

Southern Pine Beetle

Kills New Jersey Pine Trees

The **southern pine beetle** (SPB), one of the most destructive forest insects in the southeastern United States, quickly devastates pine dominated forests during outbreaks. This native bark beetle, which is smaller than a grain of rice, feeds on the living tissue under the tree's bark and introduces blue stain fungi. As pine dominant forests cover an estimated 440,000 acres in southern New Jersey, this beetle poses a considerable threat to our state's forest resource. Since its re-entry into the state in 2001, SPB impacted approximately 26,600 total acres, and more than half that total occurred in 2010 alone.

Since 2001, SPB populations in New Jersey have been on the rise, destroying 1000 new acres of pine forests each year on average, but infestations remained largely confined to the southern sections of the state. Then, in 2008, SPB crossed the Egg Harbor River for the first time and entered the pine forests of Atlantic County, and continues to move north and west.

In 2010, New Jersey experienced the warmest growing season on record (average temperature 68.3°F) and below-average precipitation. These conditions quickly advanced SPB's range and damage levels. SPB entered the heart of the New Jersey Pinelands – designated as the nation's first National Reserve by Congress in 1978, and a Biosphere Reserve in 1983 by the United Nations Educational, Scientific and Cultural Organization. According to USDA Forest Service estimates, 80% of the pine forest could be impacted by SPB within the next 10 years if no action is taken.

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Actual Size:
1/8" →



SPB Predators

Trees that have already dropped their needles and have no fine branches, probably no longer have SPB, but may be home to beneficial SPB predators, such as checkered beetles and woodpeckers. If a dead tree does not pose a threat to people or property, leave the tree to encourage these predators.



Checkered beetle preys on SPB

Wildfire risk

Forests devastated by SPB become fire-prone from many standing dead trees as well as accumulated leaf litter. Also, the decreased canopy cover causes the forest floor and vegetation to dry out quickly, increasing wildfire risk. With these fuel types, wildfires in SPB affected areas burn hotter and become more labor intensive for firefighters to control.



SPB Signs & Symptoms



Aerial of SPB-infested stand



Pitch tubes



S-shaped galleries & blue stain fungi

SPB attacks all pine species including pitch, shortleaf, loblolly, and Virginia, preferring trees weakened from drought, stress, or injury. The tree crown displays the first outward sign of infestation when it rapidly turns from a healthy green to yellow, red, and finally, brown. A closer inspection may reveal pitch tubes on the trunk and S-shaped galleries under the bark. The beetle also transmits blue stain fungi, which stops water from circulating in the tree.



Prevent SPB Outbreaks

You can reduce the risk of SPB outbreaks by actively managing your forest. Trees under stress become susceptible to SPB while healthy, strong trees resist beetle attacks. Thin forests so trees are spaced 20 feet apart or greater. This thinning not only promotes healthy growth and form of the trees, but the increased space also interrupts pheromone communication between the beetles. To protect a high-value individual tree for up to two years, an Approved Forester may recommend a spray or injection treatment. Treatments are only effective if applied prior to an SPB attack.

Control SPB

To control populations and minimize the spread, foresters must detect and suppress infestations while the beetles still actively infest the tree. If untreated, beetles move quickly to adjacent forests. The best control option is to cut infested trees and sell to a sawmill. This disrupts populations from expanding and destroys all life stages. If the infested trees cannot be sold, remove the bark, buck the logs or chip the wood to kill the beetles in the trees. Contact a NJ Certified Tree Expert or Approved Forester for professional assistance with SPB identification, tree removal, and chipping.

Suppression options

Before cutting trees, contact your local or county shade tree commission for an explanation of local and state ordinances and permit requirements. After suppression, keep all infested wood chips or logs away from uninfested pines to avoid spreading the beetle.

What to do with leftover wood chips and wood from SPB suppression:

- mulch under non-pine trees
- ask your local Department of Public Works about their tree recycling program
- use solid pieces of debarked wood as firewood
- compost wood chips, bark, and debarked wood

For woodland owners

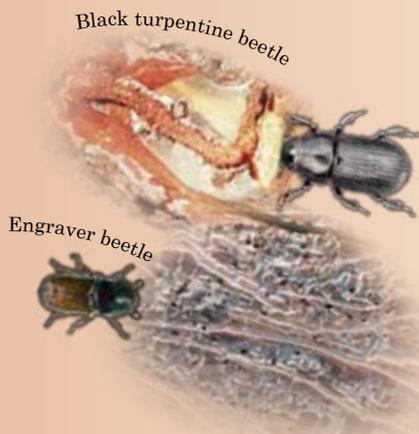
- Cut actively infested pines plus a 50-100 foot buffer of adjacent uninfested pines
- Fell trees toward infestation center
- Cut and chip infested trees on site

For homeowners

- Cut and chip infested trees on site
- Debark and cut infested trees into pieces and enclose completely under a tarp

Look-alike bark beetles

Unlike the S-shape of SPB galleries, the black turpentine beetle creates large straight galleries near the base of the tree where larvae feed in groups. Engraver beetle galleries are I, Y, or H shaped, running up and down the tree vertically. These beetles are not as destructive as SPB, and generally attack weakened trees already infested with SPB.



Financial Assistance

Woodland owners enrolled in the programs below may be eligible for cost-share opportunities to implement suppression and pre-suppression activities to reduce SPB outbreak severity and spread.

Farmland Assessment Program (FLA)

as it pertains to Woodland Assessment, requires woodland owners to develop and implement a state-approved forest management plan to qualify for reduced property taxation. Woodland owners must fulfill special requirements concerning property used exclusively and actively devoted for the production and sale of forest products, excluding Christmas and nursery trees. Eligible landowners must have at least five acres dedicated to active agriculture or woodland devotion.

Forest Stewardship Program (FSP)

is administered through the NJ State Forest Stewardship Coordinating Committee with representatives from federal, state, and private natural resource agencies and organizations. FSP offers technical and financial assistance to private woodland owners to develop a Forest Stewardship Plan to manage for wood products as well as wildlife, forest health, forest restoration, invasive species control, and water quality. Non-industrial private woodland owners who own 5 acres or more are eligible to participate. The land must have existing tree cover or other woody vegetation, or land suitable for growing such vegetation.

Environmental Quality Incentive Program (EQIP)

is administered by the Natural Resources Conservation Service (NRCS), for woodland owners who have a Forest Stewardship Plan. EQIP offers technical and financial assistance to implement conservation practices on eligible forest lands.

www.southernpinebeetle.nj.gov

Natural Resources Conservation Service Office
www.nj.nrcs.usda.gov/contact

NJ State Approved Foresters
www.state.nj.us/dep/parksandforests/forest/acf.pdf

NJ Certified Tree Experts
www.state.nj.us/dep/parksandforests/forest/community/cte.htm



RUTGERS

New Jersey Agricultural Experiment Station

State Forestry Services

Forest Health Office in Trenton	609-292-2531
Southern Region Office in Mays Landing	609-625-1124
Central Region Office in New Lisbon	609-726-1621
Northern Region Office in Andover	973-786-5035