

## **WEST VIRGINIA - 2015**

### **Forest Health Highlights**

#### **The Resource**

The West Virginia landscape is dominated by more than 11.8 million acres of forest. Due in large part to its varied topography, the forest is a rich diversity of oaks, hickories, spruce, pines, and the WV State Tree—sugar maple. Ninety percent of all forests in West Virginia are privately owned, but there are 8 state forests, 34 state parks, and 87 wildlife management areas that provide public enjoyment.

### **FOREST STEWARDSHIP**

The Forest Management Program is administered by the West Virginia Division of Forestry (WV-DOF). The intent of the program is to help private, nonindustrial forest landowners improve their forests by managing them in a sound, scientific manner. Within this program, the Forest Stewardship Program offers a forest management plan written by a professional forester based on the landowner's objectives. Other programs, EQIP and CREP, provide financial assistance for recreation, forest improvement, soil and water protection, wetlands protection, fisheries habitat enhancement, wildlife habitat enhancement, tree planting, and improvement of forest roads. In FY 2015, 74 stewardship plans were completed for a total of 9,367 acres. Currently 174,823 acres are managed under stewardship plans.

#### **Special Issues**

##### **Gypsy Moth Program**

The objectives of the West Virginia Department of Agriculture (WVDA) Gypsy Moth Program are to continue to minimize the adverse impact on forest resources, preserve aesthetic values, protect people from the annoyance and health problems that can occur when in contact with large numbers of gypsy moth caterpillars, and slow the spread of gypsy moth by reducing populations on the advancing front.

The gypsy moth increased in abundance in 2015 in the eastern area of the state. The gypsy moth defoliated a total of 99,878 acres in Grant, Hardy, Pendleton, Pocahontas and Summer Counties. The fungus *Entomophaga maimaiga* caused a moderate collapse in some of these areas. WVDA has quarantined 44 counties to prevent the movement of gypsy moth out of these counties. Staff visited 84 sites to investigate the movement of articles capable of transporting the gypsy moth into uninfested areas. Areas visited included Christmas tree sales lots, plant nurseries, mobile home dealers, campgrounds, firewood producers, interstate weigh stations, log yards and sawmills. WVDA did not add additional counties to the quarantine in 2015.

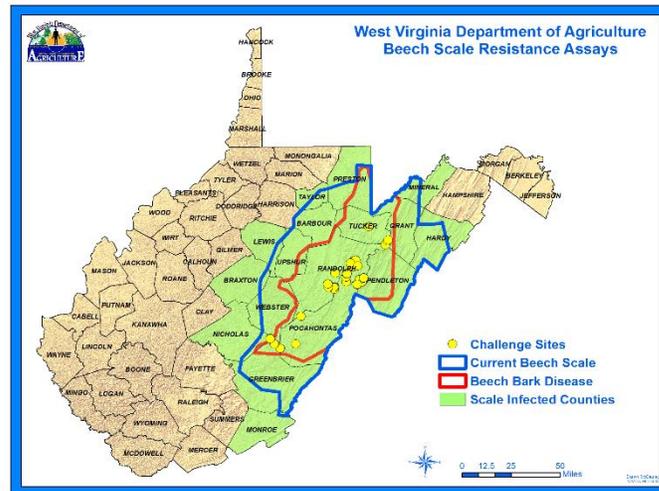
Larval Insecticide treatments were conducted on 6,691 acres in the Cooperative State County Landowner (CSCL) Program. Mimic and *Bacillus thuriangiensis* (*Btk*) were used to treat the blocks in Grant, Hardy, Mineral, Pendleton and Pocahontas Counties. A significant increase in qualifying acres has been determined for 2016 treatments.

WVDA continued trapping within the gypsy moth slow the spread (STS) area for 2015. Populations have stagnated and are low in the western portion of the STS program area. WVDA deployed a total of 3,777 traps across the STS area.

## FOREST HEALTH PROTECTION PROGRAMS

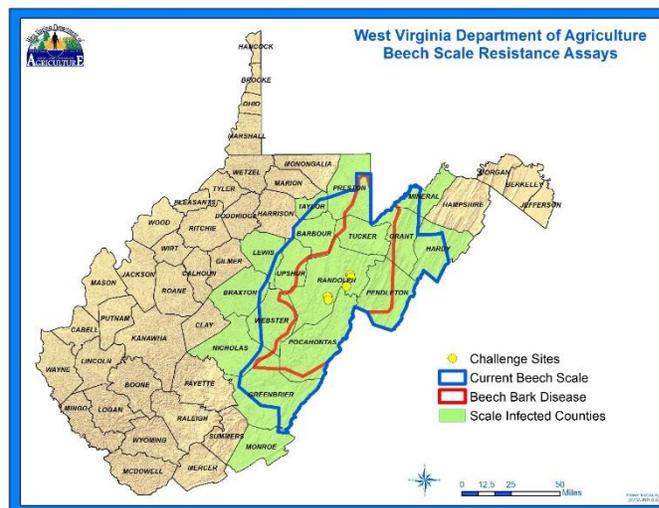
### Diseases

**Beech Scale Resistant Assays on the Monongahela National Forest**—In the summer of 2012 Monongahela National Forest (MNF) personnel located putatively resistant American beech trees across the Forest in areas where either the scale and disease are currently causing decline and mortality (killing zone) or have passed through (aftermath zone). In order to focus the search for resistant trees, stand data maps were created showing the stands with the highest beech basal areas. As many of these stands with a high beech component as possible were surveyed. Beech trees that were greater than nine inches dbh and had no beech scale present were considered fully resistant and permanently located using GPS coordinates and flagging. Approximately 120 resistant beech trees have been identified thus far on the MNF. A shapefile and maps were created to help locate the trees in the future.



In 2015, WVDA staff collected challenge pads from the 2014 challenges. Unfortunately, due to a clear cut and bear damage, only a fraction of the pads were able to be collected. The cold winter and very wet weather in 2014 and 2015 impeded scale colonization on the control trees so we couldn't verify if those putative resistant beech that we challenged were indeed field resistant to the scale insect and will be redone in 2016.

For the 2015 field scale challenges, WVDA staff conducted 43 scale challenges of the putatively resistant trees and challenged 14 susceptible control trees (see map below). Barbed-wire was added around the pads in an attempt to protect them from bear damage.



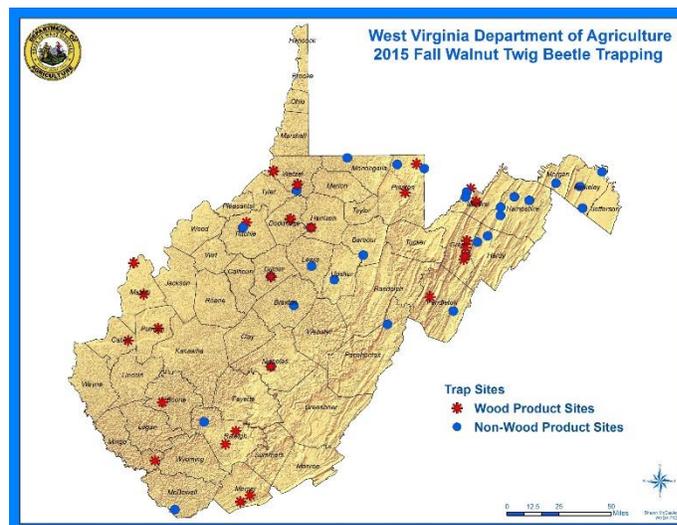
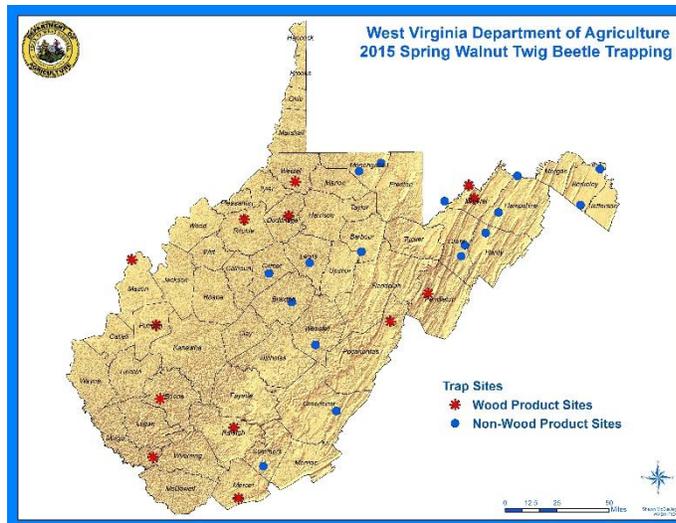
Resistant beech scion, that was previously challenged with scale, were collected in February of 2015 on the Monongahela National Forest (outside of Parsons, WV and on the Dolly Sods National Recreation Area) and were taken to Oconto River Seed Orchard (ORSO) in White Lake, WI for grafting.

In May, a resistant beech orchard was established at the US Forest Service's Timber and Watershed Laboratory in Parsons, WV. Originally, 45 West Virginia beech grafts were held at ORSO but due to grafting incompatibility and extreme winter temperatures, only 18 surviving WV grafts remained. Dr. Jennifer Koch (USFS Northern Research Station) retained 2 grafts of each genotype for installation in an archival plot at the research lab located in Delaware, OH. Only 10 WV grafts were available for planting consisting of 4 genotypes. The long term goal is to establish between 200-300 trees, representing 25 and 30 genotypes at the Parsons orchard site.

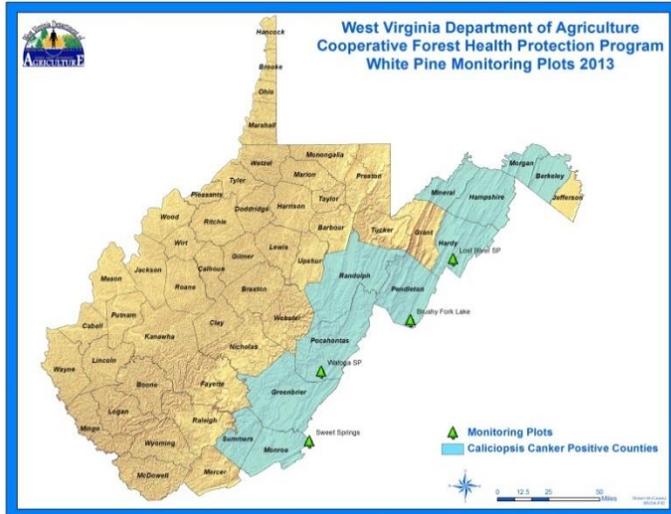


Also, approximately 5,000 beech nuts were collected around mid to late September and sent to ORSO to establish West Virginia root stock for grafting purposes.

**Walnut Twig Beetle Trapping**—Spring and fall trapping for the walnut twig beetle, the vector of thousand cankers disease, was completed and samples screened. Thirty traps were deployed and monitored for 3 weeks in the spring (top map) and 59 traps were set and monitored for 4 weeks in the fall (bottom map). All trapping sites and were focused around wood product industries, campgrounds and parks. Traps were serviced every week to two weeks depending on the amount of rain that fell during the trapping period. Samples were processed and screened by the WVDA Forest Pathologist and the WVDA Cooperative Forest Health Protection Specialist. All samples screened to date are negative for the walnut twig beetle.



**White Pine Monitoring** —The fourth year of monitoring white pine in four monitoring plots established across the state was continued. There was very little change in the overall data but monitoring will continue for several more years before concluding anything about the *Matsucoccus* scale/*Caliciopsis* canker (insect/disease) complex. The objective of this project is to monitor changes in live versus dead volume in white pine due to the presence of *Matsucoccus* scale/*Caliciopsis* canker and other secondary pathogens. The Brushy Fork site showed signs of continual decline with increased flagging of needles. Little to no fruiting bodies was present, possibly due to the lack of smaller white pines that are more readily observable. The Watoga State Park plots showed signs of gradual decline, but no increased flagging on the larger trees. Storm damage seems to have increased throughout each plot and the surrounding forest. The Lost River State Park plots exhibited little change of over-all symptoms. The majority of white pines in the plots showed very little to the overall decline, however some decline was observed on single trees. The Sweet Springs site showed no signs of improvement or decline. Some storm damage is present, but has had no impact on the plots. White pine adelgid was also present at the Brushy Fork and Sweet Springs sites.



**National Plant Protection Laboratory Accreditation Program** — Personnel from the WVDA, Plant Industries Division, Plant Pathology Laboratory participated again in the National Plant Protection Laboratory Accreditation Program (NPPLAP) at the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology (USDA-APHIS-PPQ-CPHST). The WVDA Plant Pathology Laboratory personnel were accredited in 2014 to perform validated diagnostic tests for *Phytophthora ramorum* (causal agent of sudden oak death).

**Insects**

**Hemlock Woolly Adelgid (HWA)** —HWA can now be found in 48 WV counties. WVDA continued to treat high-value and high-visibility infested hemlocks with imidacloprid via soil injection with CoreTect tablets and trunk injections. In 2015, 1544 hemlocks were treated on state lands and 724 trees were treated on private lands at six different sites in our Hemlock Woolly Adelgid Cooperative Program.

