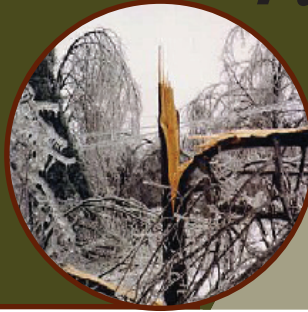


2008

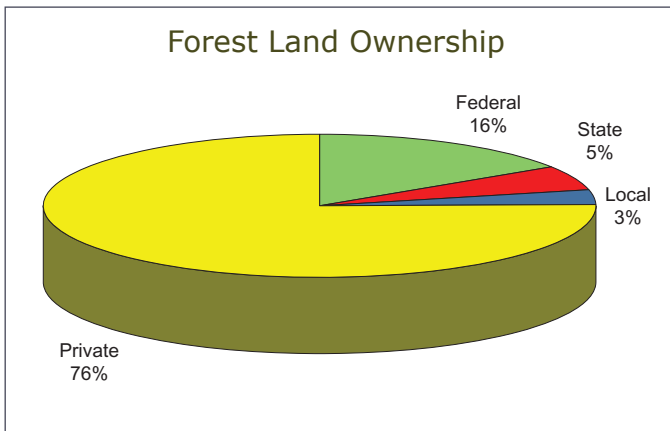
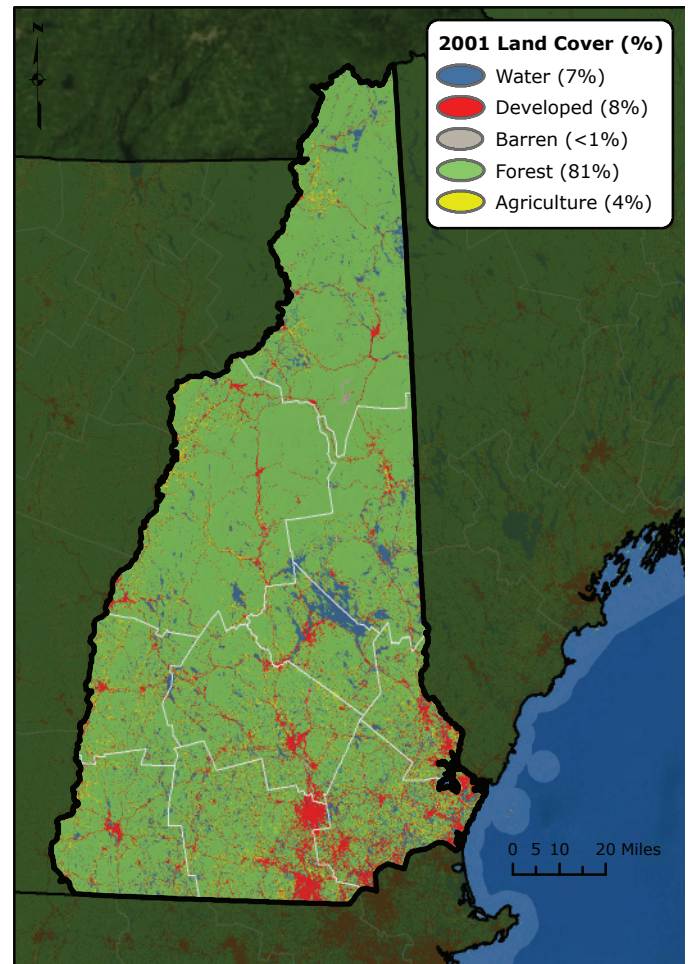
Forest Health

NEW HAMPSHIRE *highlights*



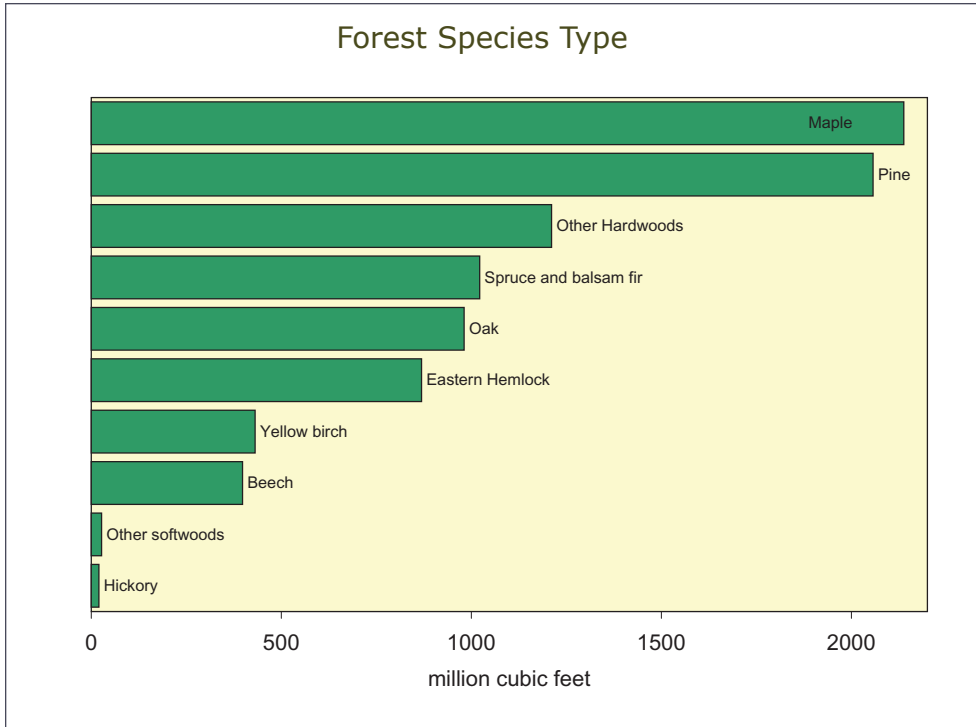
Forest Resource Summary

Approximately three-quarters of the forest land in New Hampshire is privately owned. Only 16 percent is in Federal ownership, which includes the White Mountain National Forest. The latest New Hampshire forest inventory estimates that 81 percent—approximately 4.8 million acres—of New Hampshire is forested. The forest resource is made up of a variety of forest types mostly comprised of maples, pine, other hardwoods, spruce and balsam fir, oaks, and hemlock. These forests provide a variety of goods including recreational opportunities, clean water, and wildlife habitat as well as paper and wood products. Keeping New Hampshire forests healthy enhances the quality of life for those who live, work, and recreate in the State.



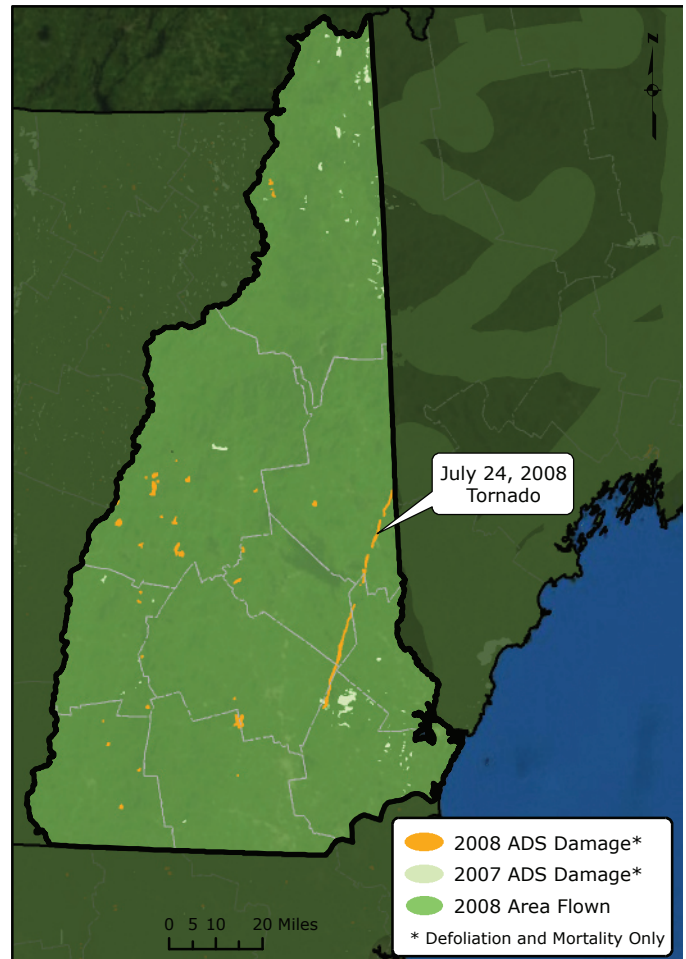
Forest Health Programs in the Northeast

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

Aerial surveys are conducted annually throughout the State. Over 24,000 acres of damage were mapped in 2008. Wind and tornado blowdown in the southeastern part of the State were the most significant causal agents of damage. Balsam woolly adelgid damage was reported on about 1,300 acres, and defoliation from the saddled prominent, variable oakleaf caterpillar, and oak leaftier totaled 1,150 acres. Logging damage was noted on over 2,600 acres, with sugar maple chlorosis and birch leafminer defoliation each occurring on about 1,000 acres. In contrast to 2007, there was no defoliation from the fall cankerworm and forest tent caterpillar in 2008.



This map delineates aerial detection survey (ADS) results for New Hampshire in 2007 and 2008.

Forest Damage

The most destructive forest damage in 2008 resulted from a **tornado** on July 24. The tornado was later analyzed and categorized as an “F2” storm. This tornado traveled 49.5 miles on the ground, damaging approximately 8,000 acres. The complete destruction of forests was contained to approximately 4,000 acres, and an estimated 30 million board feet of timber have been salvaged to date.



This aerial photograph shows the path of the July 24 tornado, which was approximately 1/4-mile wide by 49.5 miles long.

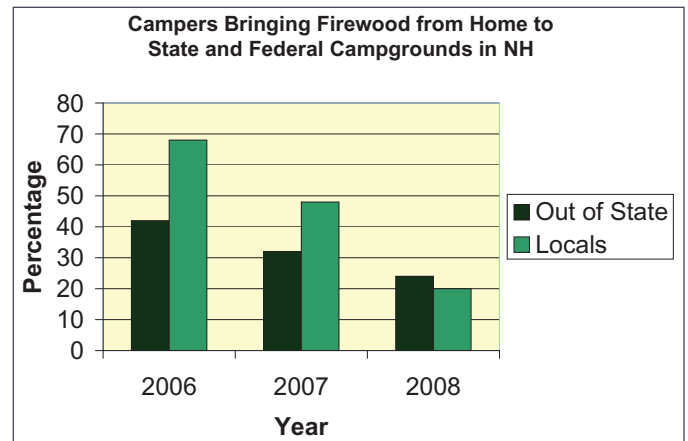
Elongate hemlock scale was discovered in New Hampshire for the first time in May 2008. The scale outbreak encompasses approximately 4 square miles in the Milford area. Small amounts of hemlock woolly adelgid have also been found in the same area. There are no easy control options for this scale outbreak.



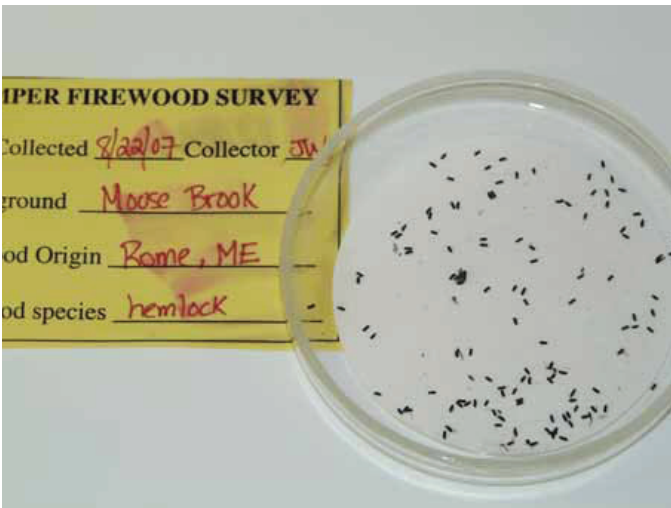
Many elongate hemlock scale white male nymphs cover the underside of hemlock needles in this photograph. High populations of elongate hemlock scale can look similar to hemlock woolly adelgid infestations.

The movement of **firewood** as a vector of damaging invasive forest pests and the findings of exotic pests in neighboring States has prompted additional surveys for exotic wood-boring pests. These pests include the Asian longhorned beetle, recently discovered in Worcester, MA, and the emerald ash borer (EAB), which is causing mortality in the Midwestern States. The State has been surveying for the Asian longhorned beetle since 1999. In 2008, EAB traps were placed throughout the State, and landscape trees were inspected at various retail locations. Neither of these exotic insects has been found in New Hampshire.

In 2006 a survey was conducted to determine how many campers were bringing firewood from home. An outreach program was subsequently begun to educate prospective campers about the risk of moving firewood long distances. Survey data in 2008 showed a substantial reduction in the percentage of campers hauling firewood.



In the summers of 2007 and 2008, the State Forest Health program started investigating which pests had already been accidentally moved in camp firewood. Firewood was voluntarily exchanged for native wood, and the confiscated material was placed in rearing barrels to overwinter any resident insects before being opened the following summer. Insects were fumigated and sorted after spending at least 6 months in the barrel.



A 30-gallon rearing barrel [top] was used to overwinter and hatch resident insects. The dish [below] contains a sample of the bark beetles that emerged in June 2008 after being in the barrels for 10 months.

Results from just 9 samples indicate there are a large number of insects traveling in firewood. These samples amounted to approximately 10 cubic feet of firewood and produced 8 different orders of insects. Most concerning were the 4 different species of bark beetles, one of which carries the oak wilt disease not yet known to exist in New Hampshire.

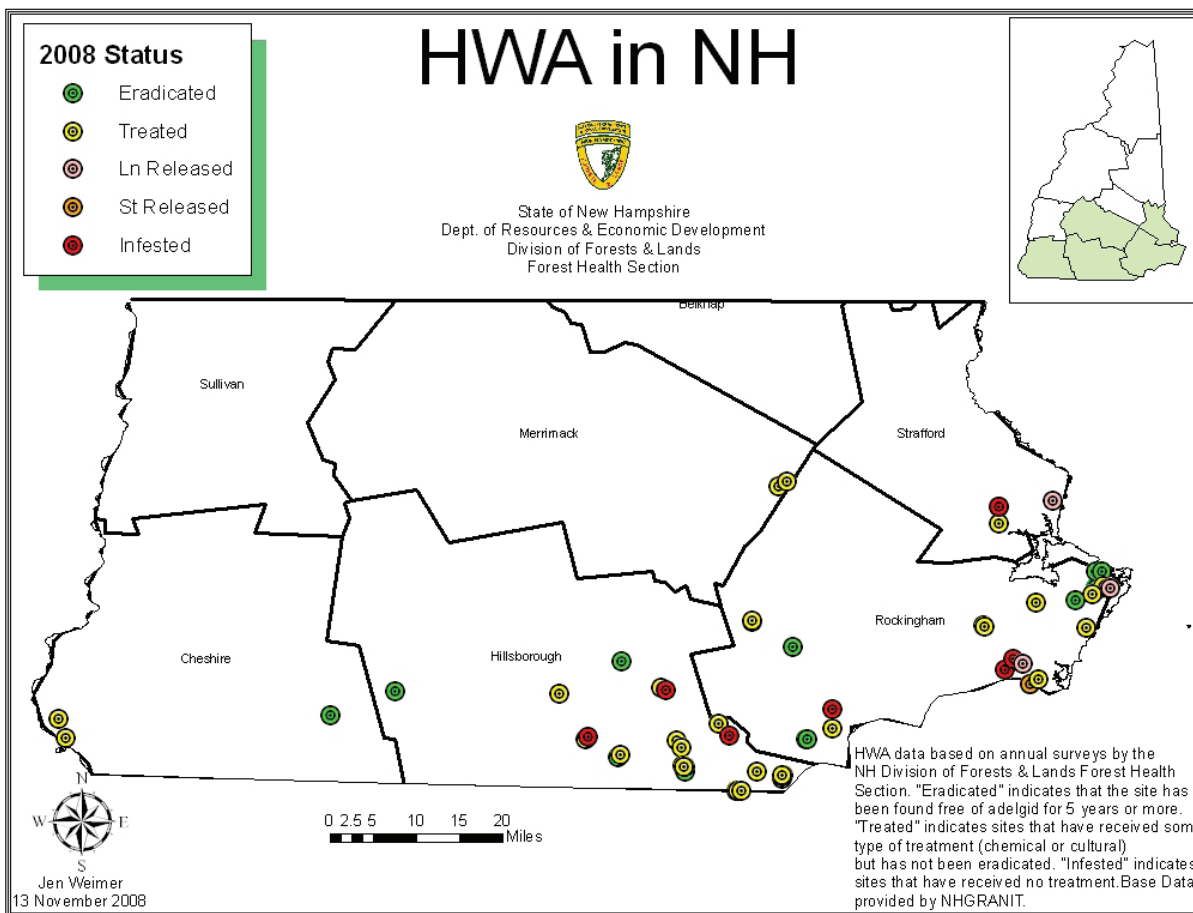
The exotic woodwasp *Sirex noctilio* was sampled using trap trees stressed by herbicides and mechanical girdling. Funnel traps were deployed and serviced every 2 weeks. Host trees used in this survey included jack pine, pitch pine, and red pine. Although several native cericids were captured, there were no *Sirex noctilio*. Several trap trees showing possible signs of wasp attack were cut and dissected. However, no signs of *Sirex* were found.



To trap the *Sirex* woodwasp, personnel made frills in trap trees and applied herbicides to the cambium in May.

Of the 40 towns surveyed for **hemlock woolly adelgid** (HWA) throughout the southern part of the State, new infestations were found in three towns—Auburn, Epsom, and Hinsdale. Numerous new infestations were also reported by landowners this year in towns such as Milford, Dover, Madbury, Pelham, and Hinsdale. The homeowner report in Milford led to the discovery of elongate hemlock scale on an abutting property that also had HWA.

The State has made suppression efforts using chemical and biological control methods to reduce adelgid infestations in selected areas. Smaller infestations on nine properties were treated with injections of imidacloprid. The State has also been implementing a biological control program by releasing 200 *Laricobius* beetles from Idaho and Washington in cooperation with the University of Massachusetts. *Laricobius nigrinus* is a predatory beetle native to the United States that may be more effective than imported predatory beetles.



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