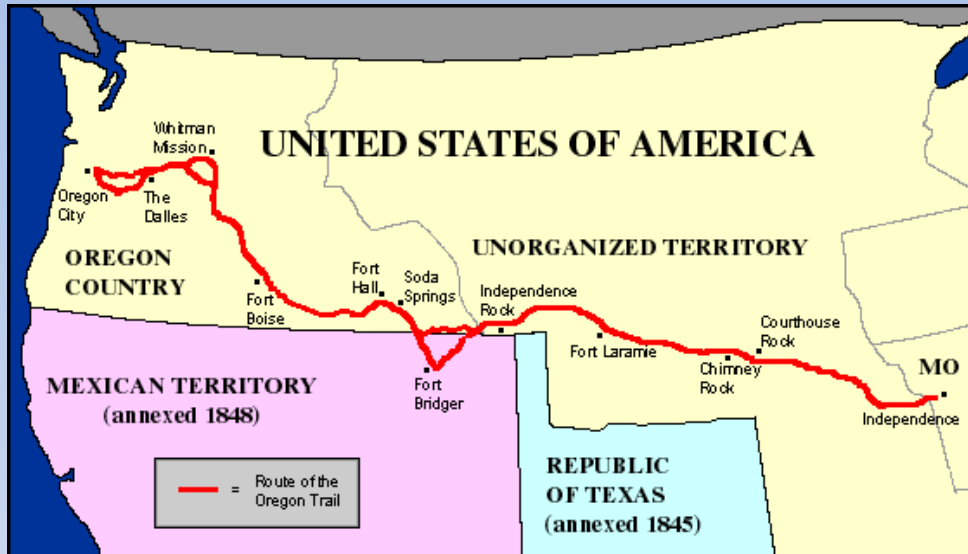
Cahokia, 700-1400

pop. 20,000 1100-1200

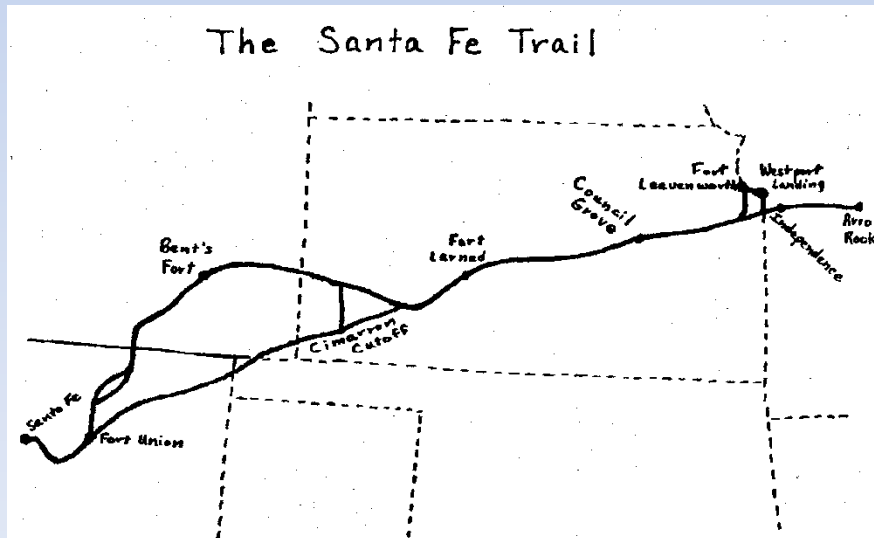


Gateway to the West

The Oregon Trail



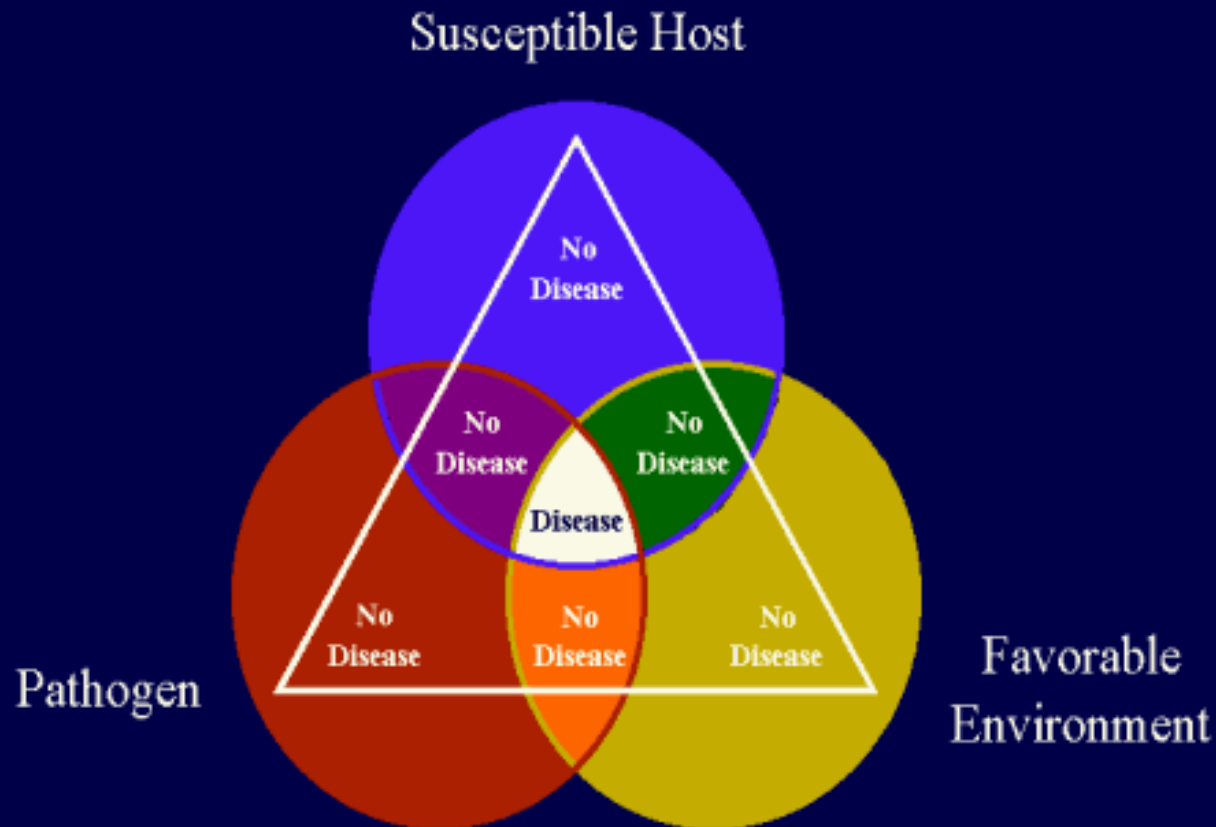
The Santa Fe Trail



Plant Diseases

The Disease Triangle

2



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Methods of disease control can be thought of as modifying the disease triangle by reducing or eliminating one of the corners of the triangle.

Is it native or exotic?

The Mielke hypothesis:

In native forests, there are no native pests in the east or west that ever have become epidemic in the other.

Exotic pests HAVE overcome the
east/west barrier of the Great Plains:
WPBR, GM, Diplodia, soon to be EAB?

Others?

Corollary to the Mielke hypothesis:

If there is a pest in native forests that occurs on different hosts in both the east and the west then it is an exotic.

North America reached a native “pest equilibrium” over 10,000 years of human habitation and the movement of plants and animals.

Bullets from the conversations:

- No diagnostic symptoms, dieback
- Beetle and *Geosmithia* always associated
- No damage to *J. major*
- Not a “twig beetle” on *J. nigra*
- Jumping hosts
- Big bang vs. butthead
- Need multiple, sustained attack
- Uncle Bennie

Bullets con't:

- Beetle is an obsessive/compulsive, taster/inoculator, “über” vector
- Beetle has the full complement of natural enemies in CA
- Is *J. microcarpa* susceptible?
- Complex is highly integrated into native stands in CA
- Hurry-up already with the pheromone
- GC-EAD = insect torture device

Bullets con't:

- Don't tell me there's not enough money or people
- There's been ample opportunity for 1K to have been introduced over the past 40 years
- In Utah all trees 20-50 years old are dead
- Trees 6-8 yrs old begin to be attacked
- Establishment and spread potential: high
- Approach rate: low-mod
- Areas of uncertainty
- Wood packing material – pallets
- Quarantine is not a silver bullet

Bullets con't:

- \$.5 billion npv in MO alone
- 25-30 million nuts/year
- People? Priceless
- In Oregon, young trees and regeneration are not attacked - nigra vs nigra x?
- Slow disease progression
- Cankers in phloem
- Dieback occurs in winter
- Cut hard

Bullets con't:

- You didn't hear it from me, but these guys are important
- Plan for the worst case
- Balance concern and overstating impacts
- Prepare a strategic response plan soon
- Be ready to act
- Nightmare in Kansas and chickadees save the day!

Table 4. TCD pathway summary table.

Pathway	Estimated Approach Rate	Justification	Areas of Uncertainty
Timber	Low	Walnut production is very low in the west relative to other species and timber is shipped only rarely from west to east.	Movement (frequency, quantity, distance) of walnut by individuals is unknown.
Firewood	Low to Moderate	There are 18 campgrounds in Kansas and Nebraska that may facilitate movement of TCD into the eastern range of <i>J. nigra</i> . Long distance movement could occur through firewood distributors and long-distance campers as well.	Quantities and frequency of movement are unknown.
WPM	Low to Moderate	WPM accompanies nearly all types of commodities shipped domestically; 1.2 billion pallets are in circulation.	Infested WPM from the west could move; WPM from the east could become infested.
Nursery Stock	Low	There have been no reports of infected nursery stock. Additionally, very few nurseries in at-risk counties ship walnut to the east.	If nursery stock with WTB and TCD were shipped into the east, the potential for establishment may be high.
Scion wood	Low	Walnut breeding programs in the west are well aware of TCD and have altered their practices to prevent spread of the disease.	Individuals trade scion wood via the internet; frequency and quantities are unknown.
Nuts	Negligible	TCD is not systemic and there is no evidence that it can spread into nuts. WTB unlikely to be attracted to nuts or hulls.	There is no published research affirming that <i>Geosmithia</i> sp. is incapable of moving through nuts or hulls.
Natural Spread	Low	WTB is estimated only fly 1-2 miles. Great Plains States may serve as natural barrier due to limited host material. The WTB (with the pathogen) may move along riparian corridors.	Beetle movement could be assisted by wind currents. Density of planted black walnuts in Plains States is unknown. If TCD becomes established in the east, natural spread is likely to increase.