



Forest Health Challenges

Diseases and Insects



Sustainable Forestry Challenges: Diseases & Insects





What is Normal?





What is Not Normal, but still OK?



Biotic or Abiotic?

Biotic: living

- Insects
- Diseases
- Fungi
- Animals
- Humans



Abiotic: non-living

- Temperature
- Drought or flood
- Fire or wind
- Chemicals
- Soil compaction
- Soil nutrition



Biotic or Abiotic Symptoms

Characteristics of Biotic Symptoms

- Affect individual plants or plant parts
- Appear over time
- Affect some species much more than others



Characteristics of Abiotic Symptoms

- Affect whole plantings
- Appear suddenly
- Affect many species



Biotic or Abiotic: Example



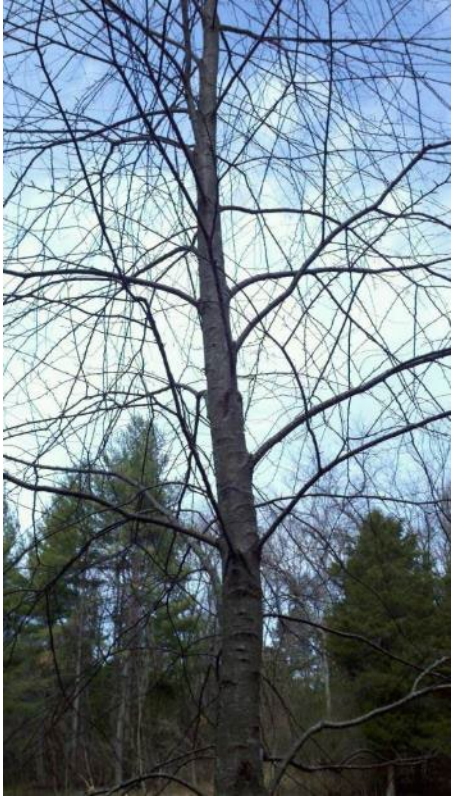


Chestnut Blight





Chestnut Blight Symptoms



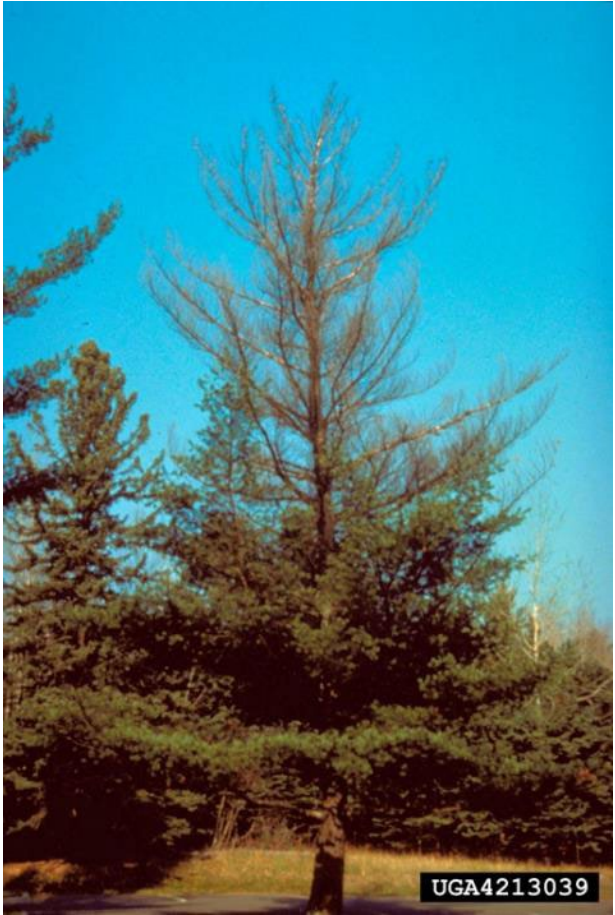
Dogwood Anthracnose

- Attacks bracts, leaves, stems
- Lethal to tree
- Progresses from lower branches up
- Favored by cool, wet weather
- Problem in shaded, fog-prone areas





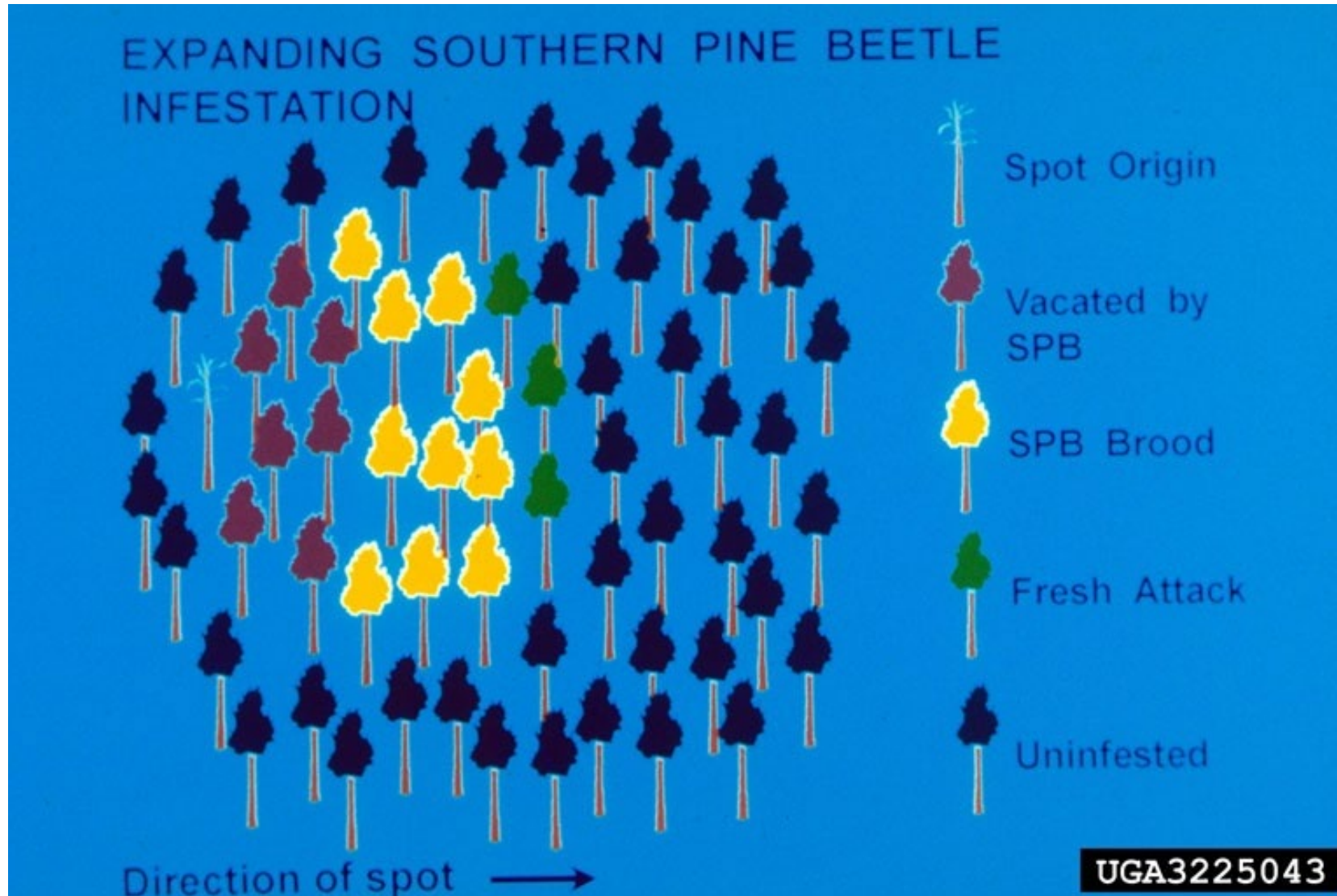
White Pine Blister Rust



Emerald Ash Borer



Southern Pine Beetle

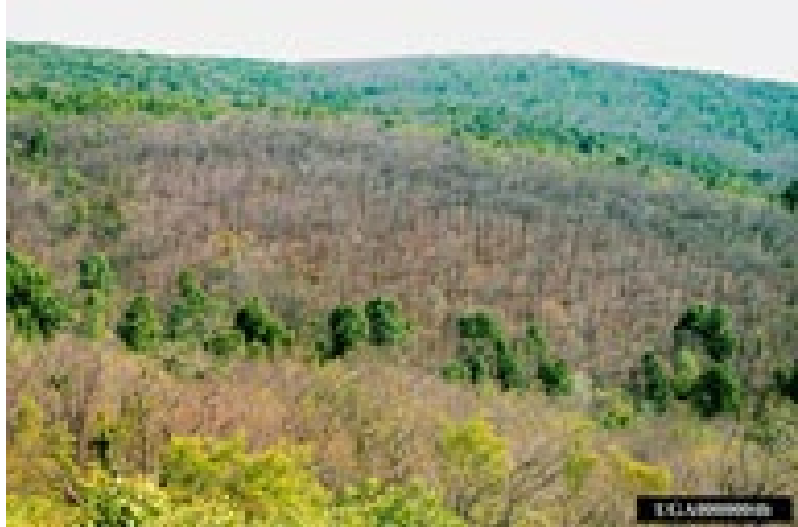


Southern Pine Beetle Symptoms

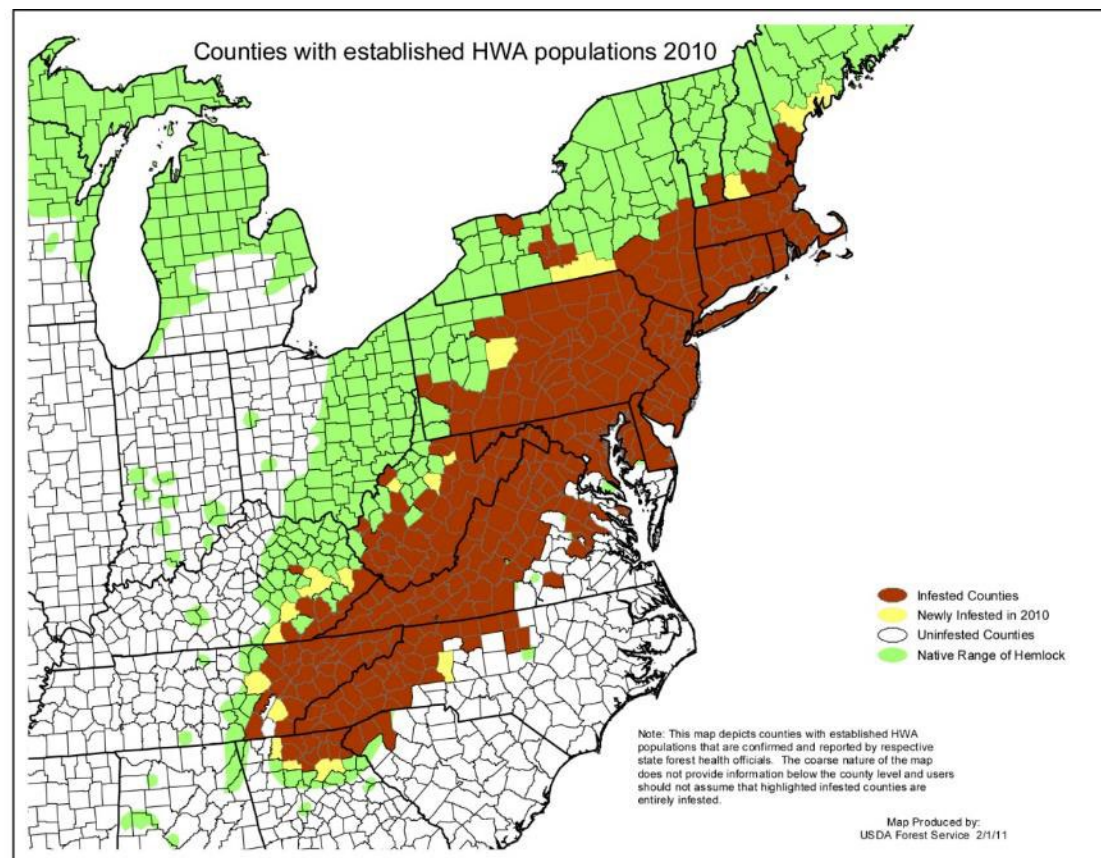




Spongy Moth



Hemlock Woolly Adelgid



Other Damaging Agents



24 Ways to Kill a Tree



Decline

- Predisposing factors
 - Age
 - Long-term drought
 - Soil compaction
 - Crowding
- Inciting factors
 - Frost
 - Defoliating insects
 - Drought

- Contributing factors
 - Root disease
 - Fungus/cankers
 - Boring insects





Discussion?

