

Elongate Hemlock Scale In NH



Jen Weimer
Forest Health Specialist
NH Division of Forests & Lands

Elongate Hemlock Scale

Fiorinia externa



Jen Weimer, NH Division of Forests & Lands

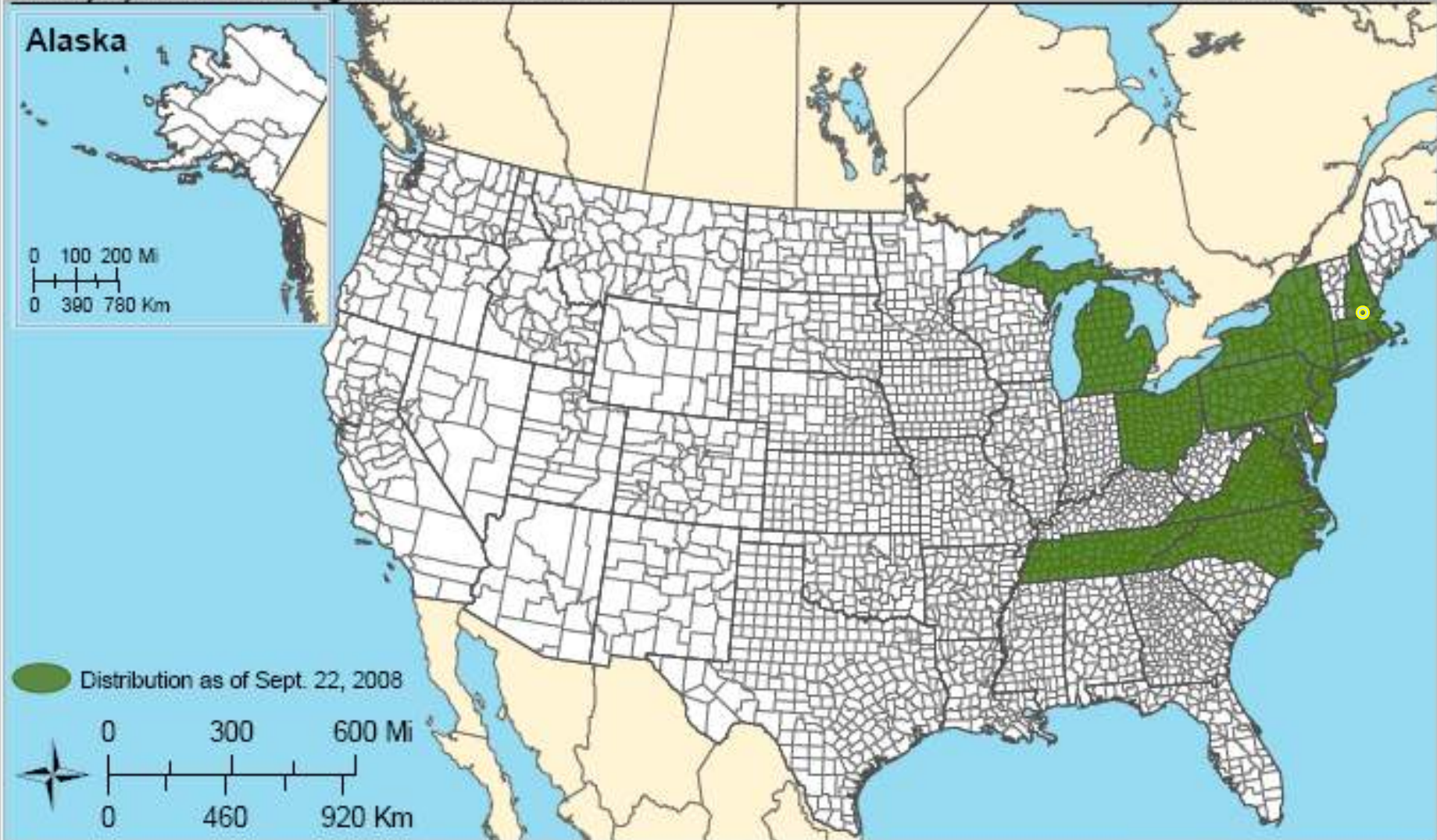
- Introduced into the United States from Japan.
- It was first observed in Queens, New York in 1908.
- Now Found in 13 states including New Hampshire



Alien Forest Pest Explorer

Pest Distribution Map Elongate Hemlock Scale *Fiorinia externa*

www.fs.fed.us/ne/morgantown/4557/AFPE/



USDA
Forest Service



Northern
Research Station

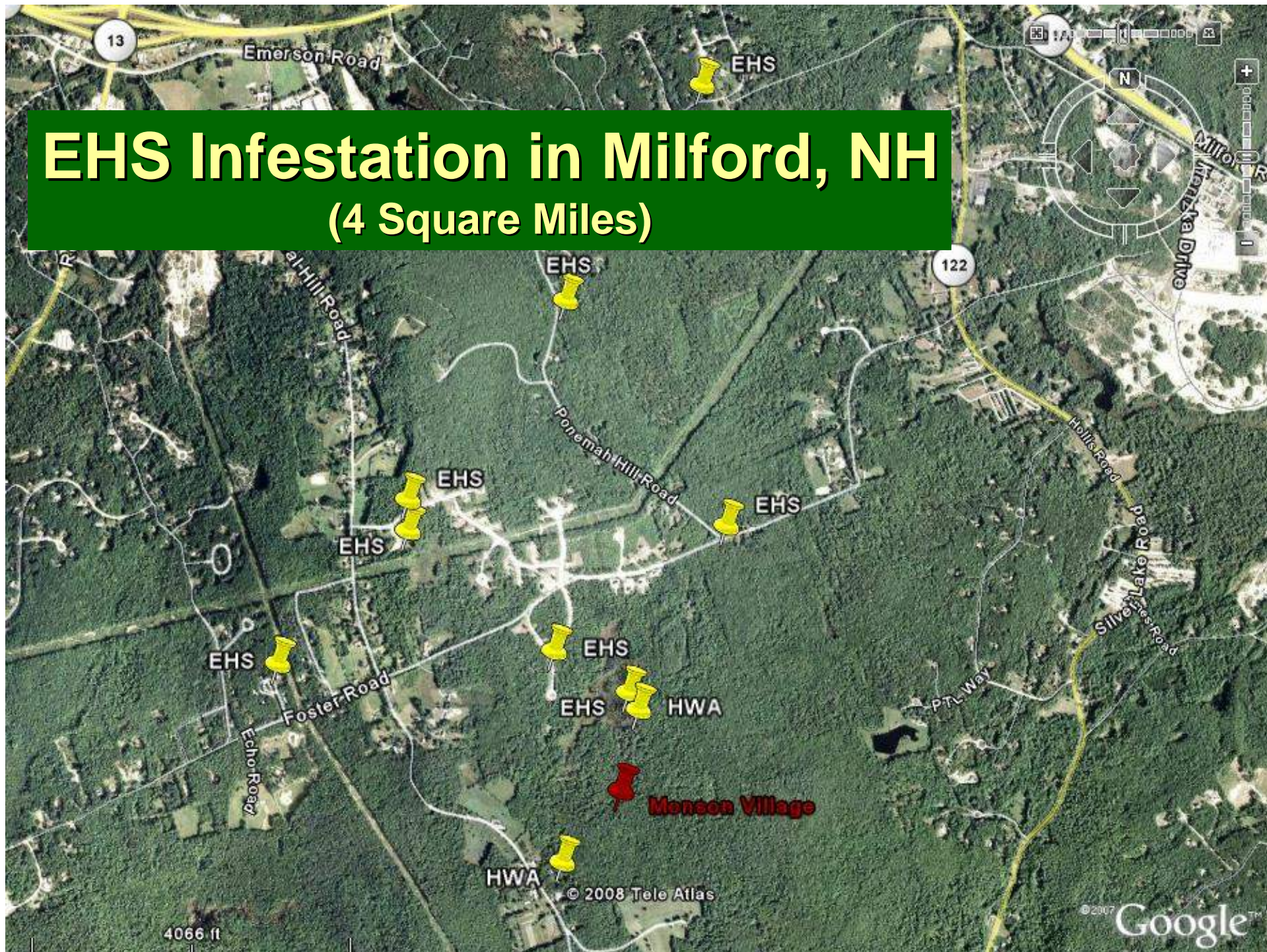


Forest Health Technology
Enterprise Team



RSAC
Remote Sensing
Applications Center

EHS Infestation in Milford, NH (4 Square Miles)



Location...Location...Location



NOTICE

Exotic Insect Infestation

Infestations of Hemlock Woolly Adelgid and Elongate Hemlock Scale have been found at Monson Village and the surrounding community. Both insects are new to NH and have caused extensive tree mortality in other states. We need your help to slow their spread.



Hemlock Woolly Adelgid

Elongate Hemlock Scale

⚠️ The white woolly masses of HWA are sticky and will attach to clothing. Please avoid touching infested hemlock trees and check your clothing for any presence of these insects prior to leaving the area.

⚠️ The insects are easily spread by birds. If you live in the area avoid hanging bird feeders near hemlock trees.

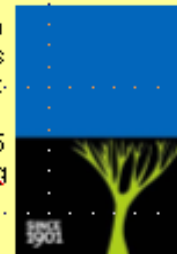
⚠️ If you see these insects in other areas please contact the Forest Health Office to report your find.

NH Division of Forests & Lands
Forest Protection Bureau
Forest Health Section



P.O. BOX 1856
Concord, NH 03302
603-464-3016
nhdfl.org

Society for the Protection
of New Hampshire Forests
54 Portsmouth Street
Concord, NH 03301
603-224-9945
forestsociety.org



EHS Hosts

- Preferred Hosts:
 - Canadian hemlock
 - Eastern hemlock
 - Carolina hemlock
 - Japanese hemlock
 - Fir
 - Spruce
- Other Hosts (usually only if adjacent to preferred hosts):
 - Cedar
 - Douglas-fir
 - Pine
 - Yew



Jen Weimer, NH Division of Forests & Lands

EHS Description & Life Cycle

- EHS overwinters as ADULT FEMALES or EGGS
 - Soft-bodied, legless, wingless, enclosed in an elongate cover that is light yellow to brown, translucent, and about 2mm long.
- ADULT MALES
 - Light brown, about 1.5mm long, have legs and wings, but are feeble-flying insects. The male cover is elongate, white, and about 1.5mm long.
 - Adult males die shortly after mating



EHS Description & Life Cycle



Pennsylvania Department of Conservation and Natural Resources

FIRST-STAGE NYMPHS

Crawlers that hatch from translucent eggs within the female cover that were laid in Spring. Crawlers are soft bodied, lemon-colored, and about 0.1mm long. They secrete a cover around themselves as they grow.

SECOND-STAGE NYMPHS

Enclosed in an oval, amber-colored cover, and are soft bodied, and vary in size from 0.1mm to 1.0mm.

Crawlers are the only stage capable of dispersing and establishing new infestations. Dispersal between trees is primarily by wind and birds.

EHS Damage

- Populations build slowly on healthy trees, quickly on stressed ones.
- Foliage turns yellow and drops prematurely.
- Dieback occurs after scale density reaches about 10 individuals per needle.
- Trees often die within 10 years.

EHS Control

- In ornamental plantings
 - horticultural oil during early spring, when trees are dormant and crawlers are present.
- In forests
 - declining hemlocks should be salvaged to prevent buildup and spread of scale populations.

Natural Predators

- The parasitoid, *Aspidiotiphagus citrinus* is effective in Japan, but in the northeast its life cycle is not synchronized with EHS.
- Two beetles: the twice-stabbed ladybird beetle, *Chilocorus stigma* and *Microweisea misella* also attack EHS, but not frequently enough to control scale populations.

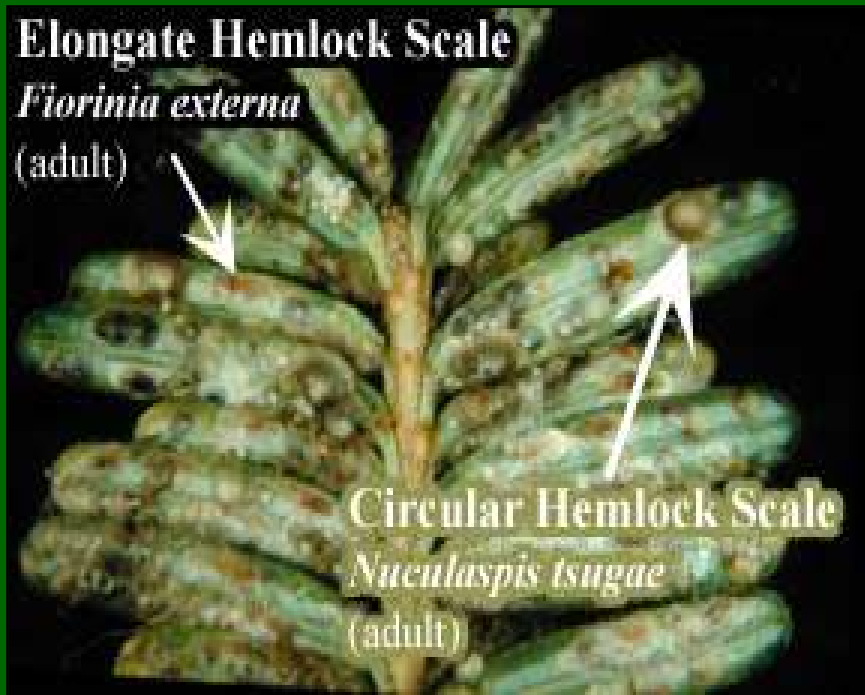


Natasha Wright, Florida Department of Agriculture and Consumer Services

Other Hemlock Scales

Exotic: *Nuculaspis tsugae*
formerly *Tsugaspidotus*

Native: *Abgrallaspis ithacae*



The Connecticut Agricultural Experiment Station

Pennsylvania Department of Conservation and Natural Resources

EHS is often found on trees also infested with HWA



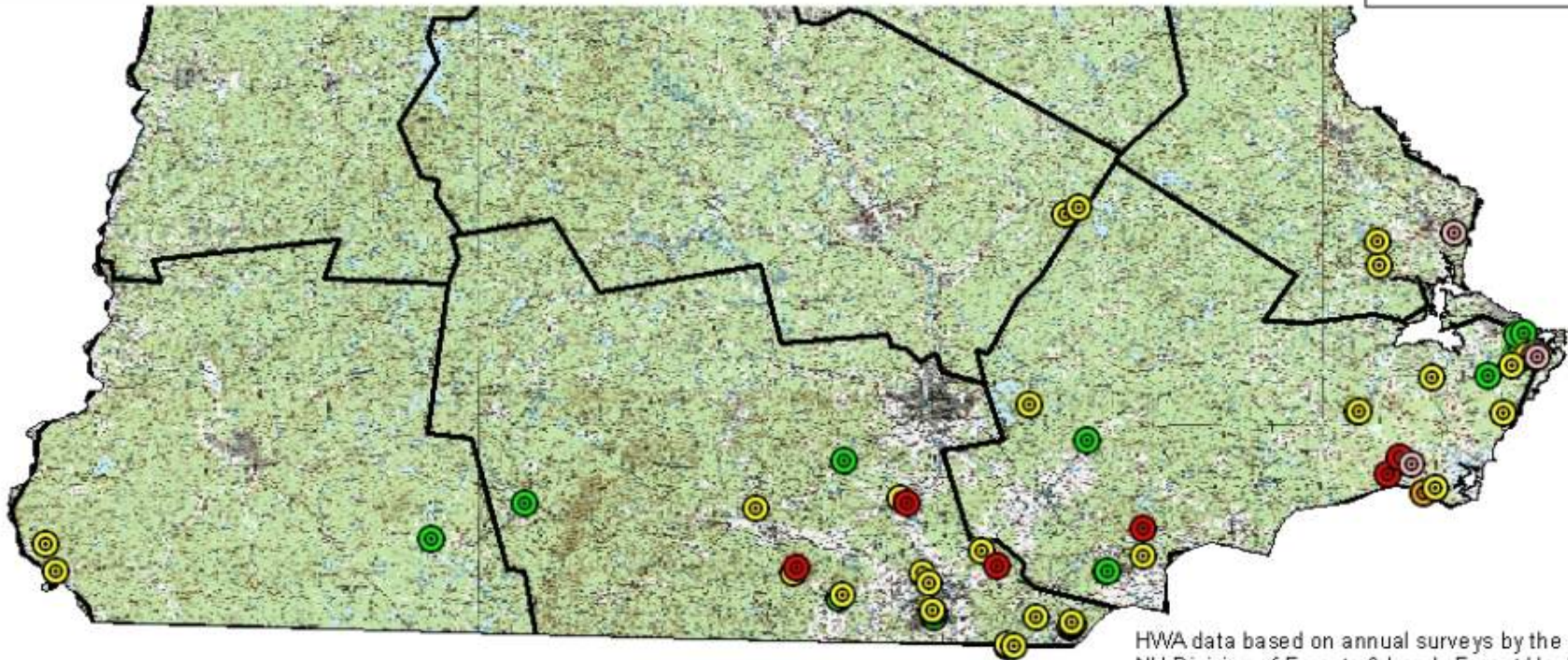
HWA in NH

2008 Status

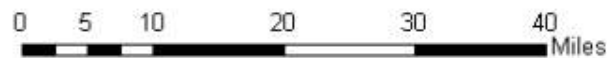
- Eradicated
- Treated
- Ln Released
- St Released
- Infested



State of New Hampshire
Dept. of Resources & Economic Development
Division of Forests & Lands
Forest Health Section



HWA data based on annual surveys by the NH Division of Forests & Lands Forest Health Section. "Eradicated" indicates that the site has been found free of adelgid for 5 years or more. "Treated" indicates sites that have received some type of treatment (chemical or cultural) but has not been eradicated. "Infested" indicates sites that have received no treatment. Base Data provided by NHGRANIT.





NH Department of Resources & Economic Development
Division of Forests & Lands
Forest Health Section

2008
Forest Health Highlights

- Elongate Hemlock Scale
- Hemlock Woolly Adelgid
- Asian Longhorned Beetle
- Emerald Ash Borer
- Tornado

PO Box 1856
Concord NH 03302
603-464-3016



NEWSLETTER.....NEWSLETTER.....NEWSLETTER.....NEWSLETTER.....

www.nhdfl.org/forest-health/

jweimer@dred.state.nh.us

603-464-3016