

Forest Pest Bulletin



SOUTH DAKOTA
DEPARTMENT OF AGRICULTURE
DIVISION OF RESOURCE CONSERVATION
& FORESTRY



BULLETIN NUMBER 51

Revised: March 2018

Twolined Chestnut Borer

SCIENTIFIC NAME

Agrilus bilineatus

HOSTS

Oaks (*Quercus* spp.), most frequently Bur oak (*Quercus macrocarpa*) in South Dakota. The Twolined chestnut borer got its name because it used to attack the American chestnut until Chestnut blight decimated the American chestnut population.

SYMPTOMS

The Twolined chestnut borer causes disfigurement or death to Oaks through successive attacks on branches and stems. The first symptom of an infestation is prematurely wilting leaves on upper branches. These leaves can remain attached to branches for weeks or months. Positive identification of the twolined chestnut borer is the D-shaped emergence holes along the lower trunk of the tree. The holes are 1/5-inch-wide and may not appear until the tree is near death or dead.

LIFE CYCLE

Twolined chestnut borer adults are slender black beetles, 1/5 to 1/2-inch-long, with two faint, yellowish lines down their backs and are active from April to August (Fig. 2). The adults emerge through D-shaped holes cut through the bark during the spring and summer and feed on foliage before moving to branches and trunks to mate. They deposit clusters of eggs in bark crevices and larvae hatch within 1 to 2 weeks. The larvae are legless, white, slender grubs with 2 spines at the tip of the abdomen (Fig. 3) and are about 1 inch long when fully grown. Larvae burrow through the bark to



Fig 1. Dead top from current infestation Photo credit: Steven Katovich, USDA Forest Service, www.forestryimages.org



Fig 2. Adult twolined chestnut borer. Photo credit: USDA Forest Service - Northeastern Area Archives, USDA Forest Service, www.forestryimages.org

feed on the cambium layer between the wood and bark throughout the remainder of the summer. This feeding produces zigzag galleries under the bark, which, if numerous, can girdle and eventually kill the tree (Fig. 4). Larvae burrow into the outer bark and construct individual chambers to over-winter. The pupa stage occurs in the spring and new adults emerge to renew the cycle. The Twolined chestnut borer produces only one generation per year but may have a two-year life cycle in declining trees at the northern edge of the beetle's range.



Fig 3. Larvae of twolined chestnut borer. Photo credit: Robert A. Haack, USDA Forest Service, www.forestryimages.org

MANAGEMENT

First year attack: Heavily infested branches showing wilted leaves can be pruned in late summer. Cut below the last wilted leaves on each branch and dispose of by burning, chipping, or burying.

Heavily Infested trees presenting more than 30% canopy dieback should be cut in mid-July and disposed of through burning, chipping, or burying before adults emerge. If infested trees cannot be disposed of before adults emerge, logs can be stacked and covered with a heavy tarp sealed at the base with soil. The tarp should remain in place until July so that all the adults die.

Prevention: Thin dense stands of Oaks to improve the health of the remaining trees. Service foresters with the Division of Resource Conservation & Forestry can be contacted for technical advice on thinning.

Due to numerous pesticide labels and/or label changes, be sure the product label includes the intended use prior to purchase or use. Please read and follow all pesticide label instructions and wear the protective equipment required. Spraying pesticides overhead increases the risk of exposure to the applicator and increases the likelihood of drift to non-target areas. Consider the use of a commercial applicator when spraying large trees due to the added risk of exposure and equipment needs. The mention of a specific product name does not constitute endorsement of that product by the South Dakota Department of Agriculture.

For further information contact your nearest South Dakota Division of Forestry Office. Hot Springs 605-745-5820; Lead 605-584-2300; Mitchell 605-995-8189; Pierre 605-773-3623; Rapid City 605-394-2395; Sioux Falls 605-362-2830; Watertown 605-882-5367.

South Dakota Human Relations Act of 1972, S.D.C.L. 20-13 prohibits discrimination on the basis of race, color, creed, religion, sex, national origin, ancestry, or disability.



Fig 4. Galleries formed by larvae. Photo credit: Minnesota Department of Natural Resources Archives, Minnesota Department of Natural Resources, www.forestryimages.org