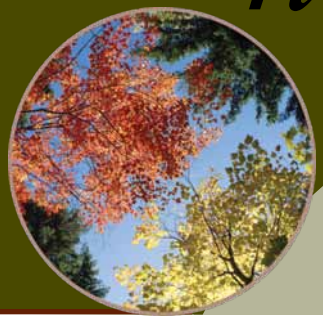
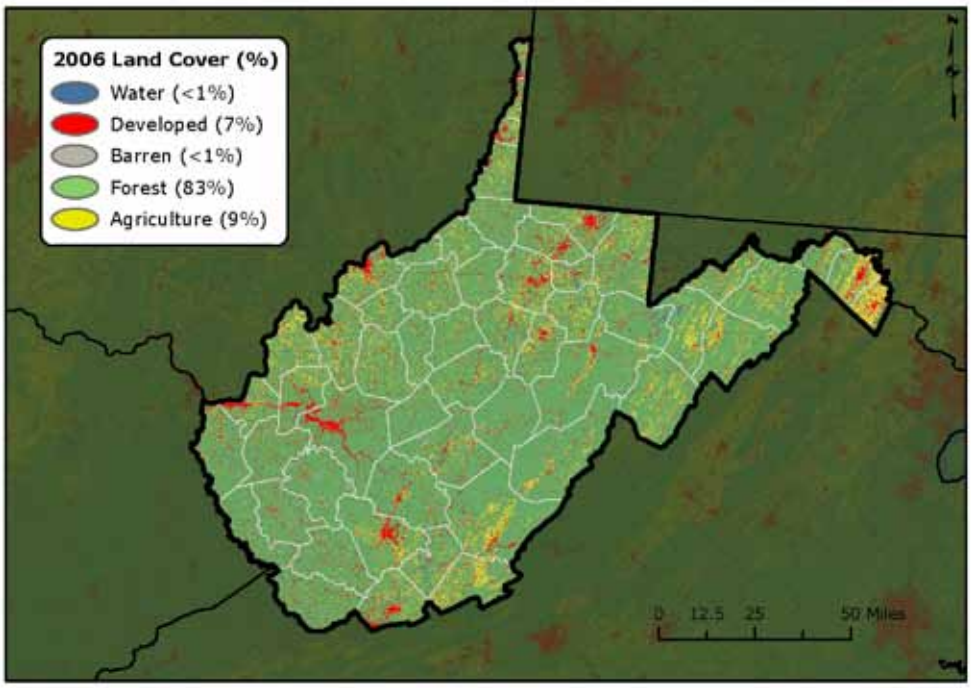
2012 Forest Health highlights

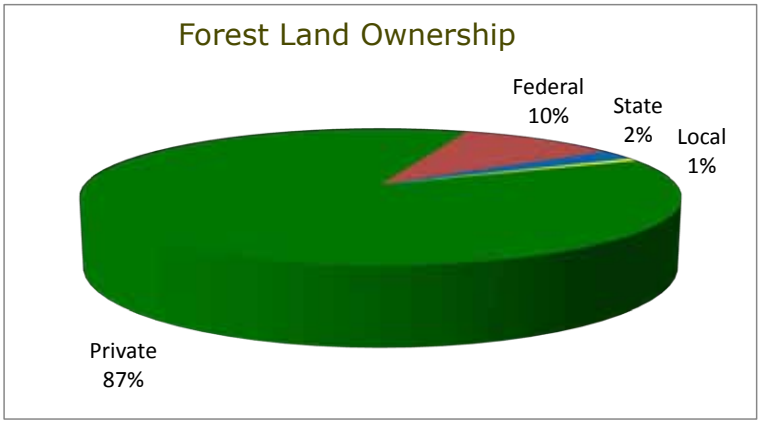
WEST VIRGINIA



The Resource

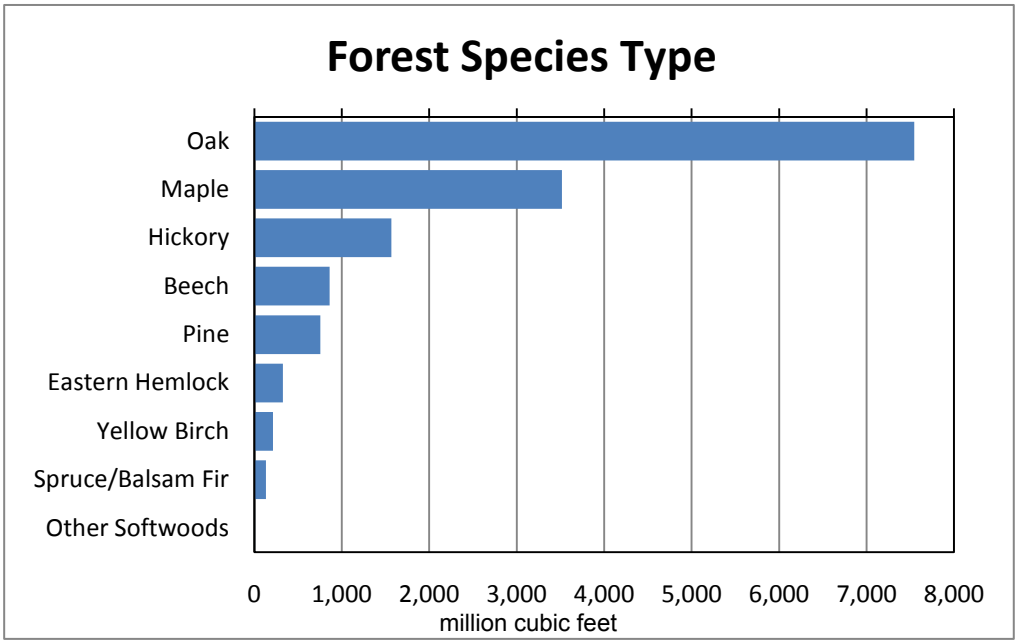
The West Virginia landscape is dominated by more than 11.8 million acres of forest. Due in large part to its varied topography, the forest is a rich diversity of oaks, hickories, spruce, pines, and the West Virginia State Tree—sugar maple. Ninety percent of all forests in West Virginia are privately owned, but there are 9 State forests, 36 State parks, and 56 wildlife management areas that provide public enjoyment.





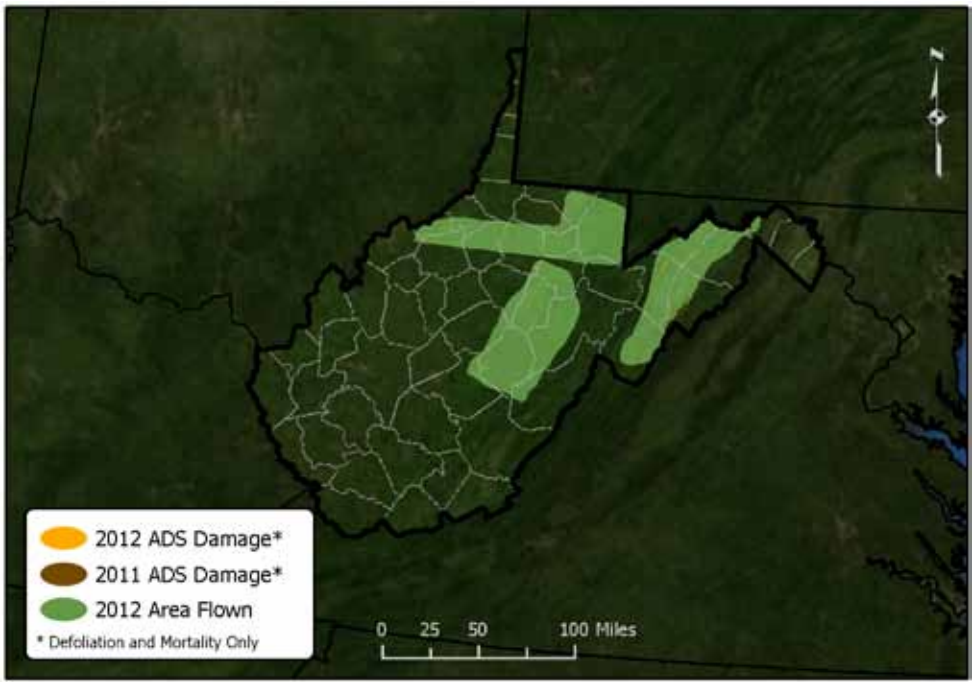
Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Aerial Surveys

Of the West Virginia counties that were flown in the 2012 aerial detection survey, a total of 2,854 acres were recorded as damaged. Anthracnose damaged 1,953 acres, hemlock woolly adelgid damaged 273 acres, and locust leafminer accounted for 201 acres of damage. Gypsy moth damage covered 191 acres and cicadas damaged 126 acres.



This map delineates aerial detection survey (ADS) results for West Virginia in 2012 and 2011.

Forest Stewardship

The Forest Management Program is administered by the West Virginia Division of Forestry. 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—Environmental Quality Incentives Program, Conservation Reserve Enhancement Program, and Wildlife Habitat Incentive Program—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 FY2012, 113 stewardship plans were completed for a total of 18,012 acres. Currently 211,842 acres are managed under stewardship plans in West Virginia.

Gypsy Moth Program

The objectives of the West Virginia Department of Agriculture (WVDA) Gypsy Moth Program are to continue to minimize the adverse impact of gypsy moth (*Lymantria dispar* L.) 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.

Gypsy Moth Quarantine

West Virginia currently has 44 counties that are regulated and considered generally infested with gypsy moth. The WVDA regulates the movement of articles out of these counties into nonquarantined counties or States. Five new counties were quarantined in 2012: Mercer, McDowell, Summers, Raleigh, and Wyoming.

Gypsy Moth Population

West Virginia's gypsy moth population in 2012 has remained low due to a collapse primarily caused by the fungus *Entomophaga maimaiga* in 2009 and continued cool, wet springs in 2010 and 2011. Potential defoliating populations for 2013 may occur in the eastern portion of the State as populations begin to increase.

Gypsy Moth Cooperative State County Landowner Program

When this was being written in the fall of 2012, WVDA staff members were responding to landowner requests and completing surveys on forested lands in West Virginia to determine areas at risk for gypsy moth defoliation and/or mortality in the spring of 2013. Staff members used 1/40-acre plot surveys to determine areas at risk and planned to have surveys completed by late December 2012. At the time of this writing, staff members had completed over half of the 300,000 plus acres requested to be surveyed and had found five areas that may present problems in 2013.

No larval insecticide treatments were made in the Cooperative State County Landowner Program in 2012. As of this writing, approximately 5,500 acres are expected to qualify for treatment in 2013.

Gypsy Moth Regulatory Activities

There were no regulatory insecticide treatments in West Virginia in 2012.

Staff members visited 229 sites to investigate the movement of articles capable of transporting the gypsy moth into uninfested areas. Staff members also conducted five inspections at vehicle weigh stations along interstate highways to enforce State and Federal gypsy moth quarantines.

Gypsy Moth Slow the Spread (STS) Program

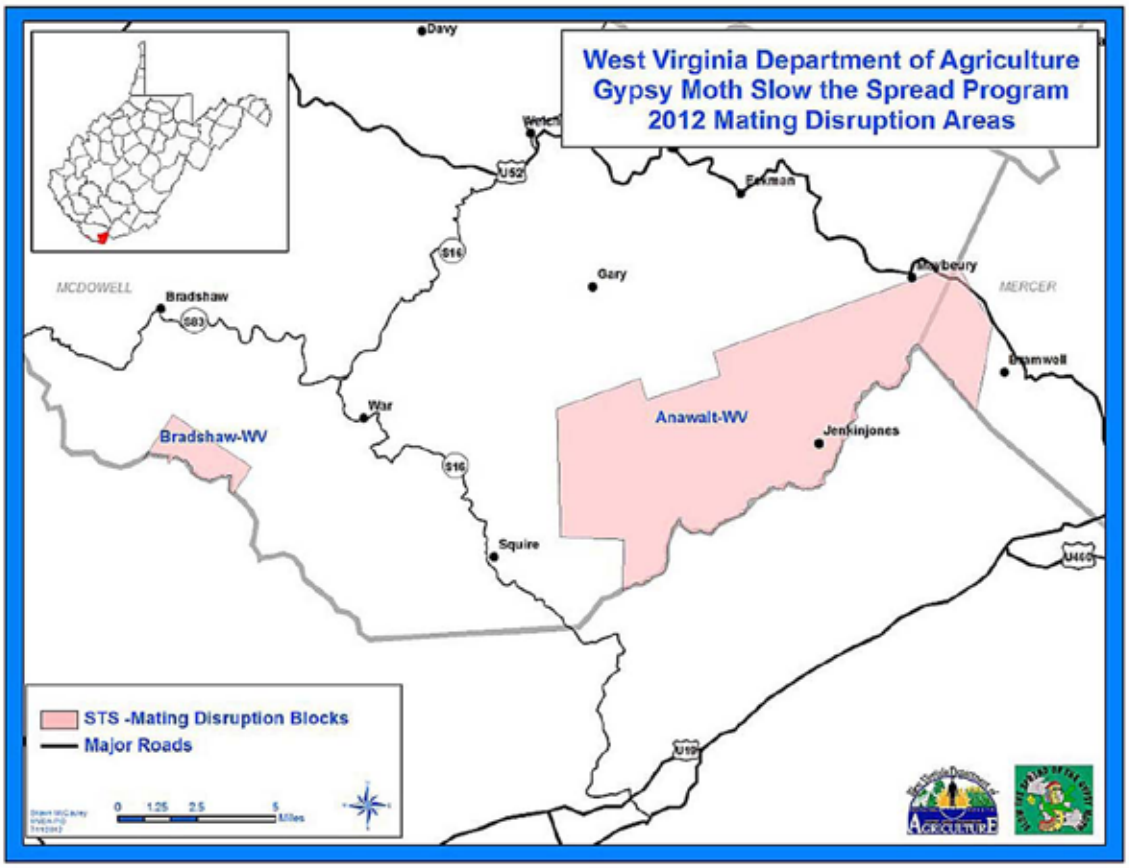
Mating disruption treatments were completed on 38,550 acres in Mercer and McDowell Counties of West Virginia. The WVDA and U.S. Forest Service have no planned treatments for 2013. Gypsy moth populations are stagnated and are lower in the western portion of the STS program area of West Virginia. The WVDA trapped 46,459 male gypsy moths in 2012 compared to 49,655 male moths in 2011.

2012 Sow the Spread Traps by Trapping Grid

Grid	Proposed	Omits	Set
500m	104	4	100
1k	42	0	42
3k	2,673	0	2,673
8k	193	0	193
Totals	**3,012**	**4**	**3,008**

Project Boundary	Proposed	Omits	Set
STS Action Area	1,921	4	1,917
STS Monitoring	1,091	0	1,091
Random	0	0	0
Totals	**3,012**	**4**	**3,008**

Trap type	Proposed	Omits	Set
Delta Traps	1,796	0	1,796
Milk Cartons	1,216	4	1,212
Random	0	0	0
Totals	**3,012**	**4**	**3,008**



West Virginia Department of Agriculture Gypsy Moth Slow the Spread Program 2012 Mating Disruption Areas.

Forest Health Protection Programs

Diseases

Phytophthora ramorum *Laboratory Provisional Approval Program*

Personnel from the WVDA, Plant Industries Division, Plant Pathology Laboratory participated again in the United States Department of Agriculture-Animal and Plant Health Inspection Service-Plant Protection Quarantine (USDA-APHIS-PPQ) *Phytophthora ramorum* Laboratory Provisional Approval Program. Lab personnel were administered the proficiency panel in January and February and were notified in early April that they had passed the proficiency panel. The lab and its personnel are provisionally approved for 2012 to perform validated diagnostic tests for *P. ramorum* on behalf of the USDA-APHIS-CPHST-PPQ Programs.

Beech Mortality

Personnel conducted a leading edge survey for beech mortality resulting from beech bark disease (*Neonectria coccinea* var. *faginata*) in Braxton, Grant, Greenbrier, Hampshire, Hardy, Mineral, Monroe, Nicholas, Pendleton, and Summers Counties. Grant, Hampshire, Hardy, and Mineral Counties were emphasized due to poor data representation in prior years. As a result, the beech mortality acreage is up 1,211,677 acres from 2010, the last time the mortality survey had been conducted. Beech mortality now encompasses 2,917,497 acres in the State; beech scale currently occupies 4,425,091 acres in the State.

Beech Scale Challenges

Personnel conducted a 1-year evaluation of the 2011 beech scale challenges. The trees were evaluated in the field and in the laboratory to determine if the scale hatched, fed, reproduced, and established a colony on beech. Each challenge site contained several candidate beech trees where the scale did not hatch, feed, reproduce, or establish a colony. The next step will involve collecting scion from a selection of these trees and sending them to Jennifer Koch of the U.S. Forest Service Northern Research Station in Delaware, OH, for grafting to beech root stock. Personnel will conduct further testing of beech scale resistance.

Scale population established on a susceptible control tree.

Bacterial Leaf Scorch (BLS)

In 2012, bacterial leaf scorch (*Xylella fastidiosa*) continued to be detected in Grant, Hampshire, and Hardy Counties. BLS was detected in Mineral and Pendleton Counties for the first time. Currently, nine hosts are found associated with BLS in West Virginia. bacterial leaf scorch (*Xylella fastidiosa*) is now found in 18 counties. WVDA Plant Pathology Lab personnel processed samples using ELISA.

Caliciopsis Canker of White Pine

Personnel conducted a survey of Caliciopsis canker (*Caliciopsis pinea*) on white pine in Braxton, Greenbrier, Hampshire, Hardy, Mineral, Monroe, Pendleton, Pocahontas, Randolph, Tucker, and Summers Counties. In 2011, *C. pinea* was detected in Greenbrier, Hampshire, Hardy, Mineral, Monroe, Pendleton, Pocahontas, and Randolph Counties; in 2012, it was detected in Summers County.

Aside from the ground survey, personnel established four 1/10-acre white pine monitoring plots at four locations in West Virginia for long-term monitoring. The objective is to see how the volume of white pine is changing over time due to the presence of Caliciopsis canker. This work is in collaboration with the Virginia Division of Forestry, University of Georgia, and the U.S. Forest Service (Athens, GA).

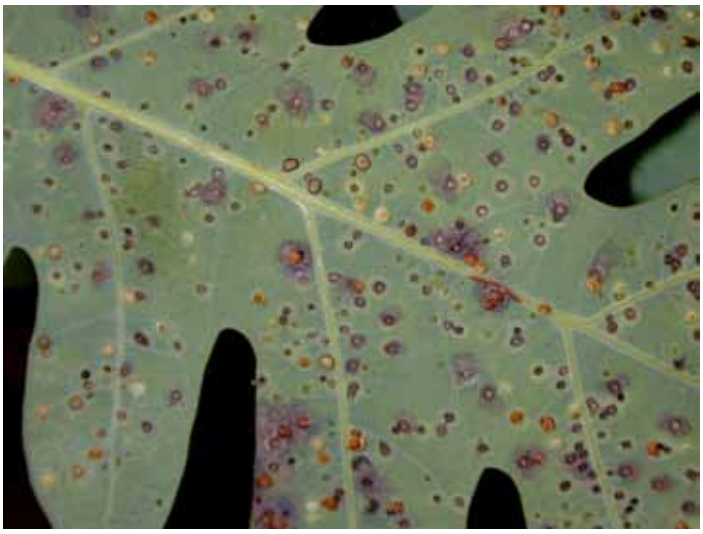
Formation of Caliciopsis canker.

Thousand Cankers Disease (TCD) Survey

The ground survey for thousand cankers disease (*Geosmithia morbida*) continued in 2012. Sites in counties that were surveyed in 2011 were surveyed again in 2012 to monitor any change (development of any symptoms consistent with TCD) in black walnut. These counties included Barbour, Berkeley, Braxton, Brooke, Calhoun, Doddridge, Gilmer, Grant, Greenbrier, Hampshire, Hancock, Hardy, Harrison, Jackson, Jefferson, Lewis, Mason, Marion, Marshall, Mineral, Monongalia, Morgan, Ohio, Pendleton, Pleasants, Pocahontas, Preston, Putnam, Randolph, Ritchie, Roane, Taylor, Tucker, Upshur, Wayne, Wetzel, and Wood Counties. Counties that were not surveyed in 2011 were surveyed in 2012; these included Boone, Cabell, Clay, Fayette, Lincoln, Monroe, Raleigh, and Wirt Counties. The survey emphasized urban areas, campgrounds, day-use areas, industrial parks, riparian areas, and urban/rural roadways, among others. Surveyed counties were prioritized based on black walnut tree counts from the U.S. Forest Service Forest Inventory and Analysis data for the Mid-Atlantic States. Personnel also conducted a limited trapping effort for the walnut twig beetle (the vector of thousand cankers disease) to determine if the beetle is present in the State in Braxton, Greenbrier, Kanawha, Roane, and Wayne Counties. The WVDA screened the samples.

White Oak Decline/Jumping Oak Gall Wasp

White oak decline was extensive in the summer of 2012 and is believed to be attributed to heavy populations of jumping oak gall (JOG) wasp (*Neuroterus saltatorius*). White oak decline and JOG were found in conjunction with one another and were widespread throughout Cabell, Calhoun, Fayette, Gilmer, Jackson, Kanawha, Lincoln, Mason, Pleasants, Putnam, Ritchie, Roane, Tyler, Wayne, Wetzel, Wirt, and Wood Counties.



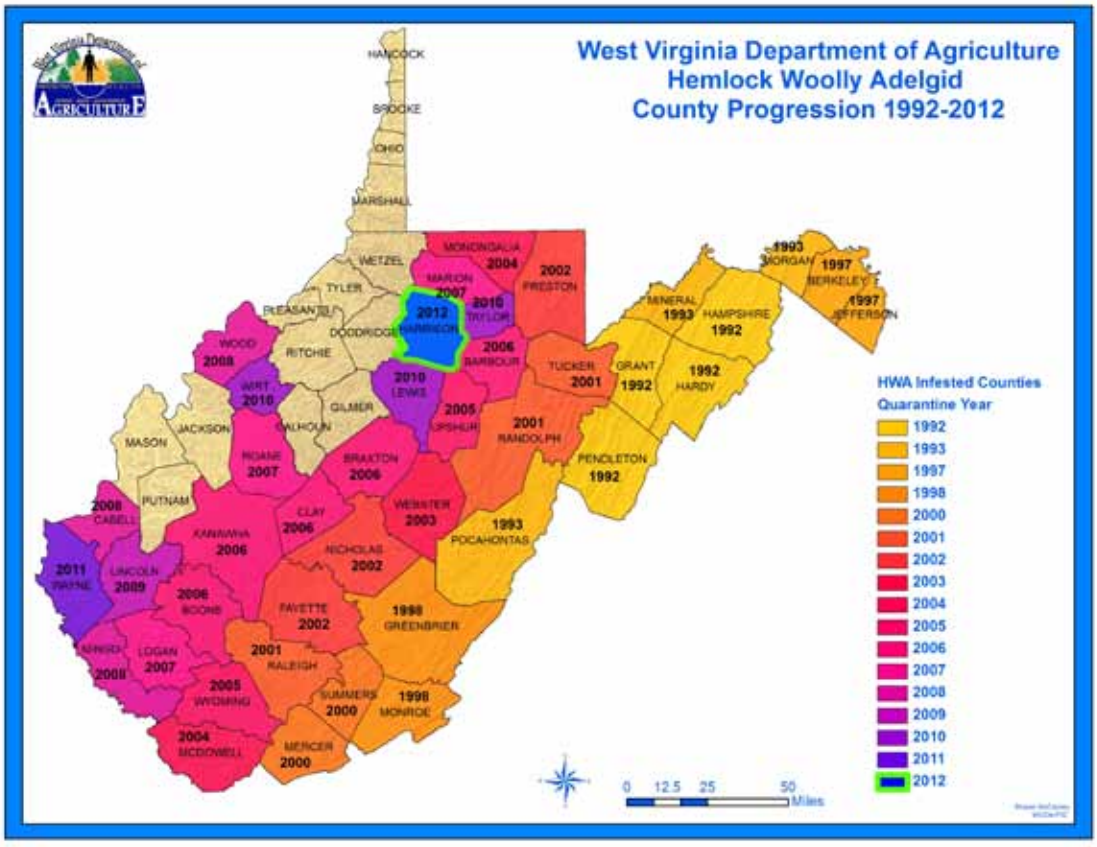
Jumping oak gall on a white oak leaf.

Oak decline associated with jumping oak gall.

Insects

Hemlock Woolly Adelgid (HWA)

With new detections in Harrison and Tyler Counties, hemlock woolly adelgid (*Adelges tsugae* Annand) can now be found in 42 West Virginia counties. In 2012, personnel released 4,100 adult *Laricobius nigrinus* beetles in the New River Gorge area (Kates Plateau and Huse Cemetery). An additional 400 cold-tolerant beetles from Idaho were released in Blackwater Falls State Park. Previous release sites of *L. nigrinus* have yet to be monitored for predator survival and impact on HWA.



Hemlock woolly adelgid county progression in West Virginia, 1992-2012.

The WVDA continued to treat high-value and high-visibility infested hemlocks with imidacloprid via soil injection, insertion of CoreTect tablets into the soil, and trunk injection. Approximately 4,006 trees were treated at 23 sites: 14 public, non-Federal; 5 Federal; and 3 private.

Preparing to do an HWA chemical stem injection treatment.

Tuliptree Scale

A severe outbreak of tuliptree scale (*Toumeyella liriodendri*) occurred in parts of Upshur, Lewis, Jackson, Braxton, Barbour, Gilmer, Calhoun, Ritchie, Raleigh, Fayette, Webster, and Kanawha Counties. These insects increase to large numbers from time to time and cause significant defoliation. Limited mortality was also seen in 2011.

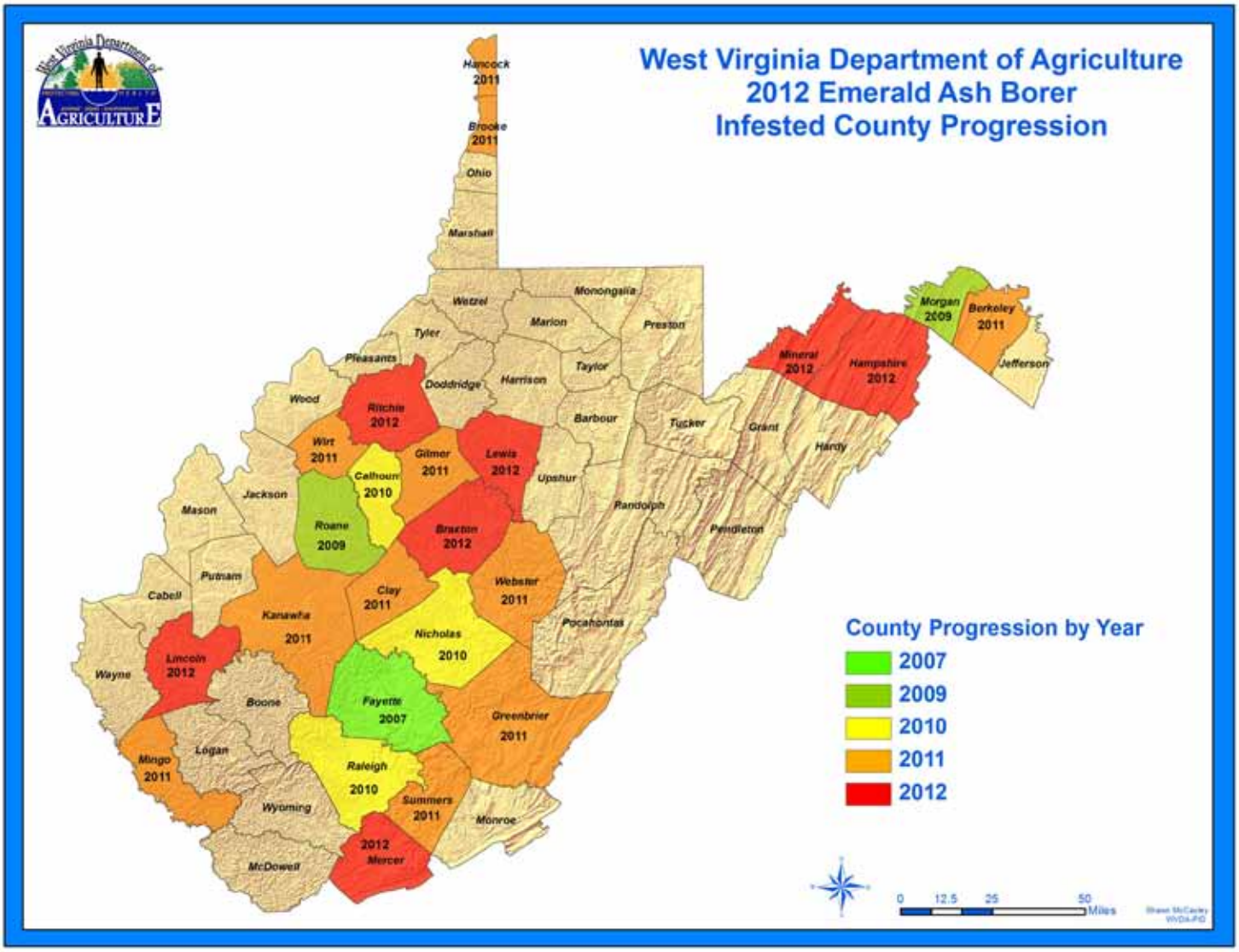
Tuliptree scale.

Emerald Ash Borer

With new detections of the emerald ash borer (*Agrilus planipennis* Fairmaire) in Mineral, Hampshire, Ritchie, Lewis, Braxton, and Mercer Counties, this pest can now be found in 23 West Virginia counties. In 2012, APHIS released additional parasitoids (*Spathius agrili* and *Tetrastichus planipennisi*). Results of previous releases are still pending.

Forest Fire

Wildfire suppression is one of the most important activities of the West Virginia Division of Forestry (WV DOF). In FY2012, WV DOF personnel and volunteers fought 600 wildfires that burned 9,971 acres. These fires caused $2.99 million in damage to the natural resources of West Virginia and over $254,775 in personal property loss. The number of fires and acreage burned was significantly lower than average, due in large part to a very wet spring and fall. The leading causes of wildfires and corresponding percentage of acres burned were arson (50 percent) and debris burning (17 percent).



West Virginia 2012 emerald ash borer infested county progression map.

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Forest Health Protection
U.S. Forest Service
Northeastern Area
State and Private Forestry
180 Canfield Street
Morgantown, WV 26505
304–285–1545
http://www.na.fs.fed.us

West Virginia Department of Agriculture
Plant Industries Division
1900 Kanawha Boulevard, East
Charleston, WV 25305
304–558–2212
http://www.wvagriculture.org/programs/programs.html

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