



Virginia

Forest Health Highlights

2014

The Resource

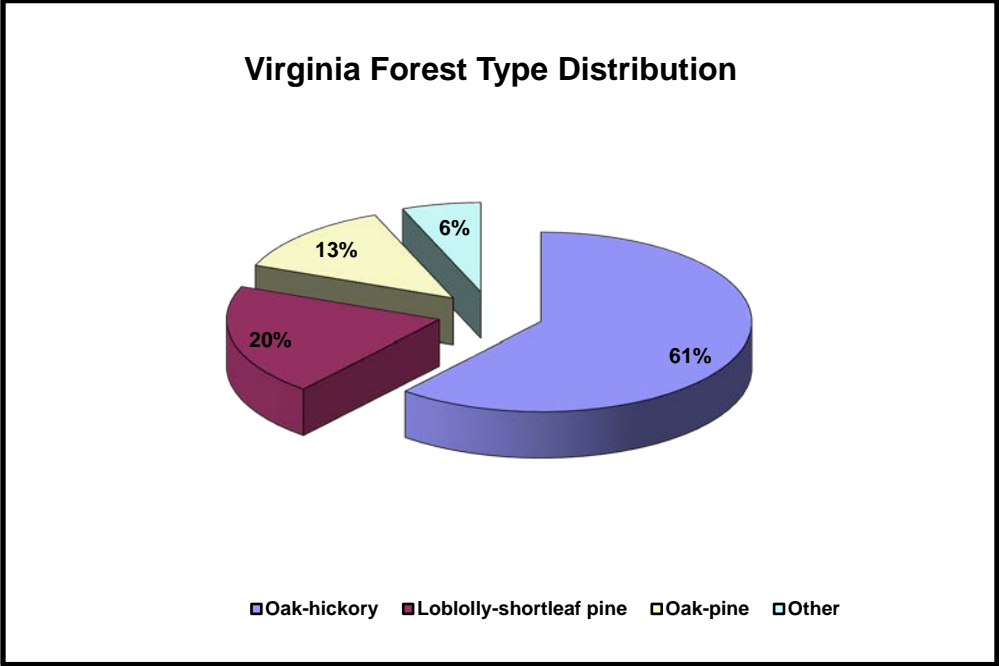
Virginia's forests cover 15.8 million acres, more than 62% of the state's land area. The majority of the state's forested land, some 10 million acres, is in non-industrial private ownership, while approximately 1.6 million acres are in national forests. Virginia's forests are prized for their scenic beauty, supporting tourism and outdoor recreation and providing wildlife habitat from the

Appalachian Mountains to the lowlands of the Atlantic Coastal Plain. Major forest types in the state include oak-hickory, loblolly-shortleaf pine, and mixed oak-pine. Other minor types account for 6% of this acreage. The most abundant tree species by volume is tulip poplar, followed by loblolly pine, chestnut oak, white oak and red maple.

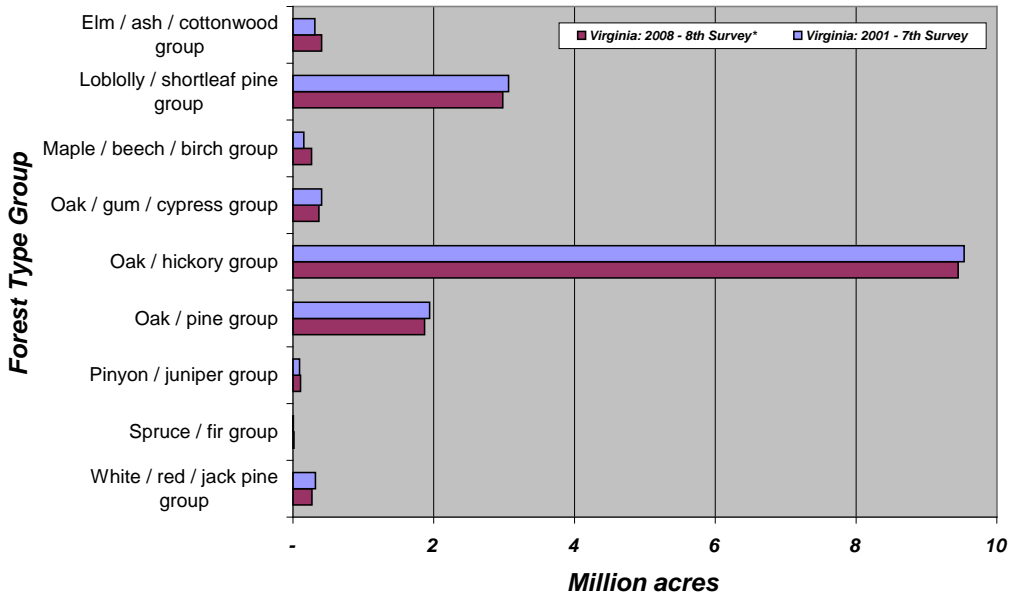
The most abundant trees species by number of trees is red maple, followed by

loblolly pine, tulip poplar, sweetgum, and blackgum. Nearly 85% of Virginia's forests are natural, while 15% are planted. A number of tree species have undergone a significant decline from historical abundance, including table mountain pine, pitch pine, shortleaf pine, eastern hemlock, Atlantic white cedar, and longleaf pine. Restoration efforts are underway for many of these species.

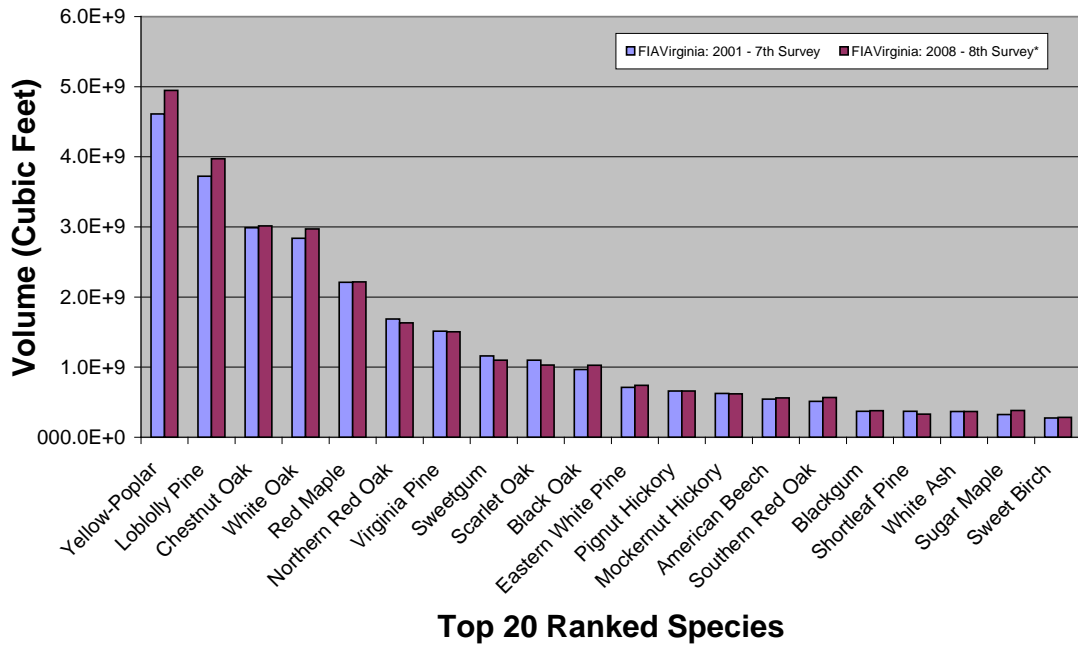


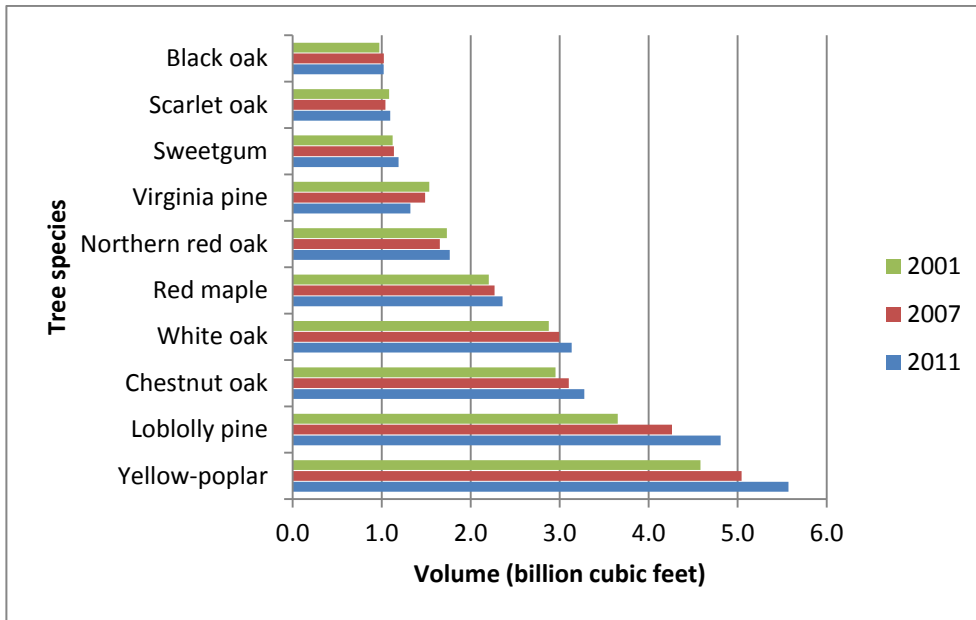


Acres by Major Forest Types

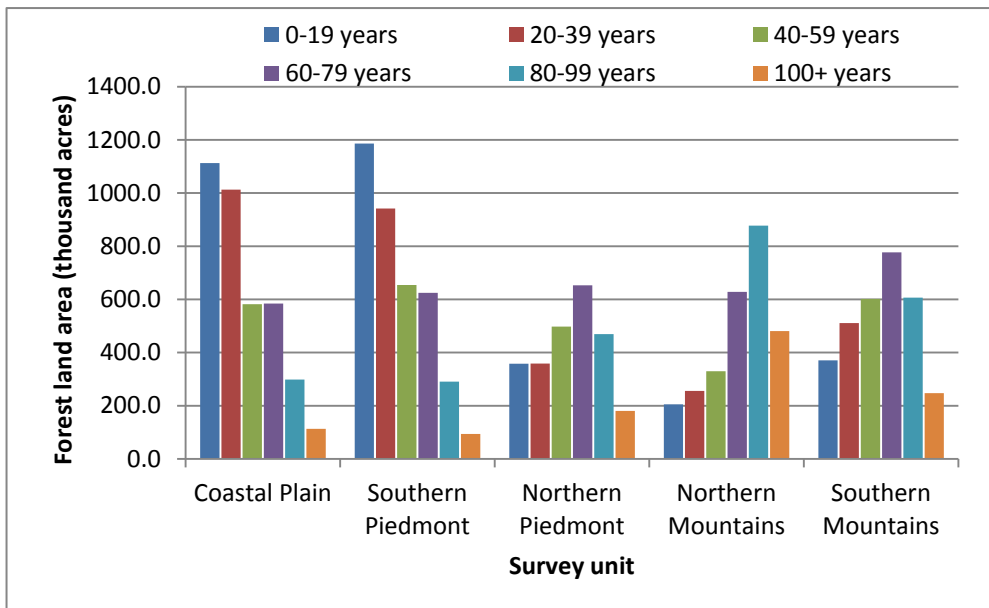


Volume of all live on forestland by species (cu/ft)





Live volume on forest land for the top10 species (by volume) by year, Virginia.



Area of forest land by survey unit and stand age class, Virginia 2011.

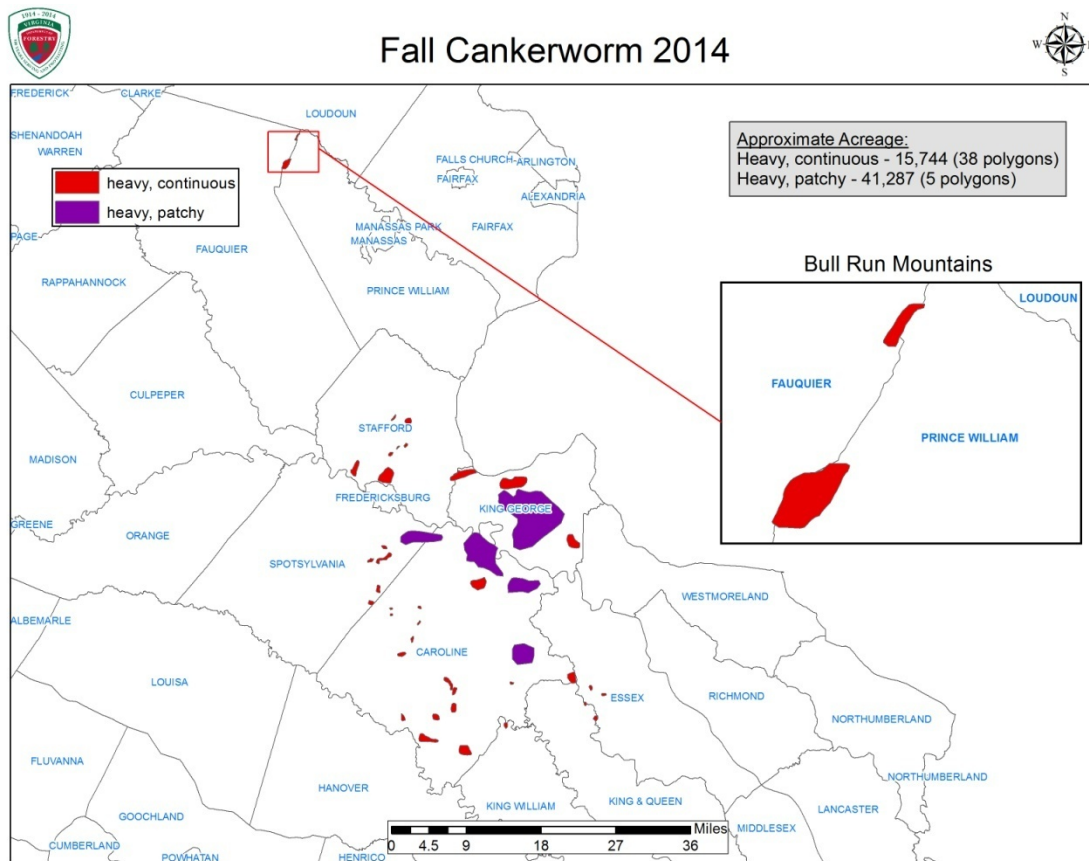
Forest Influences and Programs

The third year of an extensive **fall cankerworm** outbreak once again spanned a large area covering several counties in eastern Virginia. The worst-hit areas included King George, Caroline, Stafford, and Spotsylvania counties while areas in and around the City of Richmond saw a sharp decline in overall defoliation.

The Bull Run Mountains, spanning Prince William and Fauquier Counties, also saw a second year of defoliation that increased in intensity from 2013. In total, 8 counties and a total area spanning almost **57,000 acres** were variably impacted with light to heavy defoliation. Approximately **16,000 acres** were classified as having heavy, continuous defoliation and an additional **41,000 acres** were classified as heavy but patchy. Most of the severely defoliated trees were oaks, while maple and beech also saw some moderate to heavy defoliation. Due to a relatively cool, wet spring and summer, most trees re-foliated very quickly and are expected to live through the event.



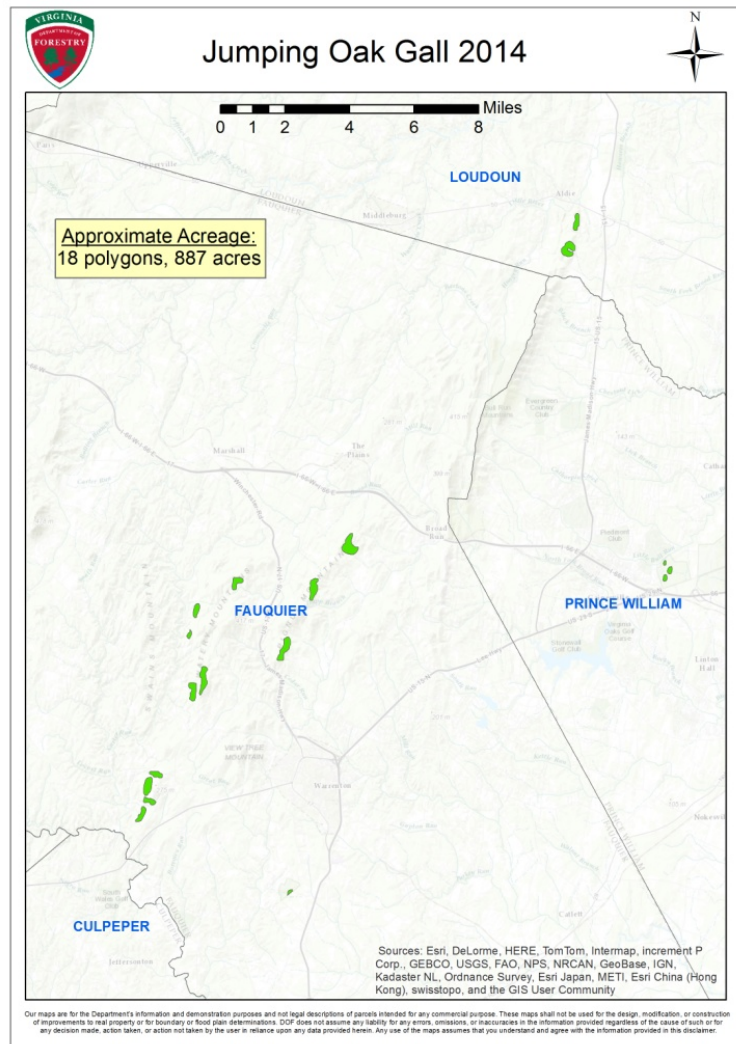
An outbreak of this duration and magnitude is unprecedented as far as Virginia records go, particularly for this part of the state. Typically, cankerworm outbreaks occur in the mountains at higher elevations.



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An unusual outbreak of the **jumping oak gall wasp** materialized this summer on white oak. This outbreak **spanned several counties in northern Virginia** and the resultant damage to leaves was intense enough in places to map 18 polygons totaling **887 acres of light to heavy defoliation**. A majority of this defoliation was in Fauquier county, northern Virginia.

These galls are quite small – about the size of a sesame seed – and are located on the underside of white oak leaves. They are orange in color and dislodge easily from the leaves when brushed lightly. Each gall leaves a ‘pock-mark’ of dead cells at the point of attachment to the leaf. These dead spots on the leaves can sometimes be so abundant that they begin to run together, eventually enveloping and killing an entire leaf. Many trees have lost 50 percent or more of their foliage, and some trees have lost almost 100 percent.



Outbreaks of this particular gall wasp are not very common but they have occurred before in this area. Typically, gall outbreaks are short-term in nature, and gall wasp populations soon crash on their own after a year or two due to natural predation by other insect species.

Ground and aerial surveys located 18 small **gypsy moth** infestations totaling **36 acres across 6 counties** in the Piedmont and near the I-95 corridor between Richmond and Fredericksburg. Some of these locations were also hard hit by fall cankerworm over the last few years. The next dry spring may lead to increasing defoliation in many locales. However, this makes the 5th consecutive year of virtually no detectable defoliation due to gypsy moth in the mountains or on Federal (USFS, SNP) Lands. For the fifth year in a row a cool, wet May augmented *Entomophaga maimaiga* populations, which may be preventing a resurgence of gypsy moth.

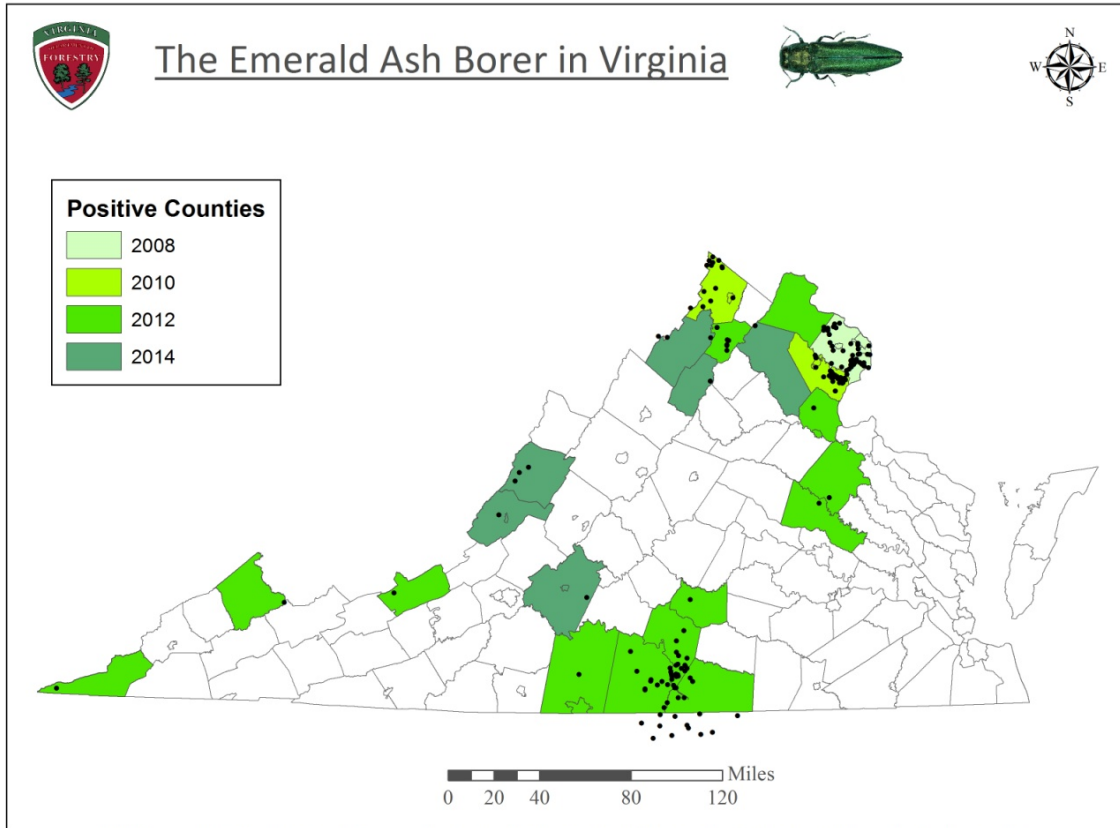
The **southern pine beetle** has been relatively quiet during the last 12 years. Numbers remain extremely low in most places based on the spring trapping survey results and relatively few reports, and there has been a decrease in activity since last year. In total, **6 spots amounting to 56 acres of dead loblolly pine across 5 counties were detected.**

In general, the southern pine resource in central and southeast Virginia remains healthy and productive. Federal funds from the USDA Forest Service, Forest Health Protection support our (Southern Pine Beetle Prevention) cost-share program with landowners and loggers for thinning of pine stands. To date, Virginia has thinned about 45,000 acres of loblolly pine (mostly pre-commercial) out of approximately 130,000 acres estimated to be overstocked in the 2-12 year age class.

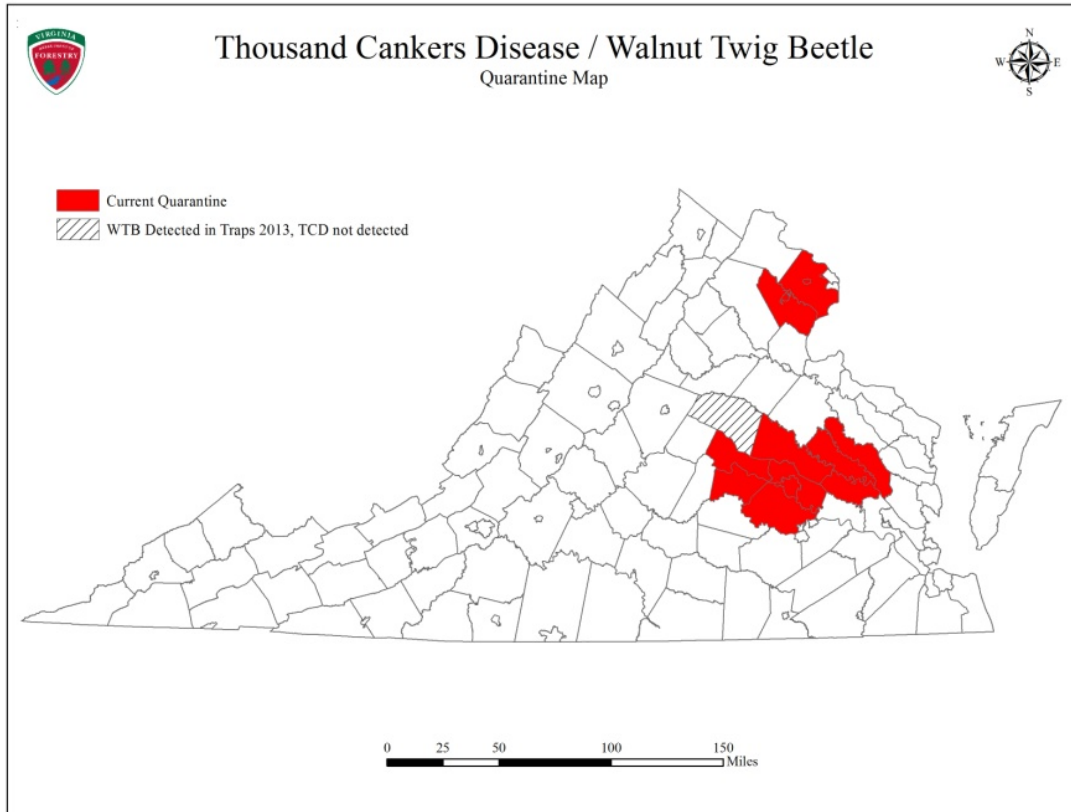


Overstocked pine stands are more vulnerable to bark beetle outbreaks, and thinning is the best method of reducing this threat. The only area of major southern pine beetle activity across the Commonwealth during the last few years is on the island of Chincoteague on the Eastern Shore. This location has many mature loblolly pines growing on difficult soils, exposed to salt spray and saltwater intrusion, and in environments such as campgrounds and developed areas that receive a lot of vehicle traffic, soil disturbance, and compaction. There are also sites where loblolly is grown in traditional plantation culture and as part of natural forested areas such as on nearby Chincoteague National Wildlife Refuge. The infestation has been festering and growing for at least 4 years.

The emerald ash borer (EAB) was first found to be established in Fairfax County, Virginia in 2008 and has since been found in **23 counties, including 6 new counties in 2014.** 2012 was a breakout year for EAB in VA, with 13 additional counties added for a total of 17. Most of these new finds were from APHIS trapping survey, but several new infestations were also discovered separately killing thousands of trees, especially in Southside Virginia. In 2013, no new counties were added to the list, but new infestations were discovered in and around the extensive area of infestation in Southside Virginia along with 4 new counties in adjacent North Carolina. In addition, Shenandoah National Park reported their first positive EAB on their northern end based on their own trapping effort. This year, many new areas of infestation were discovered and reported. With the cessation of widespread trapping efforts (except for federal lands), most new EAB discoveries are via infested trees that are declining or dying. In most cases, these infestations are 3-5 years old.

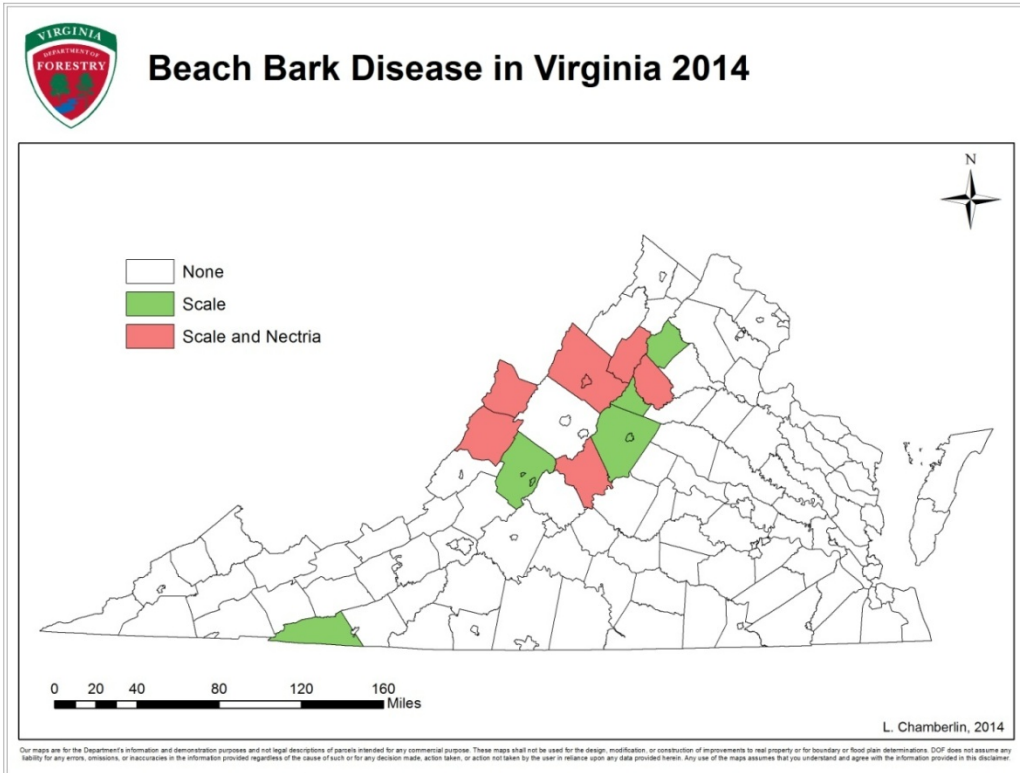


A more recent threat to Virginia's forests is thousand cankers disease (TCD) of black walnut. Beginning in June 2011, positive identification of the fungus and the associated walnut twig beetle occurred for five counties and two municipalities: these include the counties of Henrico, Chesterfield, Hanover, Goochland, and Powhatan and the cities of Richmond and Colonial Heights. With the deployment, by VDACS, of walnut twig beetle pheromone traps across the Commonwealth, new TCD infestations were discovered in northern Prince William and Fairfax Counties in northern Virginia in 2012. This now makes two major metropolitan areas in Virginia where WTB/TCD appear to be pretty widespread. Surveys by VDACS continued in 2013 and resulted in the counties of New Kent, King William and King and Queen added to the quarantine. WTBs were caught in the far southeast corner of Louisa County (A piedmont county adjacent to the currently quarantined Goochland County) last summer, but no disease or cankers were found in this county as of yet. Louisa County could be quarantined in the near future if continued monitoring reveals TCD there. **No new WTB or TCD counties were added to the quarantine map in 2014.**



Significant hemlock decline continues in many areas due to the **hemlock woolly adelgid**, although trees in some areas that have supported infestations for many years are still hanging on. The adelgid continues to spread and has more-or-less permeated the entire range of hemlock within Virginia, minus a few pockets here and there. Hemlock mortality levels average about 27% in the southwest portion of the Commonwealth from Bath and Rockbridge counties southwest to Lee County. This is a 5% increase from last year's mortality level estimate.

The known distribution of the **beech scale / beech bark disease complex** in Virginia has been expanded with assistance from Bill Jones, USFS Pathologist from the FHP office in Asheville, NC. Bill confirmed the scale and/or BBD in **5 additional counties**, bringing the total number of counties in Virginia to 11. It appears that most of Virginia's beech forests consist of genotypes that are resistant to beech scale and beech bark disease. Susceptible beech genotypes that are more similar to those found in the northeastern U.S. are generally only found at elevations above 2,000 feet or more, where beech is generally less abundant and typically only found in small pockets. This may explain why, after decades since the spread of beech scale/BBD into North Carolina, we only observe severe decline and mortality of beech in small pockets (< 1 acre) scattered throughout the Blue Ridge and Appalachians, but not in the Piedmont and Coastal Plain, where beech is ubiquitous.



Wavy leaf basketgrass (WLBG), a relatively recent emerging weed problem, has been confirmed in several areas of northern Virginia and is widespread in central Maryland, but nowhere else in the U.S. to date. It's a shade-loving grass that often grows with Japanese stiltgrass, which it eventually dominates. It thickly carpets the forest floor and outcompetes and inhibits native flora. Sticky seed-heads promote spread by animal and human movement of seeds stuck to shoes, clothing and fur and can be transported potentially long distances. While most of the major non-native invasive plants in Virginia have had hundreds of years to establish and become very widespread, WLBG is still in the relatively early phase of invasion. Currently, only 29 distinct populations have been identified among 10 counties, totaling approximately 277 acres. These populations range in size from 1 square foot to 80 acres.



Therefore, with sufficient funding and effort, Virginia has a real chance to eradicate this species if it acts quickly. Previous control efforts at several sites have been ongoing for years but have stalled out due to lack of funding. New USDA Forest Service, Forest Health Protection funding will help revitalize efforts to control this species and survey Virginia for additional infested sites, which no doubt exist.

