

2025 Indiana Forest Health Highlights

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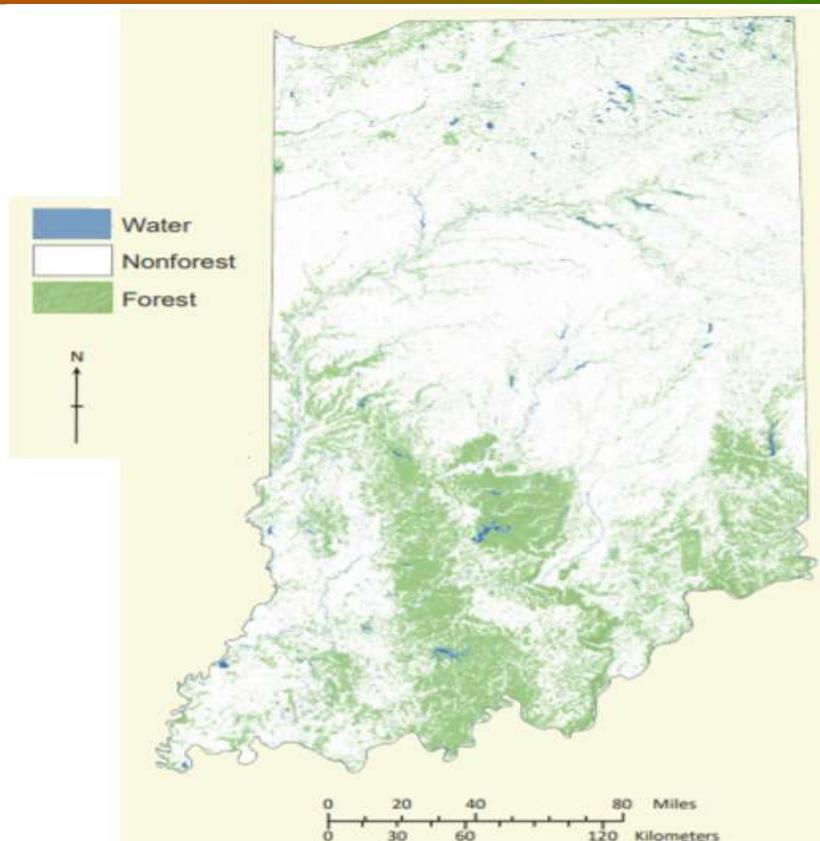
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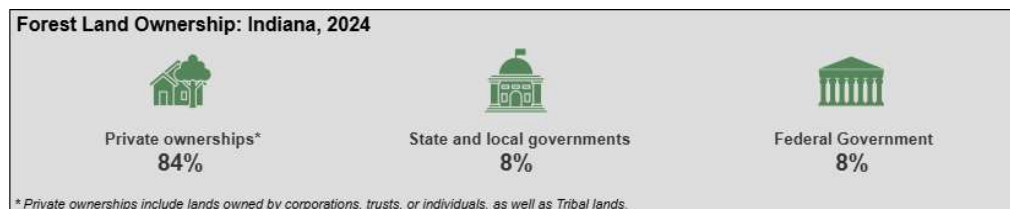
1. Indiana Forests & Industry

Forest Trends

At the turn of the 19th century, Indiana’s forests were being rapidly cut, cleared, and burned with little thought to providing a heritage for the future. By 1900 Indiana forests only comprised approximately 1.5 million acres. The forestry profession in general arose to protect, plant, and nurture our forests...to ensure a continuity of growth for future generations. Now, largely due to the management guidance and example of the forestry profession, Indiana is home to approximately 4,857,751 million acres of forestland ([Forests of Indiana, 2024 FIA Annual Snapshot](#)) and covers 21% of the state. The 4,691,022 timberland acres is internationally renowned for producing high quality hardwood timber from its substantial and sustainable forest base, as well as providing recreation, wildlife habitat, environmental services, and quality-of-life benefits. Most forests are in the southern half of the state. Map 1 shows the current distribution of forest and non-forested.



Map 1: Distribution of forest in Indiana.



* Private ownerships include lands owned by corporations, trusts, or individuals, as well as Tribal lands.

Figure 1: Forest landownership

Figure 1 depicts how this forestland is distributed among ownership classes. Private landowners own 84 percent of the forestland, with federal and state/local governments comprising equal amounts of the remainder. Interestingly, in 1978 there were only about 50,000 private forest landowners. Today, there are an estimated 85,000 private forest landowners, the vast majority of which own less than 50 forested acres. Each private landowner owns forests for a unique reason. This makes it difficult to explain and predict how landowners will manage their forest resources. As owners age and pass their land on to the next generation, many times these forested parcels are divided into smaller parcels, thus increasing the number of owners while reducing parcel size and additionally adding complexity to managing these forestlands.

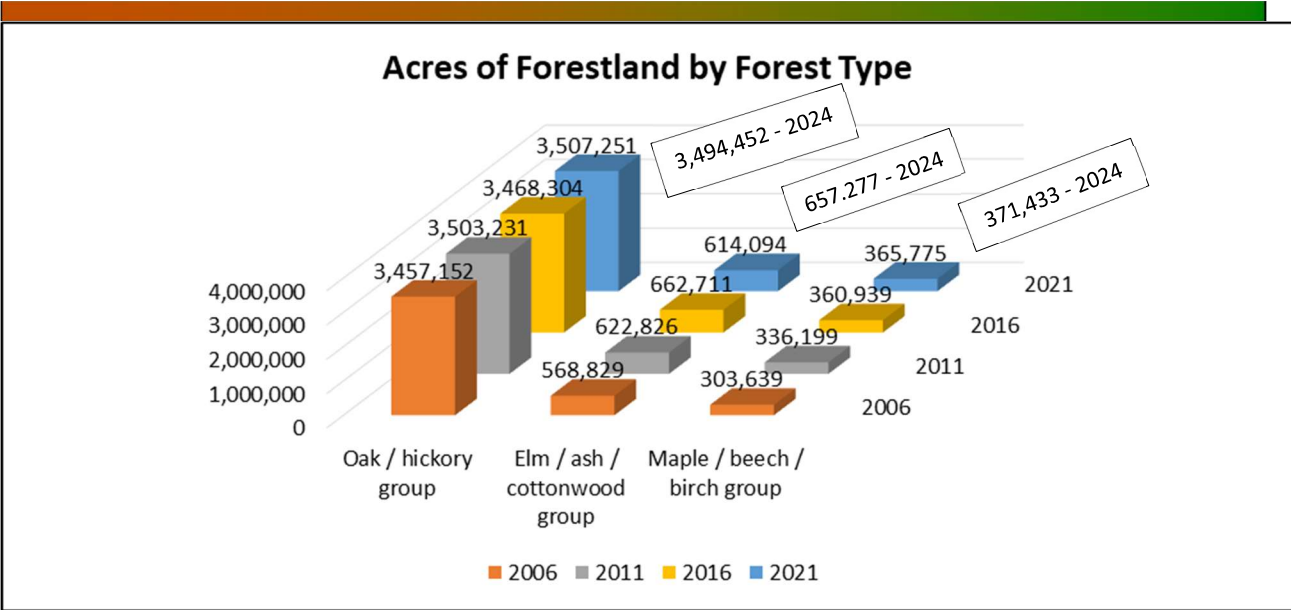


Figure 2: Acres of forestland by forest type

Indiana forests are dominated by the oak-hickory forest type (Figure 2) and are maturing and continue to shift to larger-sized individual trees and older-aged stands as shown in Figure 3.

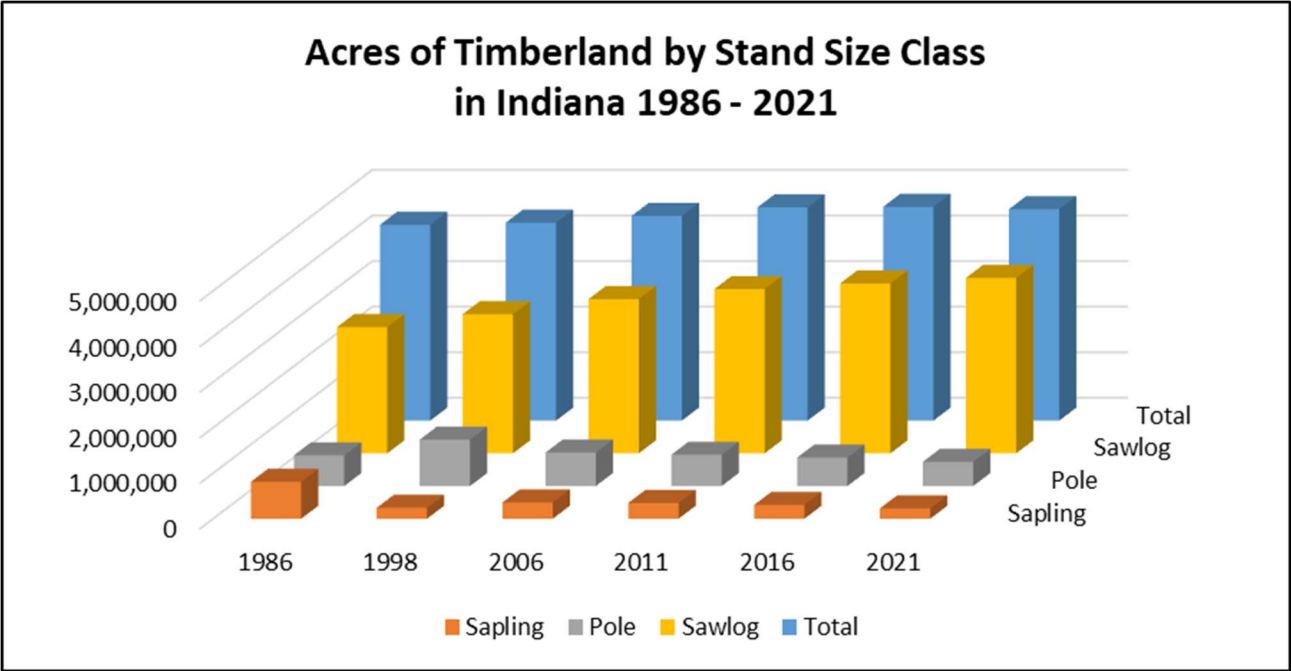


Figure 3: Acres of timberland by stand size class from, 1986 to 2021

As trees and stands mature, ecological processes change. Growth rates diminish. Stands become more susceptible to insect and disease infestation. Carbon sequestration slows. Managing these stands can keep them growing optimally.

Forest Land Carbon Storage: Indiana, 2024

Total carbon: 467,834,568 metric tons ($\pm 1.60\%$ SE)

Total carbon by carbon pool (due to rounding, numbers may not total to 100%)



Figure 4: Forest land carbon storage for Indiana 2024.

Many stands are at a key turning point in time. Without manipulative intervention through forest management practices or major natural disturbances, these forests are primed to turn from our traditional oak-hickory forest types into the shade-tolerant beech-maple species mix. Forests are maturing, and through the process of forest succession, shifting to different forest types in many places throughout Indiana and the entire Central Hardwood region (Abrams 2003, Aldrich et al. 2005, Schmidt et al. 2000, Woodall et al. 2005). As maturing oaks and hickories die, they often are replaced by other competing species, such as sugar maple and yellow poplar, rather than young oaks or hickories. Driving these shifts are significant reductions or even failures in oak/hickory regeneration (Aldrich et al. 2005, Gormanson et al. 2016, IN DNR 2008, Lorimer 1993, Woodall et al. 2005).

Figures 5 and 6 depict changes in recent years in the number of oak and maple trees in the pole size class (5–11-inch diameter range). Notice the difference in scale of the Y-axis, but also how the oaks are diminishing over time while the maples are increasing in numbers. This shows that the shade tolerant maples are poised to dominate the overstory in future years. If the perpetuation of the oak/hickory forest type is a primary goal for the forests of Indiana, natural resource managers will need new management strategies and practices to change the current trends, which could take decades to alter. (Source: DNR Division of Forestry 2024-2028 Strategic Direction.)

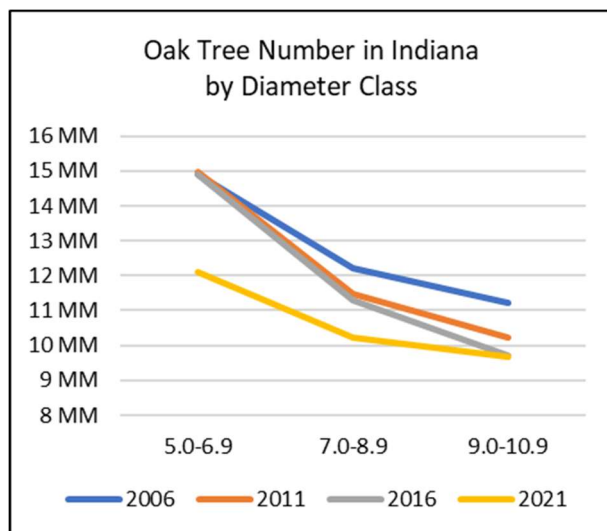


Figure 5: Change in oak numbers in pole classes.

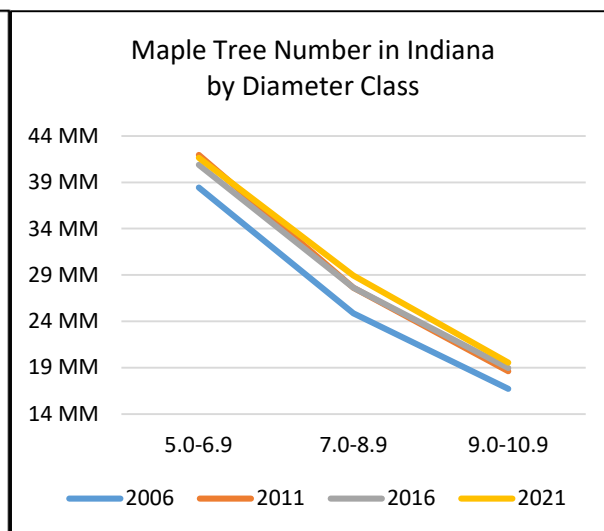


Figure 6: Change in maple number in pole classes.

Figures 7 and 8 show the number of live trees larger than 1.0-inch diameter and wood volume of trees larger than 5-inch diameter on forestland in 2024. Sugar maple is first in number and second in wood volume. Yellow poplar, Indiana state tree, has the most wood volume on forest

land with white oak third. Combining sugar maple and American beech number of trees indicates a shift of forest type to maple beech type.

Total number of live trees (≥ 1.0 in. diameter) on forest land:	
2,042,893,999 trees ($\pm 2.72\%$ SE)	
Top species by count	% of total
sugar maple (<i>Acer saccharum</i>)	16.5%
American beech (<i>Fagus grandifolia</i>)	7.4%
sassafras (<i>Sassafras albidum</i>)	5.3%

Figure 7: Number of live trees & top species by count.

Forest Composition: Indiana, 2024	
Sound total-stem bark and wood volume of live trees (≥ 5.0 in. diameter) on forest land:	
18,651,879,017 cubic feet ($\pm 2.17\%$ SE)	
Top species by volume	% of total
yellow-poplar (<i>Liriodendron tulipifera</i>)	12.3%
sugar maple (<i>Acer saccharum</i>)	11.0%
white oak (<i>Quercus alba</i>)	7.6%

Figure 8: Wood volume in live trees & top species by volume

1.1 Forest Product Industry

Indiana's hardwood industry has an annual economic impact of over \$10 billion and supports 70,000 jobs -- 44,000 in primary and secondary manufacturing and 26,000 in ancillary sectors. 4.1 of Indiana's 4.9 million forest acres are privately owned and statewide timber growth exceeds removals for harvest and natural tree mortality by 2.3 times.

High-quality hardwood forests and a business-friendly environment has made Indiana ranked:

- 1st nationally in the production of wood office furniture and hardwood veneer
- 2nd in wood kitchen cabinets and countertops, manufactured homes
- 3rd in engineered wood products
- 4th in prefabricated wood buildings
- 5th in upholstered household furniture

The Indiana forest products industry is the sixth-largest manufacturing industry in the state. Indiana ranks ninth nationally in total lumber production and third in hardwood lumber production. Indiana's hardwood industry has an annual economic impact of over \$10 billion and supports 70,000 jobs -- 44,000 in primary and secondary manufacturing and 26,000 in ancillary sectors. In 2013, Indiana's primary wood-using industry included 130 sawmills, five veneer mills and two mills producing other products. Forest-based manufacturing provided \$5.5 billion (directly and indirectly) in value-added, \$8.7 billion in value of shipments, and a payroll of \$2.6 billion to Indiana's economy in 2016. Between 2008 and 2013, industrial round wood production increased by 8.3 percent to 69.1 million cubic feet. Saw logs accounted for 92 percent of the total harvest, with other minor products primarily veneer logs, pulpwood, handles, and cooperage making up the rest.

More information on Indiana Timber Industry:

1. Indiana Hardwood Assessment <https://www.in.gov/isda/files/IN%20Hardwood%20Assessment%20Final.pdf>

1.2 Maple Syrup — maple syrup report from 2021 to 2025 not produced.

Maple syrup is a product of Indiana's forests. In 2020, there were 200 maple syrup producers with 29 counties having at least one producer. Currently, the Indiana Maple Syrup Association website has 170 producers (from the 2025 association newsletter) but does not indicate how



many counties have one or more of the producers. Most are found in the northern half of the state. In 2020, 78 responded to a survey with 53 indicating a total production of 24,139 gallons of maple syrup. from 53,152 taps that produced an estimated 1,079,013 gallons of sugar water with an average of 44.7 gallons to get one gallon of maple syrup. The 2020 retail prices for gallon, quart and pint are \$43.72, \$13.46, and \$8.39, respectively. From the Associations fall 2025 meeting, extra maple syrup from the state fair was priced at \$40.00, \$21.00, \$11.00, and \$6.00 for gallon, half gallon, quart and pine, respectively.

Sources: [Maple syrup report 2020](#) ; [Indiana Maple Syrup Association](#) ; [2025 Fall Tapline](#)

2 State Forest Health Issues – An Overview

Herbicide damage - The growing season's forest health problems and concerns began with the continual concern for mis-shaped white oak and other oaks leaves from spring to late summer. Landowners see the mis-shaped leaves and asked what caused it and will it impact or kill the tree. The mis-shaped leaves are curled, twisted downward which are symptoms of growth regulator herbicide such as 2,4D or Dicamba.

The 2025 spongy moth survey placed traps over the entire state. The last entire state survey was 2008. The 9,780 traps captured slightly less moths in 2025 than 2024 (24,992 to 25,293) and was like moth capture in 2022. The similar two year moth capture that is down from the higher catch in 2023 confirmed the collapse of spongy moth populations across northern Indiana.

Sullivan County remains the only county with no detection of a spongy moth life stage. The other 91 counties have had a life stage detected in county since survey began in 1973.

Spongy moth treatment to slow the spread occurred in 3 locations totaling 4,979 acres. Two sites treated with Splat and one with Btk.

With spongy moth population collapsed, defoliation was not detected by aerial survey in 2025.

No counties were added the spongy moth quarantine.

Elm Zigzag Sawfly. *Aproceros leucopoda*, was found in Bloomington, Monroe County in July for the first time in **Indiana**. It is believed to have come on planted elms in a street project.

Past Oak Defoliation in Harrison Crawford State Forest reported in 2024 was determined to be from Common Oak Moth, *Phoberia atomaris*. There was no defoliation in 2025 in any area that had defoliation in 2024.

Spotted lantern fly was detected in seven counties in 2025 – Dearborn, Jefferson, lake, LaPorte, Marion, Ripley, and Tippecanoe. 21 counties have SLF.

Beech leaf disease survey sampled buds from 31 locations across the state. To date, DNA of the nematode has not been detected.

Walnut twig beetle traps did not detect it in 2025 in forests, plantations, or high-risk sites – sawmills. The thousand cankers disease is not in Indiana black walnut.

Chestnut oak mortality caused by 2012 drought has stopped. No additional mortality reported in 2025.

Oak wilt was confirmed in Montgomery county for the very first time in 2025. It was also reconfirmed in Elkhart and Porter county. 67 counties have oak wilt. East central area of the state has not had oak wilt detected.

Sassafras wilt research proposed by Purdue research as a new disease complex has not detected the laurel wilt fungus or red bay ambrosia in 2025. The components of sassafras wilt complex are identified in 9 counties. Wilting sassafras reported in 12 other counties.

Future forest pests of concern are Asian longhorned beetle, hemlock woolly adelgid, beech bark disease, sudden oak death, gold spotted oak borer, and other *Agrilus* spp., They were not detected in 2024.

Invasive plants affecting Indiana forest regeneration and biodiversity are kudzu, *Pueraria montana*, tree of heaven, *Ailanthus altissima*, bush honeysuckle, *Lonicera* spp., Japanese stilt grass, *Microstegium vimineum*, garlic mustard, *Alliaria petiolate*, multiflora rose and others.

3 First time occurrence impacting Indiana Forests

3.1 Elm Zigzag Sawfly - *Aproceros leucopoda* -

The following is **Will Drews** (Nursery Inspector & Compliance Officer) report of the first detection in late July of Elm Zigzag Sawfly in Bloomington Indiana.

“I had the recent unfortunate discovery of an invasive sawfly species in Bloomington called the elm zigzag sawfly (*Aproceros leucopoda*). This is the first confirmed sighting of this invasive pest species in Indiana, although my fellow inspectors have seen signs of possible feeding before on nursery stock in the past. (Figure 9)”



Figure 9 Elm Zigzag sawfly feeding pattern on elm leaf.

4 Exotic Pests of Indiana Forests

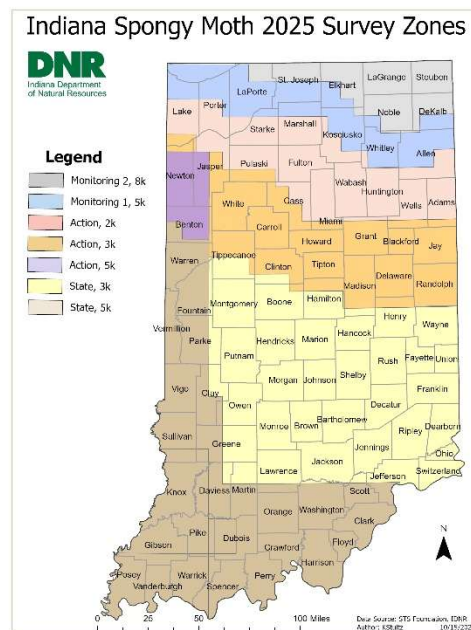
Spongy moth, thousand cankers disease of black walnut, oak wilt, and beech leaf disease dominated forest health program monitoring and management activities. Other pest monitoring activities included, common oak moth, sassafras wilt, hemlock woolly adelgid and spotted lantern fly.

4.1 Spongy Moth – *Lymantria dispar dispar*

4.1.1 Trapping Survey

The 2025 Cooperative Spongy Moth Survey completed its 38th year of the statewide survey. The survey began in 1988 and adopted the USDA Slow-the-Spread (STS) Program and Slow-the-Spread Foundation in 1999. Using STS protocol for its design and operation, the state is divided into three zones: the STS Evaluation Zone, the STS Action Zone, and the State Area. The survey design used fixed 8K & 5K, fixed 5K, 3K & 2K, and fixed 5K & 3K survey grid points for the three zones, respectively, plus regulatory trap sites in state area. (Map 2)

Across all zones, the survey deployed traps at 9,777 sites and omitted 188 sites. There were three random traps placed for a total of 9,780 traps in the field. In 2025, all 92 counties in Indiana had traps placed. This is the first time since 2008 that the entire state has been trapped



Map 2: Spongy moth survey zones.

The survey detected 24,992 moths from 46 counties (39 in the STS zones and 7 in the State zone) ranging from 1 to 4,591 moths per county. LaGrange county had the highest moth catch, 4,591 moths, followed by Steuben, 3,589 moths, Allen, 3,233 moths, and St. Joseph with 2,036 moths. Total moth catch is very similar to 2024 with only 301 fewer moths caught or just 1.19% lower than 2024 (25,293). It is 36% lower than 2023 (39,535) and like 2022 (23,457) (figure 10).

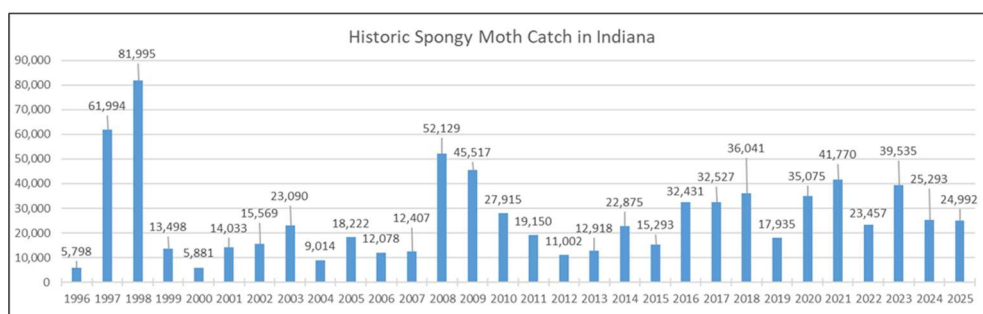


Figure 10: Number of male spongy moths caught by year from 1996 to 2025

caterpillars. Defoliation and a building population may return in 2029 or 2030 assuming spongy moth operates on 5 to 7 year cycle.

4.1.3 Treatments 2025 to Slow The Spread:

Btk Treatment:

First application May 9, 2025. 114.8 gallons Foray 76B used.

Total flight time 1 hour 17 minutes.

Second application May 16, 2025. 114.16 gallons Foray 76B used.

Total flight time 1 hour 20 minutes.

Treatment cost was \$52.06 per acre per application for a total of \$18,358.76.

Mating Disruption Treatment:

Application date: June 26, 2025. 4,040 acres treated.

Toto MD25 2,155 acres; Wheatfield MD25 1,885 acres.

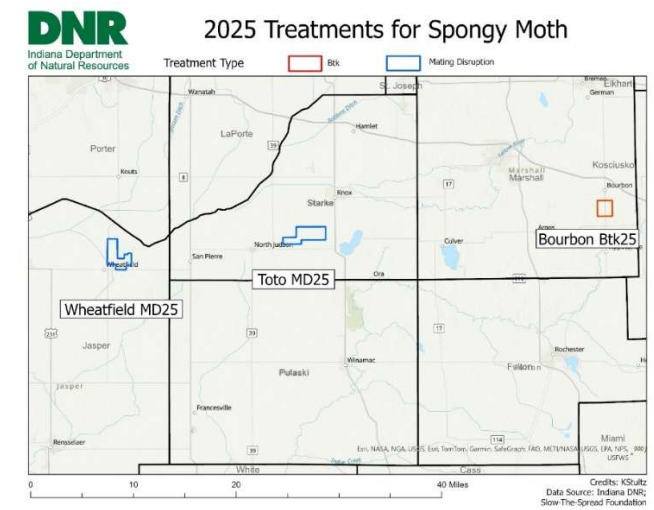
Both sites were treated with SPLAT GM-Organic at the 6 gram rate.

Estimated total flight time, including observation plane, is 11 hours 40 minutes.

Application cost \$5.41 per acre totaling \$23,192.67.

County	Site Name	Program	Treatment Type	Treatment Material			EA Acres	NLCD Acres	Estimated Treatment Acres	Estimated Treatment Acres Both Applications
				Rate	Application #	Method				
Marshall	Bourbon Btk25	STS	Btk	25 BIU	2	Aerial	1,402	275	346	692
Total STS Acres							1,402	275	346	692

County	Site Name	Program	Treatment Type	Treatment Material			EA Acres	NLCD Acres	Estimated Treatment Acres
				Rate	Application #	Method			
Starke	Toto MD25	STS	MD	6 g	1	Aerial	3,007	1,268	3,007
Jasper	Wheatfield MD25	STS	MD	6 g	1	Aerial	2,630	0	1,280
Total Acres STS							5,637	1,268	4,287



4.1.4 Treatment Analysis 2025 sites:

The 2025 Bourbon treatment is successful.

The 2025 mating disruption sites will be evaluated in 2026.

4.1.5 Treatment Analysis 2024 sites:

Berne Btk - Analysis in 2025 of the 2024 continued to find it not successful,

Winona and Roanoke MD - Analysis found the 2 sites successful.

Richmond eradication MD - Analysis found it successful as no moths captured in traps. If no moths detected in delimit trapping in 2026, eradication will be completed.

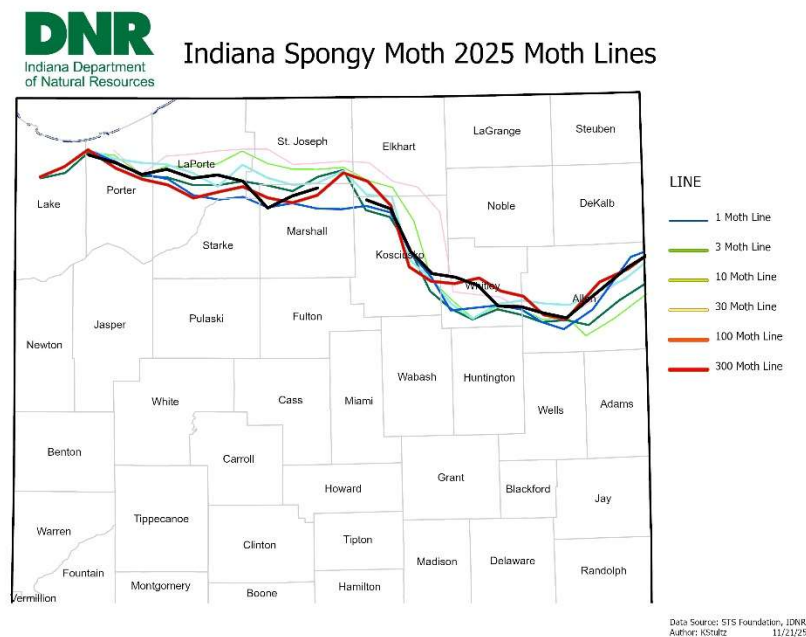
4.1.6 Spread Rate:

The 2025 annual spread rate is a negative 0.38 mile, and the 3-year average spread rate is a positive 0.67 mile. Both well below the goal of 5 miles per year.

Spongy moth annual and 3-year average spread rate

Unit	2025	3-year average
Kilometer	-0.61	1.08
Mile	-0.38	0.67

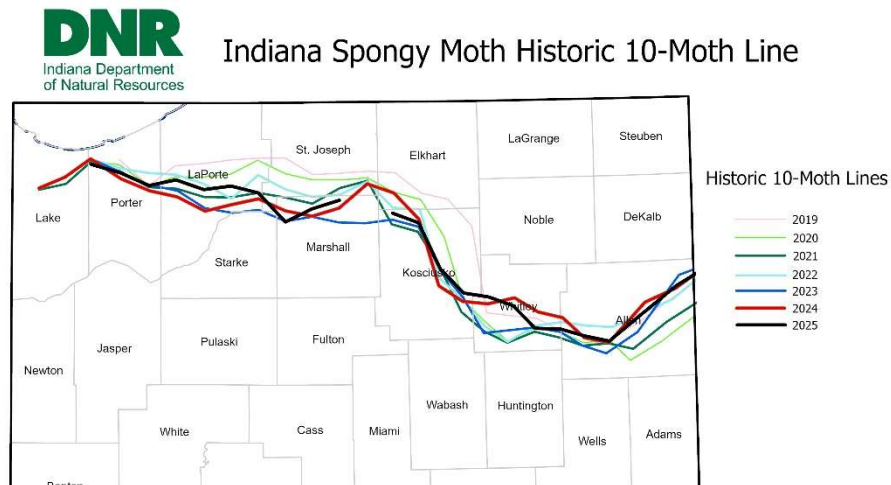
4.1.7 Moth Lines:



The 2025 moth catch that is like the 2024 moth catch kept the 2025 moth lines stationary and like their 2024 location.

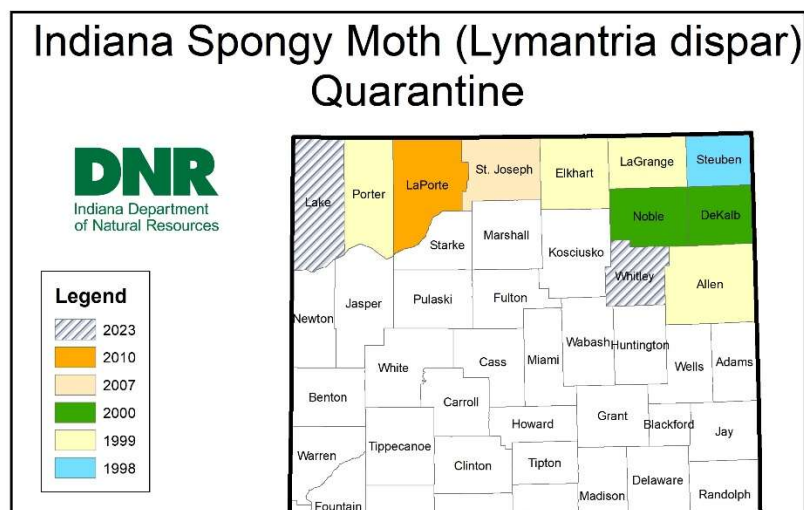
The 10-moth line remains stable for the last seven years. It follows U.S. Hwy 30 across the state (Allen to Lake County) compared to prior years when it followed U.S. Hwy 30 in just the eastern half of the state (Allen and Whitley county).

The 10-moth is used in the decision to quarantine a county. When it is half-way through a county, the process to quarantine the county begins. From the 2025 survey, no counties meet this guide, and none are planned for quarantine.



4.1.8 Quarantine:

The quarantined counties remain unchanged after the 2025 survey.



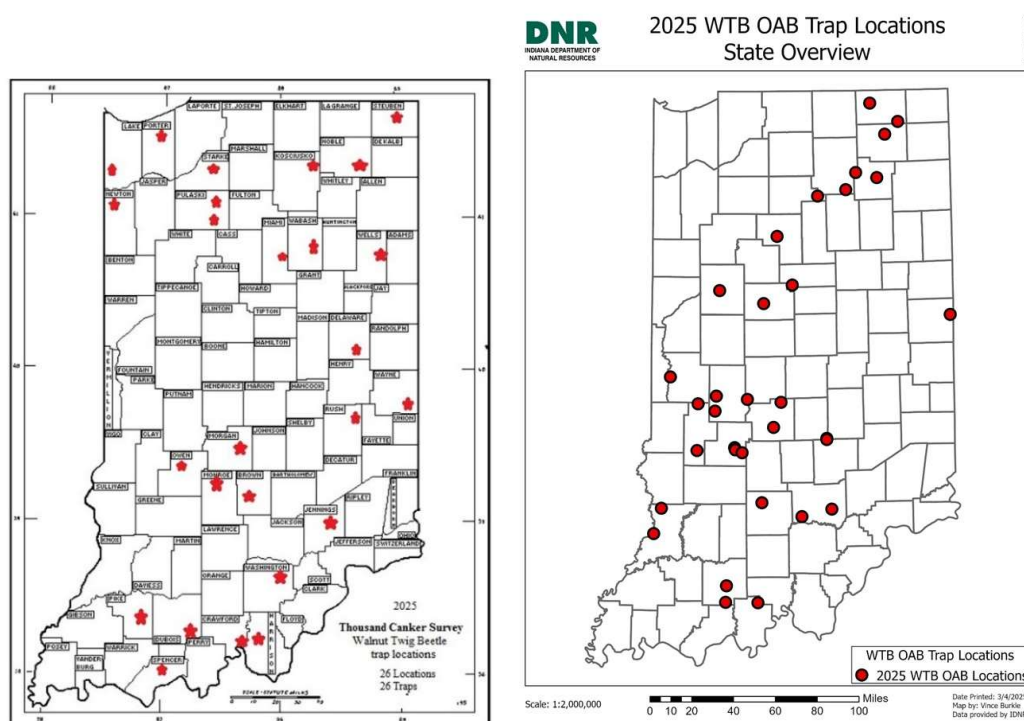
4.2 Thousand Canker Disease – *Pityophthorus juglandis* & *Geosmithia morbida*

The Walnut Twig Beetle (figure 20) trapping survey consisted of 26 locations (figure 21) – plantations or forest – placing 26 lindgren funnel traps baited with the walnut twig beetle lure.

One trap was placed in the black walnut plantation in Yellowwood State Forest where *Stenomimus pallidus* with *Geosmithia morbida* was originally collected by USFS survey.



Traps were also placed at 33 high-risk sites in 2025 (primarily sawmills and veneer mills) throughout the state. For the 2 locations (Franklin and Johnson Counties) with previous trapping of WTB, traps were not placed at the Franklin County sawmill, and 2 traps were placed at one veneer mill (Danzon north & south) and none at the second veneer mill (Amos Hill) in Edinburgh, Johnson county.



Walnut twig beetle was not caught in any 2025 trap. 2020 was the last year WTB was found in a trap. No black walnut tree has been detected with TCD and no tree has died.

The windshield survey for symptomatic black walnut was conducted in 12 cities - Angola, Bloomington (middle 1/3), Elwood, Evansville (Northeast ¼), Indianapolis (Perry Township southern 1/3), Lowell, Madison, Mishawaka (Northern 1/3), Osgood, Princeton, Napoleon, Noblesville (Southwest ¼), Westport, West Lafayette (Southern ½).

Since this survey began in 2012, 16,364 trees have been evaluated with 193 suspect trees and no positive trees in 161 municipalities.

4.3 Spotted Lanternfly – *Lycorma delicatula*

Spotted lanternfly (SLF) (figure 11) is an invasive species detected in Berks County Pennsylvania in 2014. This colorful planthopper sucks sap from plants excreting a honey dew that is sticky and turns black with the growth of sooty mold after raining down in the forest.

It feeds on more than 70 plant species and has a strong preference for Tree of Heaven, also an invasive species, grapevines, red maples, black walnut, birch, and willow.



Figure 11: Left, Spotted lanternfly 4th instar nymphs. Photo by Stephen Ausmus. Right, Spotted lanternfly adult. Photo by Lawrence Barringer, Pennsylvania Department of Agriculture.

Spotted lantern fly was detected in seven counties in 2025 – Dearborn, Jefferson, Lake, LaPorte, Marion, Ripley, and Tippecanoe. (figure 12). Several of the detections are associated with railyards and rail lines.

Switzerland county has the largest infested area, followed by the city of Huntington. Next is Elkhart/Goshen and Fort Wayne. Acres of land area infested is not determined but is estimated to exceed 150,000 acres.

The Division of Entomology and Plant Pathology conducted treatments in Switzerland and Huntington counties targeting tree of heaven with dinotefuran or spraying the understory with bifenthrin.

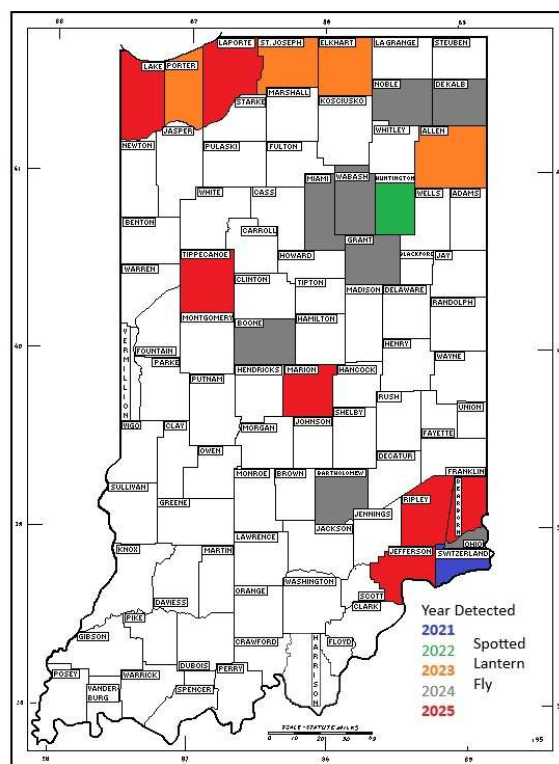


Figure 12: Spotted lantern fly infested counties through 2024.

4.4 Sassafras Wilt – *Novel Ophiostoma sp. Xylosandrus crassiusculus*, *X. germanus*, *Anisandrus maiche*, *Aphelenchoides sp.*

Olivia Bigham, PhD Researcher. Anna Conrad, USFS Pathologist Purdue University, and Matt Ginzel, Professor of Forest Entomology Purdue University received reports and locations (counties) of wilting sassafras 2022 through 2024.

They investigated the reports and isolated several fungal species from wilted sassafras including a Novel *Ophiostoma* sp.. They did not capture red bay ambrosia beetle from wilted sassafras. They did capture ambrosia beetles *Xylosandrus crassiusculus*, *Xylosandrus germanus* and *Anisandrus maiche* from material collected 2022 to 2024. They also found a plant parasitic nematode, *Aphelenchoides* sp. in wilted trees.

But they did not isolate the Laurel wilt fungus, *Harringtonia lauricola* formerly *Raffaelea lauricola* from the wilted sassafras. With no detection of laurel wilt fungus and detection of an assemblage of insects and microbes associated with wilting sassafras they suggest calling it Sassafras Wilt.

Sassafras wilt with the assemblage of insects and microbes is present in 5 counties (figure 13). An additional 4 counties have wilt symptom, xylem stain, beetle damage and no detection of *Ophiostoma* sp. An additional 12 counties have only sassafras wilt symptoms reported or observed.

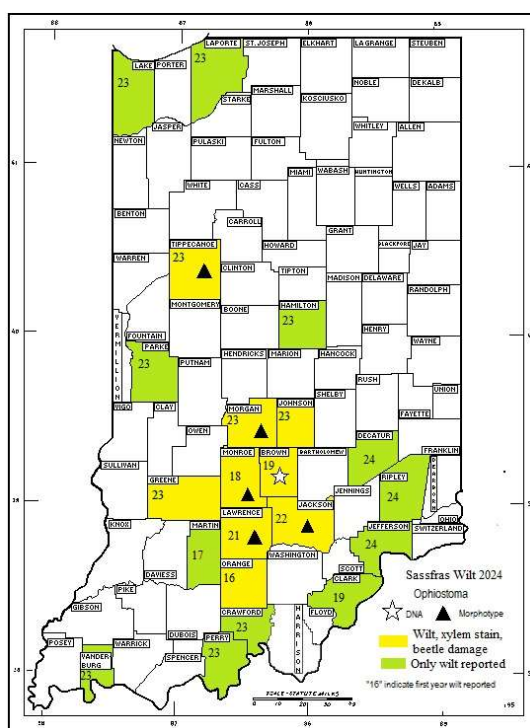


Figure 13: Sassafras wilt counties noting counties with *Ophiostoma* sp., wilt, xylem stain, beetle, wilt only, and year wilt reported.

5 Other Exotic Insect Pests of Concern

5.1 Asian Long-horned Beetle (ALB) - *Anoplophora glabripennis*

Survey around the industrial building where ALB was collected in 2020 has not detected the beetle or infested trees from 2021 to 2025 and is considered an interception not the start of infestation.

ALB does not occur in Indiana and concern continues for introduction into southeastern Indiana from the Bethel, Ohio infestation.

There were no reports of possible ALB infested trees or the beetle in 2025.

5.2 Hemlock Woolley Adelgid - *Adelges tsugae*

In 2012, Hemlock Woolly Adelgid (HWA) was detected on one site in Michiana Shores in LaPorte County. The site is ½ mile south of Michigan line and 8 miles south of an infestation in New Buffalo, Michigan. Survey of the site and surrounding area since 2012 has not detected HWA.

Survey of native eastern hemlock forest locations scattered across Indiana through 2025 has not detected HWA. It has not been introduced through nursery stock and detected in any landscape, nursery, and retail locations.

5.3 Elongate Hemlock Scale, *Fiorinia externa*

The Division of Entomology and Plant Pathology monitors nurseries, retail locations and urban locations for the elongate hemlock scale. It was detected in a landscape setting in Bloomington, Monroe county in early October 2025.

6 Plant Pathogens of Concern

6.1 Chestnut Oak Mortality — not Pathogenic, Drought induced decline.

First reported in Patoka Reservoir in 2016, chestnut oak mortality (figure 14) is still present in south central Indiana in the areas reported in prior years.

The 2024 aerial survey identified several areas of mortality, and one large area estimated at 3,700 acres with a large amount of dead trees (figure 14). The 2025 aerial survey of the 2025 tornado that went through Yellowwood State Forest and Brown County State Park found the tornado went through some of the 3,700 acres of mortality.



Figure 14: Chestnut oak mortality
Patoka Reservoir September 2016.

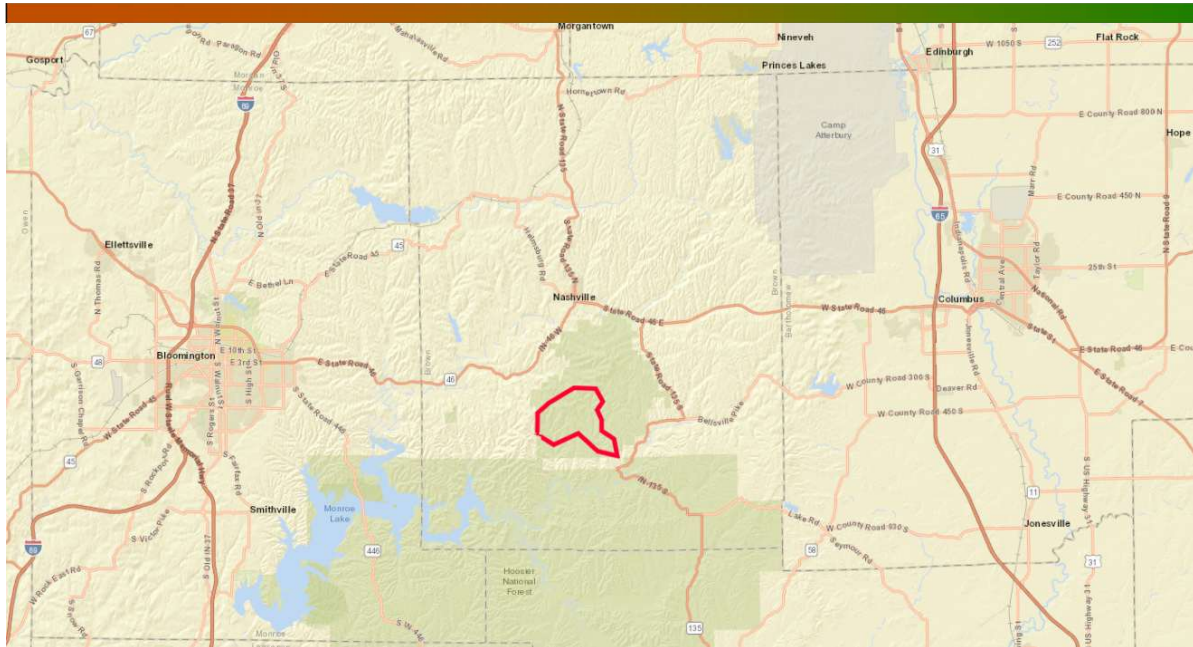


Figure 15: Area with extensive tree mortality in Brown County State Park.

Research and dendrochronology analysis of Chestnut Oak mortality by Purdue found –

1. occurred
 - a. on north and northeast aspects,
 - b. high slope position followed by mid slope position,
 - c. high density stands.
2. smaller drought events before 2012 placed the trees in a position leading to decline and death when the strong 2012 drought occurred.
3. fast growing trees are more likely to decline and die.
4. slower growing trees tolerated the drought.
5. slow growing trees put more resources into roots and fast growing trees did not.
6. fast growing trees put resources in the above ground part of the tree.
7. no association with any pathogen,
 - a. such as *Phytophthora cinnamoni* which was associated with Rapid White Oak Mortality in Missouri.
 - b. *P. cinnamoni* occurrence was very limited.
8. chestnut oak mortality followed typical drought induced decline.

6.2 Oak Wilt - *Bretziella fagacearum* (formerly - *Ceratocystis fagacearum*)

Oak wilt was confirmed in Montgomery county for the first time. Adding this new county brings total counties with oak wilt to 67. It was found in a 72 acre forest where the landowner reported red and black oak dying in scattered small groups in recent years.

It was reconfirmed again in Elkhart county and the 2024 Elkhart oak wilt location of large northern pin oak trees on one property received the second injection of propiconazole in June 2025. The arborist reported possible phytotoxicity on epicormic sprouts and no oak wilt symptoms. The aerial survey over the site in June did not detect any symptomatic tree on the property. No other oak wilt trees were detected in the surrounding area to the property by aerial survey. The arborist did report one other oak wilt property in Elkhart county.

There was no additional detection in Franklin County in 2025 after detection in 2021, 2023 and 2024.

Oak wilt is common in the woodlots of northwestern Indiana in the Kankakee River basin, and It was reconfirmed in Porter county.

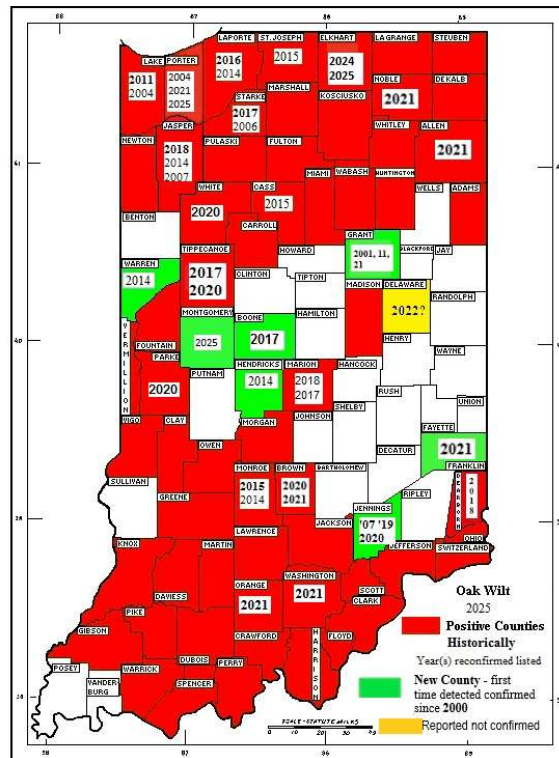


Figure 16: Counties confirmed with oak wilt. Counties in red were confirmed with oak wilt from original surveys through 1979. Green shaded counties were first time confirmation after 2000, Years in county indicate year of confirmation or re-confirmation.

Of the counties without oak wilt, oak wilt was suspected in a red oak tree one each from Sullivan and Bartholomew counties. Purdue Plant Diagnostic lab found the Sullivan county tree had bacterial leaf scorch. The Bartholomew tree had canker fungi in the branch samples.

No samples or reports of oak wilt were received from the other counties without confirmed oak wilt.

6.3 Sudden Oak Death - *Phytophthora ramorum*

The Division of Entomology & Plant Pathology continued the annual Sudden Oak Death (SOD) survey in nurseries and garden centers. Nursery inspectors submit 200 or more samples each year from any of 5 vector species they encounter in nursery inspections.

Phytophthora ramorum was not detected in any of the samples.

The only time SOD has been detected in Indiana is through vector species in nursery trade in 2006, 2012 and 2019. The disease has not been detected in the rural or urban forest.

6.4 Laurel Wilt – *Harringtonia lauricola* (previously *Raffaelea lauricola*), red bay ambrosia beetle, *Xyleborus glabratus*

Sassafras and spicebush are hosts of this disease and are present in Indiana forests. In 2020 the disease was detected in sassafras in two Kentucky counties that border Clark, Floyd, and Harrison County.

No trapping survey for red bay ambrosia beetle in 2025. No reports of wilting sassafras. One report of wilted spicebush was tested at Purdue, and the fungus was not detected by isolation or DNA test.

Laurel wilt fungus and red bay ambrosia beetle have not been detected in wilting sassafras and spicebush in Indiana.

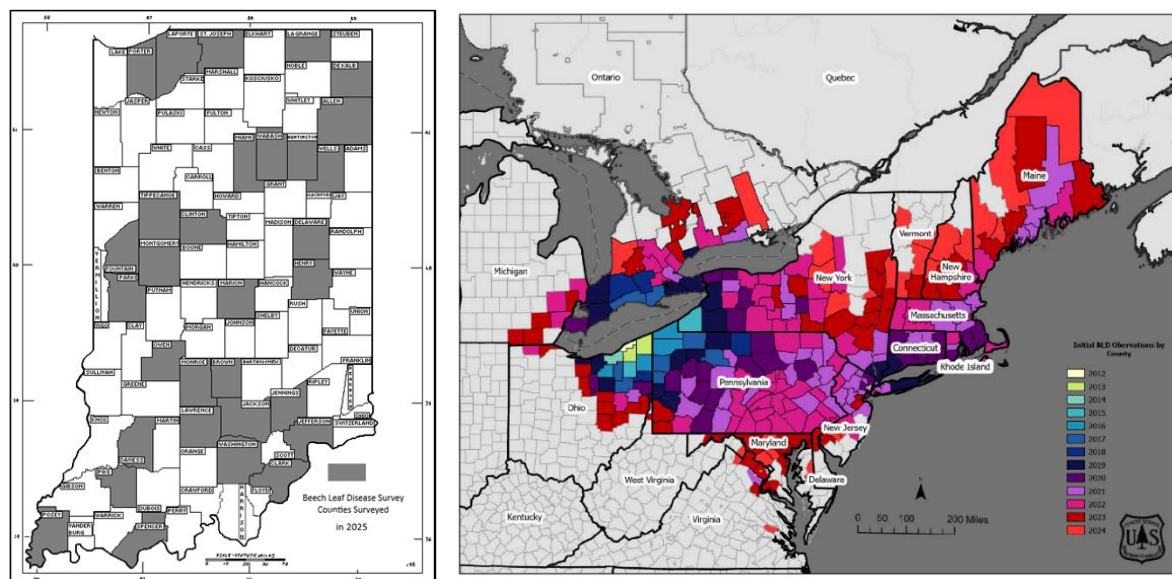
6.5 Beech Leaf Disease - *Litylenchus crenatae mccannii*

The nematode *Litylenchus crenatae mccannii* causes this disease. This is a subspecies of *Litylenchus crenatae* which is native to Japan found on *Fagus crenata*. In the U.S. there is morphological and host range differences that resulted in the subspecies designation.

The nematode was not detected in 152 samples collected in 2024 from 40 locations.

Surveyed 31 locations in fall 2025 submitting 52 samples to Purdue Plant Diagnostic Lab; No detection of nematode DNA from ongoing testing at the time this report prepared.

Foresters did not report American Beech with symptoms in 2024 or 2025.



6.6 Beech Bark Disease - *Cryptococcus fagisuga*, *Nectria coccinea* var. *faginata*

No survey was conducted for this disease. Foresters and arborists did not report a dying beech tree or a tree with the white color of the beech scale on the bark. This disease is not present in Indiana.

Its first occurrence is likely to be in northern Indiana, possibly LaPorte County, because of its presence along Lake Michigan in the Lower Peninsula of Michigan and with the possibility that infected/infested material (firewood) moved into Indiana.

6.7 Bur Oak Blight - *Tubakia iowensis*

In 2025, Bur oak blight was found in bur oak woods nature preserve in Lake county with trees declining and dead. The disease was first detected in 2017 in Lake County. In 2018, the fungus was confirmed from swamp white oak in Allen County in 2018. There were no reports in 2019. In 2020, one symptomatic tree was observed in Lake County in September, and the 2017 symptomatic trees did not show symptoms in 2020. No reports of this disease in 2021 to 2024.

6.8 White Pine Needle Cast – *Dothistroma pini*

Yellow and tan color needles were observed on large white pine in September 2018 in Monroe County along highway 446 on the Hoosier National Forest. Purdue Plant Diagnostic lab confirmed *Dothistroma pini* present in symptomatic needles. Through 2025, those trees still have some symptoms of the disease but have not progressed toward death.

That is not the case with other trees in Brown, Clark, Harrison, Jackson, Lawrence, Monroe, Morgan, Orange, Pike, and Washington county where trees are declining and dying. One white pine plantation in Orange county has significant impact that the landowner decided to harvest the trees and replant to hardwoods.

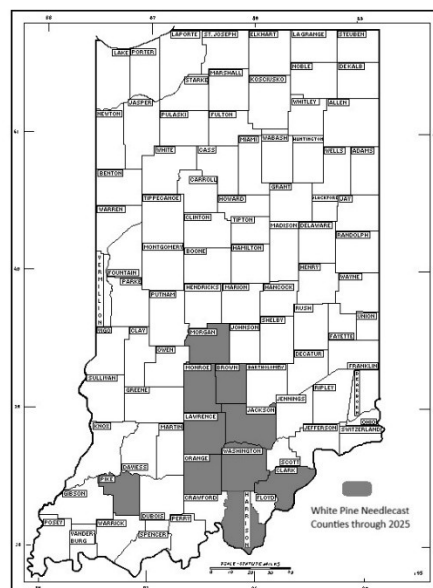


Figure 17: Counties with white pine needlecast through 2025

7 Native Insect and Disease Concerns

7.1 Jumping Oak Gall - *Neuroterus* spp.



Figure 18: Jumping oak gall on underside of white oak leaf.

No report in 2025.

Prior report and damage –

2023 – Lake county, first report in northern Indiana.

2019 – Lawrence, Martin and Orange counties on white oak.

1999, 2012, 2016 – damage to white oak in southern Indiana.

7.2 Forest Tent Caterpillar – *Malacosoma disstria*

There was no report of forest tent caterpillar or its defoliation in 2025. The last epidemic occurred in southeastern Indiana 2002 -2006 (Dearborn, Jefferson, Ohio, and Switzerland counties). Prior to that, the only other recorded epidemic was in the mid-late 1970s in south-central Indiana (Greene, Lawrence, Martin, and Monroe counties).

7.3 Looper Complex – Linden looper, *Erannis tiliaria*, half winged geometer, *Phigalia titea*

The first looper epidemic occurred 1978-1982 across south-central Indiana. The second epidemic occurred from 2003-2004, defoliating 89,252 acres in 2003 and 131,943 in 2004 over seven south-central counties each year. The last occurrence was 2013 with very light defoliation in Washington County in Jackson-Washington State Forest.

Using the timeline of the two epidemics occurring about every 20 years, loopers and their defoliation could occur in the next few years.

Defoliation by this looper complex did not occur in 2025.

7.4 Common Oak Moth - *Phoberia atomaris*

Defoliation of the post oak trees in Post Oak Nature Preserve in Harrison Crawford State Forest was reported Friday May 24, 2024. The report stated it was only post oak defoliated, and caterpillars and their frass were not found. Some individual trees were completely defoliated and others with light to moderate defoliation.

Aerial survey May 31, 2024, mapped defoliation in the Nature Preserve and several other areas on the forest totaling 1,000 estimated acres. Defoliation occurred on south facing slopes. Defoliation was not only post oak but other oak trees.



Tree bands covered with tanglefoot were set in fall 2024, and spring 2025. The bands did not capture looper moths which was thought to be the cause of the defoliation. The spring 2025 bands did not capture looper moths but did capture Common Oak Moth caterpillars on the tanglefoot and more of the caterpillars hiding under the band. The caterpillars were only found on one trap location of 7 locations with bands. This is the first occurrence of defoliation by common oak moth.

Aerial survey and property foresters did not find defoliation in 2025 on the same areas defoliated in 2024.

7.5 Tulip Tree Scale - *Toumeyella liriodendra*

There were no reports of the scale in 2025. The last report was 2020, with a few reports of black sooty mold and trees dripping sap from tulip trees in plantations, and one report of noticeable scale damage. The most damage occurred from 2011 to 2012 in south central Indiana combined with the 2012 drought, yellow poplar mortality was widespread in 2012 and 2013.

8 Invasive Plant Species

8.1 Kudzu - *Pueraria lobata*

Kudzu, an Asian native invasive vine, is located throughout Indiana but is predominately in southern Indiana. Through 2024, there are 221 confirmed sites totaling 264 acres in 44 counties (figure 19). (Will Drew, Division of Entomology & Plant Pathology Personal Communication)

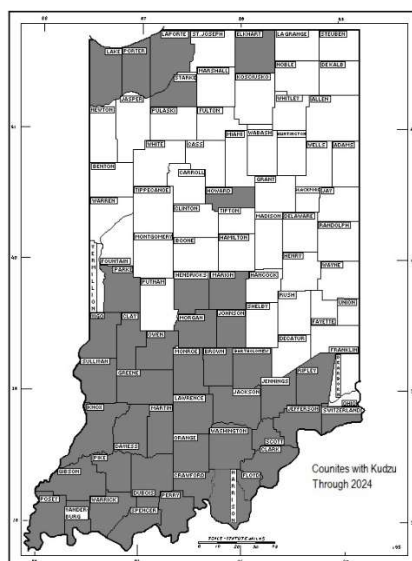


Figure 19: Counties with Kudzu

8.2 Invasive Plants – Top Ten on State Forests

Japanese honeysuckle and multiflora rose are one and two top invasive species on state forests occupying the most acres (figure 20)

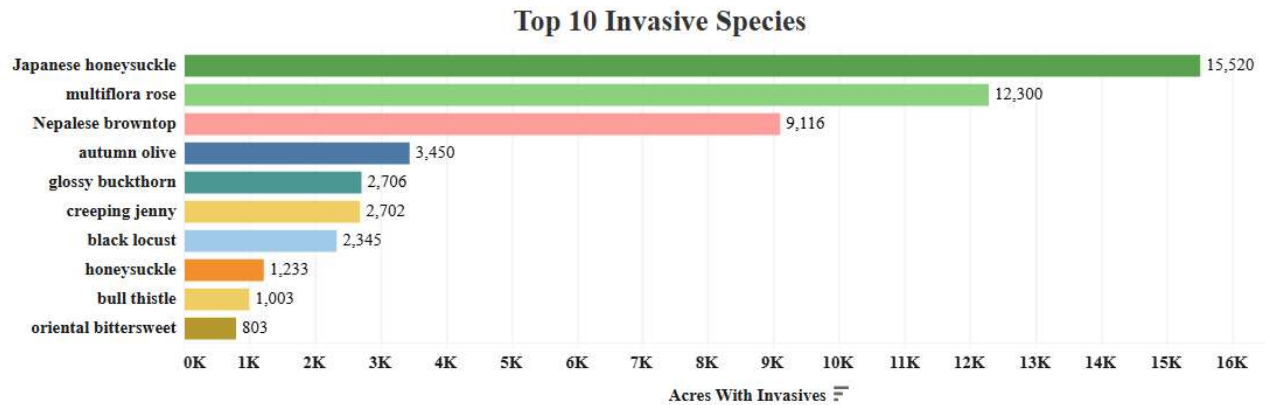


Figure 20: The top 10 invasive species on state forests by acres.

8.3 Invasive Plants – Top Ten on Classified Forests

On classified forests (private forestland), multiflora rose, and Japanese honeysuckle flip their one and two ranking by acres (figure 21).

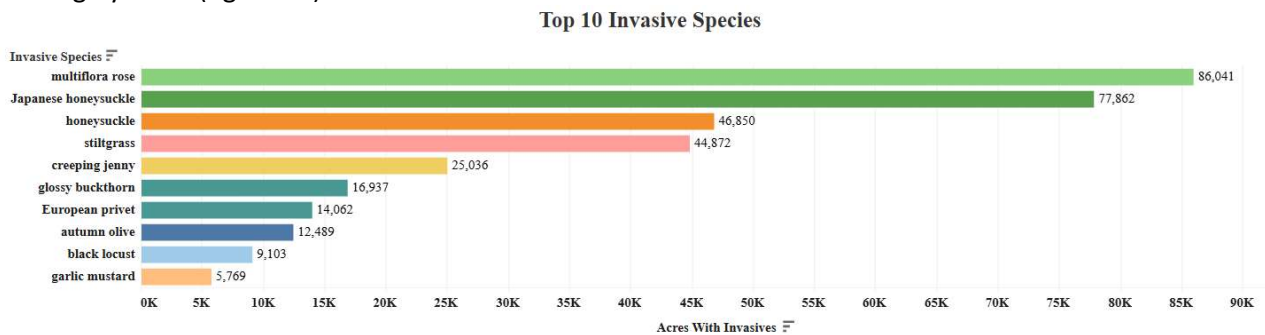


Figure 21: The top 10 invasive species on state forests by acres.

9 Abiotic Damage – Weather, Herbicide

9.1 Tornado Hoosier National Forest – March 15 – Source: Remote Sensing: Event Report March 2025 STORM DAMAGE: HOOSIER NATIONAL FOREST Sara Wegmueller, USDA FS.

A large storm producing several tornadoes caused extensive damage across southern Indiana, including the Hoosier National Forest, on 15 March 2025. Additional damage was incurred during a following storm on 19 March 2025.

The majority of the damaged occurred in Brownstown Ranger District. Nearly 24.5k acres were mapped as damaged areas.

The most widespread damage appeared to be on the western side of the northern portion of the Brownstown Ranger District (RD) (Figures 22). A consistent line of damage was noted from the southwest corner moving northeast to the northern border of the RD. That northeast extent

beyond RD bounty occurred in Yellowwood State Forest and Brown County State Park. That extent touch into the May 16 tornado damage shown below.

Additional damage was observed in the northwest corner of the southern portion of the Brownstown RD, and in the west central part of the Tell City RD

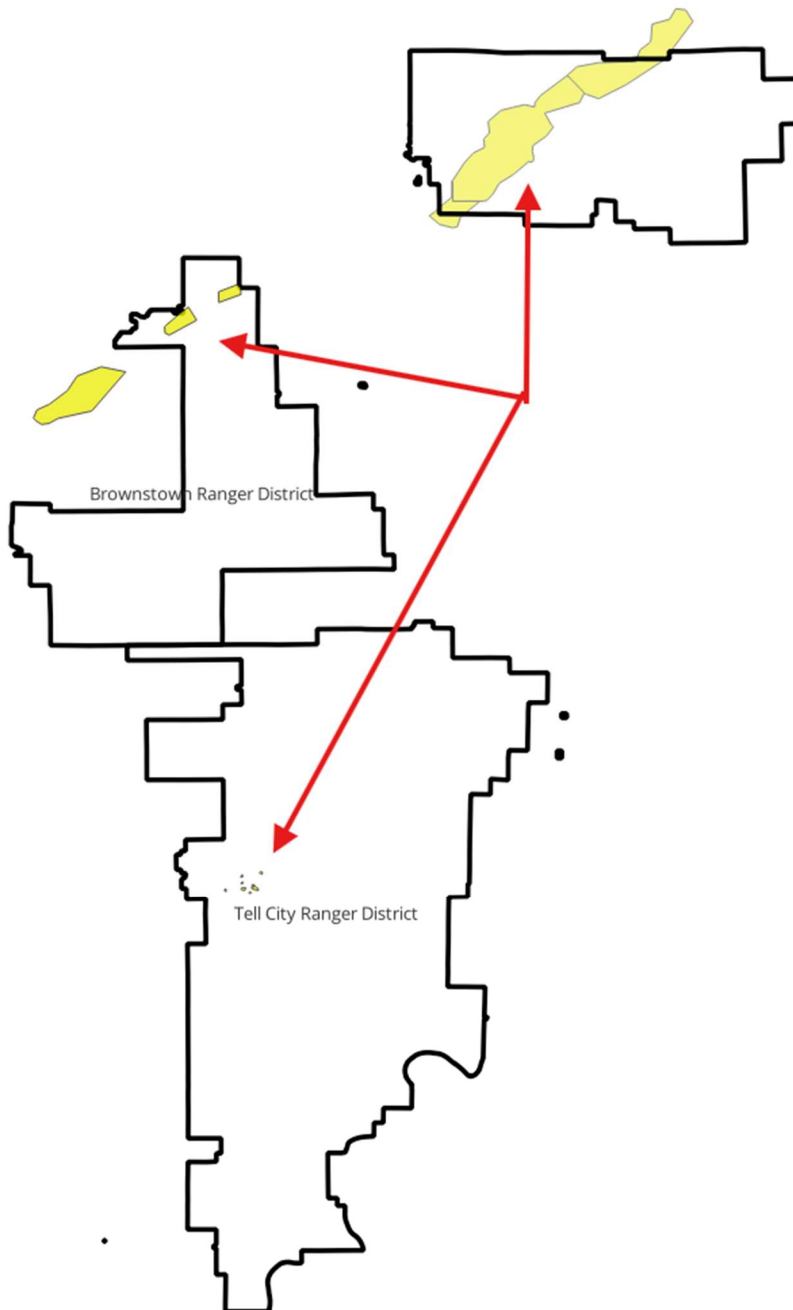


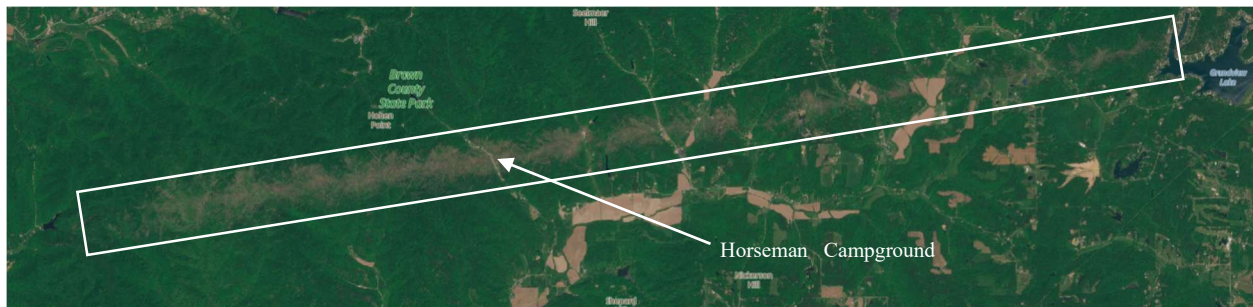
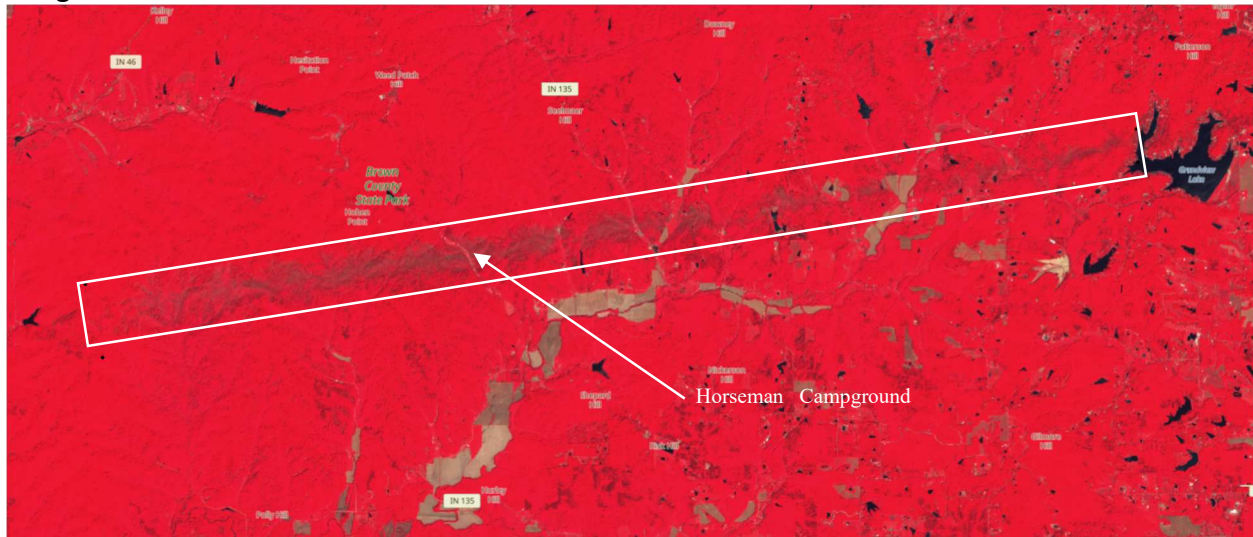
Figure 22: Overview of damage mapped on Hoosier National Forest, yellow polygon indicate areas of damage.

9.2 Tornado in Yellowwood State Forest & Brown County State Park May 16

The May 16 tornado went through Yellowwood State Forest and Brown County State Park starting east of Crooked Creek Lake and ending at Grandview Lake in Bartholomew County. It was on the ground for approximately 15 miles. The path of the storm damage covered an estimated 1,750 acres. The horse campground in Brown County State Park sustained the worst damage.

The tornado path is inside the white box on the photos below. The white arrow points to the horseman campground in Brown County State Park.

Images are Sentinel-2 L1C infrared and color.



9.3 Herbicide Damage - White Oak and other trees.

At and after bud break and during leaf expansion, white oak leaves are impacted by herbicide. Besides white oak, it also occurs on other oaks, yellow poplar, hickory, maples redbud.

The concern is the repeated annual damage to white oak. Does this create a chronic condition reducing incremental growth leading to tree decline and death. The spring “burn down” of crop fields with herbicides coincides with the damage. The herbicides volatilize and move onto the surrounding forest and edge trees.

The shaped of impacted leaves is typical of 2,4D herbicide although other herbicides could be involved.

Below are photos of a white oak tree with leaf curl/rolling located next to a small shed at Vallonia parking area and a white oak tree at the entrance across from a crop field.

Herbicide damage to trees started in 1983 with a condition called 'tatters' because of the leaf condition created by the herbicide. The 'tatter' symptom was reported through 1980's into the 1990's. The current herbicide symptoms and damage returned in 2012, initially on yellow poplar and latter on white oak, other oaks, hickories and other trees. Of these, white oak is common and first tree to show the symptoms seen in the photos.



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