

# New York 2020 Forest Health Highlights

## Forest Resource Summary

New York state is 61% forested - forests cover 18.6 million acres of our 30.2 million total acres (about one acre per resident). Seventy-eight percent of this land is privately owned and managed for wood or pulp. The State owns 19 percent of the land, which mostly encompasses the Adirondack Park. Most of the land owned by the State is forested. These forest lands provide a recreational base for millions of residents and others visiting the State's scenic regions. New York's forests also produce timber, providing employment to 2 percent of the State's workforce. The manufacture of wood products provides \$2.4 billion annually to the State's economy. The forest resource is made up of a variety of forest types, mostly maple and other hardwoods, along with pine, oak, and eastern hemlock.



*Figure 1 Map of NY State showing forested areas of 5 acres and larger*

## Aerial Surveys

In 2020, New York State forest health staff covered about 5.6 million acres during aerial surveys, and mapped about 107,000 acres of forest damage in total. US Forest Service ForWarn data was used for preflight reconnaissance and planning. Defoliation by gypsy moth, and crown decline or mortality attributed to emerald ash borer and hemlock woolly adelgid were among the most commonly mapped damage types.

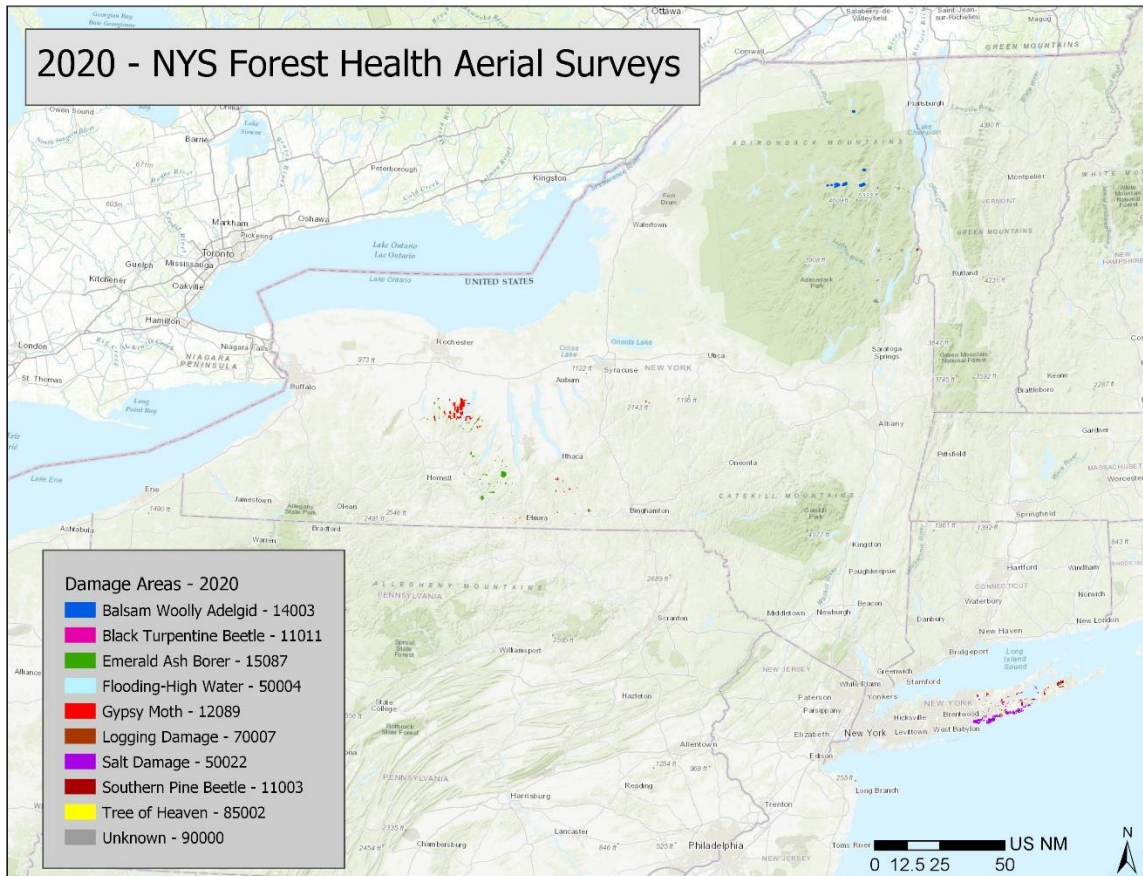


Figure 2 Map of New York State showing forest damage detected by aerial surveys

## Forest Damage

### Insects

#### Asian longhorned beetle

There has been an active Asian longhorned beetle (ALB) eradication program in New York State for over 20 years (ALB was first found in Brooklyn, New York in August 1996). Since that time, teams of survey crews have been scouting out infestations. Trees found to be infested are removed and destroyed, while healthy trees are sometimes treated to prevent infestations from expanding. ALB has now been eradicated from all boroughs of New York City. There is now only one remaining active quarantine area in New York, located in Central Long Island.

#### Southern Pine Beetle

Southern Pine Beetle (SPB) continues to cause pine mortality on Long Island. Sustained suppression efforts from the DEC's Forest Health Unit has reduced SPB populations below outbreak status within the Core of the Central Pine Barrens. Currently SPB outbreaks continue on the South Fork in the towns of South Hampton and East Hampton outside the Core of the Central Pine Barrens. DEC's SPB suppression in 2020 began in September and continued into December with a total of 556 trees cut this year for suppression. This brings the total number of trees cut for SPB suppression since 2014 to 21,917. In



addition to suppression the DEC SPB program focuses on SPB prevention and restoration. Ecological thinning restores the globally rare pine barrens ecosystem increasing tree health and resilience and helping to reduce the risk of an SPB outbreak within these stands. During January and February of 2020 DEC crews thinned and mechanically treated 47.5 acres in Sarnoff State Forest. DEC and CPBC plan to implement prescribed fire in these managed areas in 2021 and continue the path toward pine barrens health and restoration. In preparation for future prescribe burns, the DEC put in .85 miles of fuel breaks in December 2020. As part of the continued monitoring effort low numbers of SPB were captured in insect traps in the Lower Hudson Valley at Bear Mountain, Schunnemunk, and Minnewaska State Parks in the Fall of 2020.

### Hemlock woolly adelgid

Hemlock woolly adelgid (HWA) continues to cause widespread damage and mortality to native forest and ornamental eastern hemlock trees. Hemlock mortality and decline are recorded regularly throughout the known range of HWA in New York. Damage is most severe in areas that have been infested the longest, such as much of the Catskills and Finger Lakes regions. In some of these areas, most of the trees are infested, and many of them are in declining health or dead. In 2020 there was a large increase in adelgid numbers throughout the state. This led to the second confirmed HWA finding within the Adirondack park on the east side of Lake George in Washington County. After extensive delimitation efforts over 200 acres of infestation were mapped and 138 acres were treated in the fall of 2020. Additionally, 25 acres of hemlock were treated around Hemlock Canadice Lake the water supply for Rochester year 2 of a 4-year treatment plan. DEC is finalizing its statewide management plan and has been actively working with partners to manage and monitor HWA throughout the state with over 250 surveys submitted through iMap Invasives in 2020.



*Figure 3 DEC staff and partners during hemlock woolly adelgid treatment at Glen Island campground.*

### Emerald ash borer

Emerald ash borer (EAB) has expanded in range has expanded to nearly every corner of the State. In 2020, the presence of EAB was confirmed for the first time inside the Adirondack Park, at a handful of new locations in Warren County. Severe ash mortality from EAB has been observed in many areas of the state where the infestation is older. Research activities into biological control and surveys to locate potentially resistant ash trees are being conducted in all the infested regions of New York.

### Spotted Lanternfly

The first New York State infestation of spotted lanternfly (SLF) was discovered in Staten Island in August 2020. Infestations have also been confirmed in Port Jervis, Sloatsburg, Orangeburg, and Ithaca. SLF threatens the agriculture and forestry industries and is also a nuisance pest. The nymphs and adults feed on over 70 different plants with piercing sucking mouthparts.



*Figure 4 Stephen Clark of USDA inspects a rail yard in Staten Island for signs of spotted lanternfly. Photo: USDA*



## Gypsy moth

Gypsy moth defoliation occurred at varying levels across the state, with the western Finger Lakes (Ontario and Livingston Counties) experiencing approximately 45,000 acres of moderate to very severe defoliation. Smaller pockets of moderate defoliation were noted in Essex and Washington Counties, Oneida and Oswego Counties, and Tioga County. Two virtual workshops were held to educate professions and the general public. At the 1st, attendees gained knowledge on gypsy moth identification and life cycle, damage caused, location in NY, natural enemies, and treatment options. The 2nd workshop focused on an egg mass survey protocol and how to interpret the results for deciding if treatment is warranted.

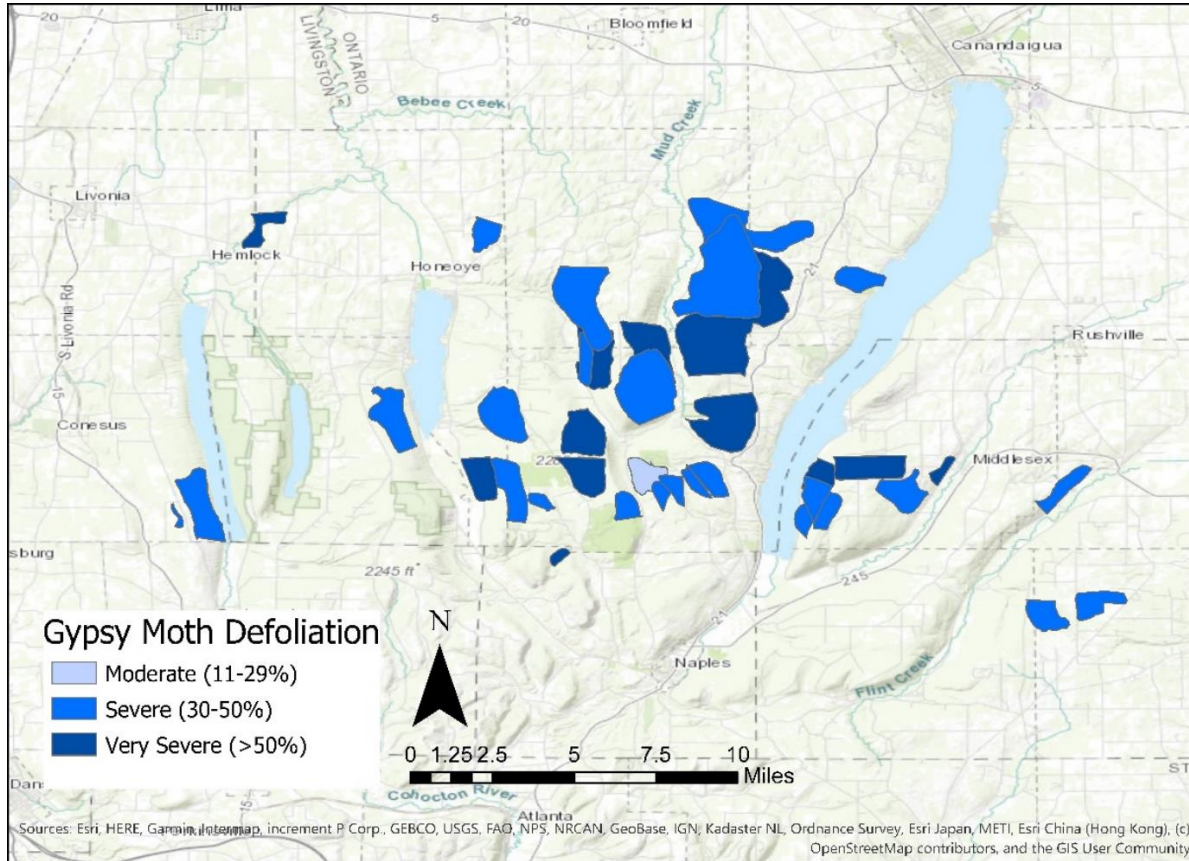


Figure 5 Map showing gypsy moth defoliation in the Finger Lakes region of New York.

## Pathogens

### Beech leaf disease

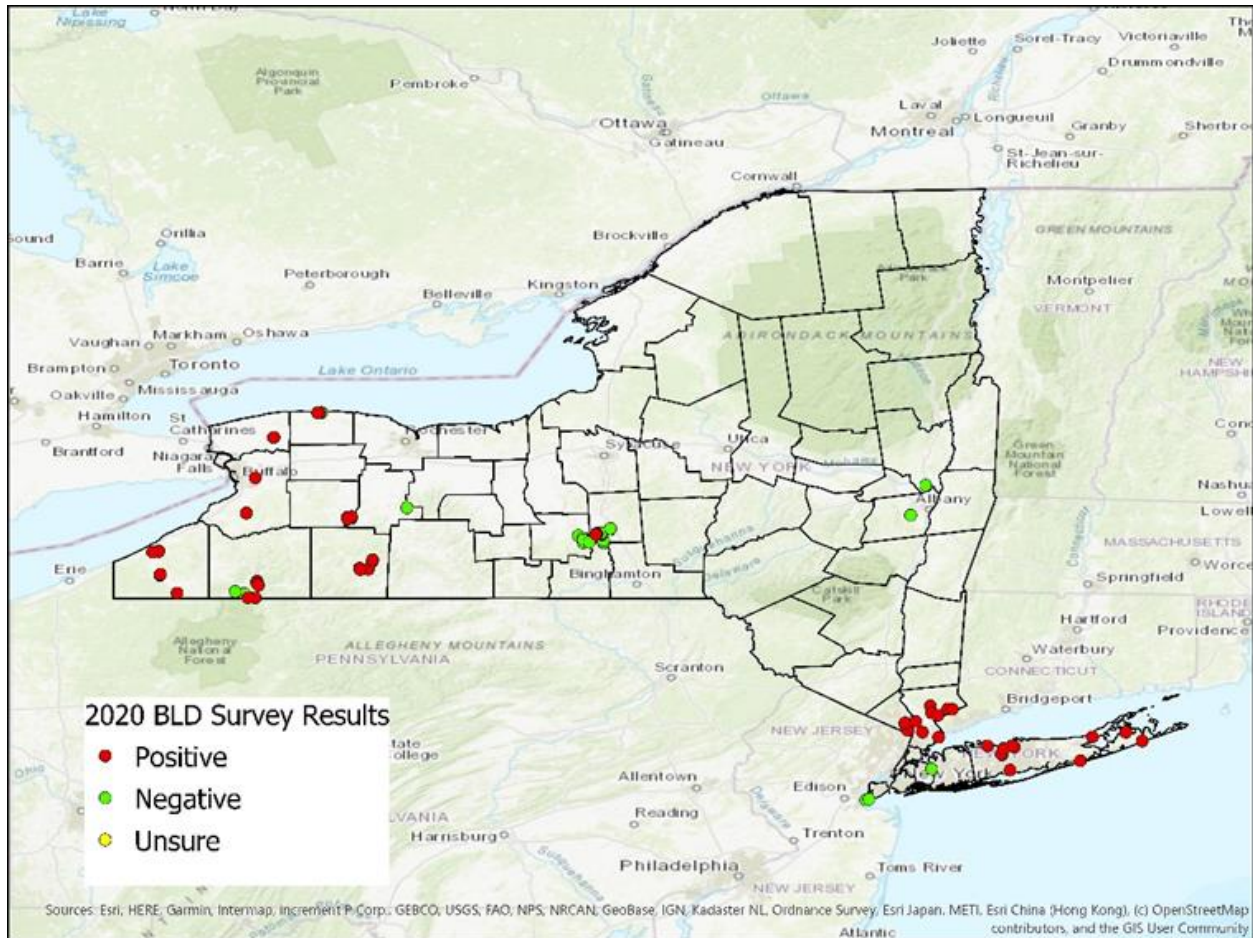


Figure 6 Map showing Beech Leaf Disease survey results in New York State.

Beech Leaf Disease (BLD) continues to spread across New York State. There was a large expansion of infested counties in Western New York, and a jump to Central New York. Downstate, an increasing number of symptomatic sites are found. New positive counties this year include Allegany, Niagara, Orleans, Wyoming, Livingston, and Cortland.

To help future management of BLD, detection surveys were conducted to map the spread. Samples were collected to confirm the presence of *Litylenchus crenatae mccannii*, a nematode species associated with BLD, in new counties, and to contribute toward research on the nematode's lifecycle. Traps were monitored to study beech-associated insect communities to research a possible insect vector, and plots were established in symptomatic and asymptomatic areas to track disease progression and mortality. Mitigation trials were conducted to study whether we can stop the spread of a small localized BLD infestation, and a web page was created and updated for the DEC website to provide information and inspire public reporting.



## Oak wilt

One oak wilt infection center was treated in Yates County in February 2020, removing seven infected and ten potentially root grafted trees. Aerial surveys and ground surveys have been conducted across the state, but no new infected trees were found this year. The state continues to maintain six active quarantine districts in Middlesex (Yates County), South Bristol (Ontario County), Canandaigua (Ontario County), Glenville (Schenectady County), Brooklyn (Kings County), and the whole of Suffolk County. DEC continues to research new detection methods such as trapping nitidulid beetles that spread the disease and testing them for the fungus. Seven beetle samples collected in 2019 from around previously infected areas were confirmed as carrying the oak wilt fungus, and 2020 samples are still being tested. DEC is also working with the New York-New Jersey Trail Conference's Conservation Dog Program to train dogs to "sniff out" oak wilt-infected trees. Both methods will help with surveys in 2021.



*Figure 7. Dia the dog training to detect oak wilt near Bristol, NY.*

## Invasive Plants

### Giant Hogweed

Giant Hogweed, a noxious invasive plant that causes a severe skin reaction, is present in 52 counties in the State. This was the thirteenth year of manual eradication and the twelfth year of herbicide use by DEC forest health and partner agency staff. Based on preliminary data analysis, there are currently 1,474 sites that previously had giant hogweed plants that had no plants in 2020 due to past control efforts;

496 of these sites were monitored in 2020 by DEC/partner agency crews. There are 1,193 known sites where giant hogweed plants are present; with the largest and densest of these found in the western half of the State. During the abridged 2020 field season (June through August) DEC/partner agency field crews prioritized smaller infestations where we could make the most impact. Crews controlled giant hogweed plants at 772 sites using manual and/or chemical control methods; 175 sites had flower heads removed. Our control methods have been very successful; 55% of all known sites now have no giant hogweed plants.

### Kudzu

Kudzu, a fast-growing invasive vine originally native to Asia, is present in 14 counties in New York State. Half of those counties are in the Hudson Valley, while the other half make up New York City and Long Island. DEC is aware of 204 unique sites based on property boundaries, or 80 unique geographical areas if neighboring sites are grouped together. Fourteen of those groups (57 sites) are found in the Hudson Valley, and those sites are controlled by partner agencies. The other 66 groups (147 sites), found in New York City and Long Island, are controlled by DEC crews. In the very condensed 2020 field season, we managed to visit 90 unique sites making up 50 unique groups. At the 58 sites where plants were found, a mix of manual and chemical control methods were used to combat the vines. At 28 sites a foliar spray was used and at 17 sites the cut-stump control method was employed. Manual control was used at 18 sites and a total of 148 root crowns were dug up and severed. At 32 separate sites NYSDEC crews found no kudzu vines growing. Sites with no plants continue to be monitored each year, until no plants are found for three consecutive years, at which point the site is considered eradicated. In the seven years since the kudzu control program began, 17 sites have been deemed eradicated in this manner.

### Forest Health Diagnostic Lab

The Forest Health Diagnostic Lab continues to provide insect and forest pathology diagnostic services to stakeholders of New York State, and promotes research and survey methods development within the various Forest Health programs. The lab supports outreach and education through its regular contributions to DEC Facebook and Twitter feeds and the Conservationist Magazine.

We also strive to build partnerships with academic research institutions in order to enhance our resources and expertise, leading to improvements in early detection methods and forest health management. We are currently working with Rutgers University to develop eDNA survey methods for terrestrial invasive species, starting with surveys for spotted lanternfly. In addition, the lab receives all specimens of SLF collected from statewide surveys and shares those specimens with various researchers for genetic studies. We joined the White Pine Alliance, led by The University of Maine, in 2018 and have committed to developing demonstration forests with DEC Region 6 to promote the use of silviculture in maintaining white pine health. We are working with the University of New Hampshire and the US Forest Service to characterize the natural red pine stands of New York and have just begun a region wide effort to identify our rich collection of trapping bycatch and develop a regional database of all trapping survey results. We are currently in the process of building a new rearing room at the lab, as part of a project through the U.S. Forest Service, in which stressed woody material is collected from urban areas and put in barrels for insect rearing.