Forest Health Issues Affecting CRP Plantations Ten Years and Beyond

Terry S. Price[1]
[1]Entomologist - Georgia Forestry Commission

The Entomology and Forest Resources
Digital Information Work Group

Diseases

Fusiform Rust: Fusiform rust is the most damaging disease of slash and loblolly pines throughout the southeastern U.S. The disease causes stem, branch and trunk cankers to form on infected trees. These swollen cankers are often covered with orange powdery spores in the early spring. The amount of infection in stands depends upon individual tree resistance, site quality and rust virulence. Figures one and two rate the relative hazard of loblolly and slash pines according to geographic location. The majority of rust infections occur between the ages of one and five. Severely cankered trees should be removed during the first thinning.

Annosus Root Rot: Annosus root rot is a serious disease of slash and loblolly pine plantations throughout the south. Plantations are infected when thinnings occur and wind-blown spores of the fungus land on freshly cut stump surfaces. The fungus then grows down through the stump and roots infecting adjacent root systems of healthy trees. Certain soil types are more hazardous for the disease. Figure three shows the relative hazard for getting root rot based on soil types and their distribution throughout the state.

In general, dry sandy soils are most hazardous for infection. Annosus root rot can be prevented or minimized by treating all stumps with a borax formulation or a specially prepared fungus culture that acts as a root rot antagonist when sprayed on freshly cut stumps. Plantations that get infected as a result of thinnings can be identified by the presence of uprooted trees 3-5 years following the thinning and thin fading crowns with clusters of dead and dying trees.

Pitch Canker: This disease is caused by a fungus that is windblown and insect transmitted to branch shoots and damaged bark areas of many pine species. Infected pine shoots are killed and a copious flow of resin occurs in the area of infection. Pitch canker tends to appear frequently during droughts but is often found in plantations that have been fertilized or in those growing near chicken houses. Slash, longleaf, and loblolly pines are susceptible to pitch canker, however, mortality from the disease is usually minor and trees generally recover after a few years. Trees that are infected are likely to be attacked by various insects such as weevils and bark beetles.

Insects

Pine Bark Beetles: Five species are common throughout Georgia: (1) black turpentine beetle, (2) southern pine beetle and (3) three species of engraver beetles (Ips beetles). Bark beetles are most active between March and September with limited activity on warm winter days. Two types of populations are generally recognized; endemic and epidemic. Endemic populations occur most often and are characterized by less than one beetle spot for every 1000 acres of pine in a

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http://www.bugwood.caes.uga.edu

county. Epidemic populations occur every 5-10 years and may be scattered over 2/3 of the state. During epidemics vast areas of pine are killed and the monetary losses often exceed tens of millions of dollars.

The black turpentine beetle prefers trees damaged by logging and construction equipment, lightning and naval stores operations. As the name implies, these beetles are highly attracted to the odor of pine resin from wounded trees.

The southern pine beetle is less discriminating and will attack healthy as well as weakened and damaged trees. It kills trees in groups of 10 to many thousand and is the most destructive of the pine bark beetles.

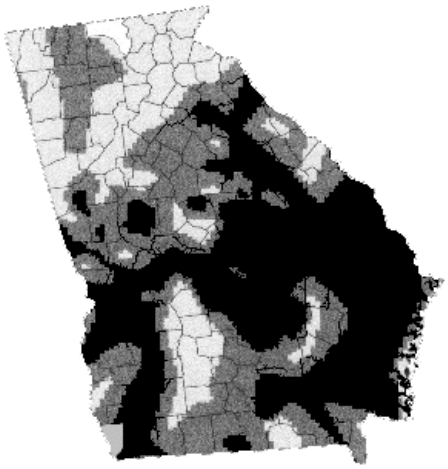
The engraver beetles prefer hot weather and will attack logging slash and trees damaged by lightning, fire, drought, disease and over-crowding. They are most active from June through September and kill trees in groups of 20 or less, however, during extreme droughts spots may grow to several acres in size.

Bark beetles are best controlled by salvage removal of all infested trees. Timber stands should be managed and kept in good condition (adequately thinned, burned etc.) to reduce the likelihood of bark beetles.

Root Development

Artificially regenerated pines are often planted in a hurry to facilitate the problems of time and space. The tree planting season (bare root) in Georgia runs from mid-November to mid-March and several thousands of acres are planted each year with an average of 700 or more seedlings per acre. Too often the hurry to establish a stand takes precedence over the quality of planting that is achieved. Fortunately for the CRP land-owner this may not necessarily present a problem due to the rigorous post planting inspections done by GFC foresters. But in general across the south, many trees are planted too shallow or the roots have been improperly positioned for optimal growth and development. “J” and “L” rooting are serious problems and can affect the lifetime performance and destiny of a plantation. The GFC is currently involved with designing a research study to evaluate the long-term effects of improperly planted trees. The assumption is that improperly positioned roots have a negative effect on growth rate, growth form, vigor and susceptibility to diseases and insects. The root system of a pine “properly planted” ideally should be an inverse design of the tree above ground, however, trees improperly planted will often develop abnormal growth habits above ground that can be identified. When CRP plantations are thinned landowners should make every effort to identify and remove as many of these trees as possible.

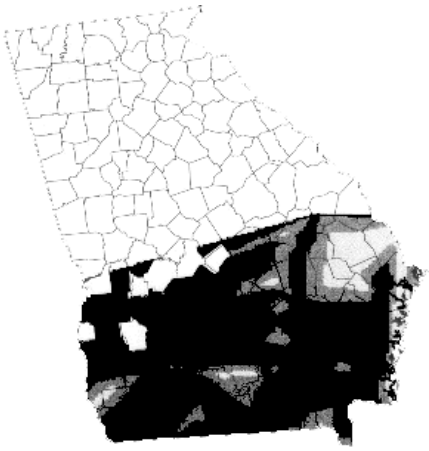
FIGURE ONE



Fusiform Rust Hazard - Loblolly Pine

State of Georgia

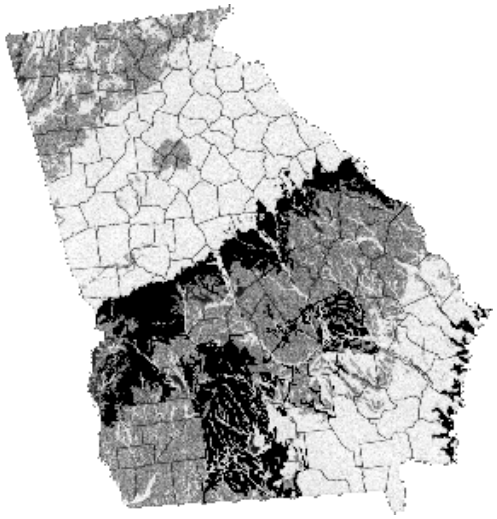
FIGURE TWO



Fusiform Rust Hazard - Slash Pine.
State of Georgia

FIGURE THREE

Annosus Root Rot - Hazard Rating by Soils
State of Georgia



Low Hazard

Moderate Hazard

High Hazard

Not Rated

USDA Forest Service
Forest Health
Ashville Field Office