



Eastern Hemlock

Identification and Look Alike Guide



The eastern hemlock also known as Canadian hemlock, is a coniferous tree in the pine family. Highly shade tolerant, eastern hemlock is found naturally in moist forest environments and along streams and water bodies.

Needles are about $\frac{1}{2}$ inch long, flat, dark-green on top with two parallel, white stripes underneath. Needles are attached to twigs by small stems.



Cones are papery and small, about $\frac{3}{4}$ inch long, and hang downward from branches. Cones can remain on trees for several years.

Needles grow singly (not in clusters) from the sides of twigs, giving the branch a flat appearance.





Hemlock Woolly Adelgid

Identification and Look-Alike Guide

Hemlock Woolly Adelgid (HWA)



HWA is an invasive species that infests hemlock. In spring and fall, adults create ovisacs resembling the tips of cotton swabs to protect their eggs.

One or more distinctive round, white ovisacs of HWA will be found at the base of hemlock needles on a single twig.



Outside of their ovisacs, hemlock woolly adelgids are nearly impossible to see without a magnifier.

HWA feeds on the tree's stored starches, which are critical to the tree's growth and long-term survival. In trees with heavy infestations, needles become dry and grayish or brown, and drop off. If untreated, HWA will cause tree death.



Balsam fir

Hemlock look alike - see the differences



Balsam fir

is cone shaped, grows to 65 feet tall and has a narrow, spire-like top.



Needles are about $\frac{3}{4}$ inch long, flat with two white stripes on the underside. Needles have a broad, roundish base or suction cup attachment to the twig.



Cones are 2 to 4 inches long and point upward. Seeds drop in the fall, leaving disintegrated cones or just central stalks on branches.

Needles grow singly and are attached in a spiral around the twig. Needles point upward, sometimes making the branch look flat.





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Oak skeletonizer cocoon



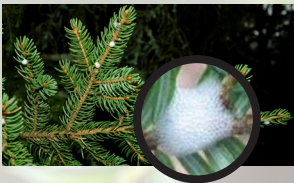
Oak skeletonizer is a native insect that occurs throughout the Great Lakes region. The larval stages feed on the leaves of several species of oak trees. Oak skeletonizers form white cocoons resembling ribbed grains of rice that may be found on branches, limbs, leaves or needles of any trees, or on nearby structures.

Elongate hemlock scale



Elongate hemlock scale is an invasive pest of the eastern hemlock. Hemlock scale crawlers create waxy secretions that build into a mass, giving the lower surface of infested needles a white appearance.

Spittlebug nymphs



Spittlebug nymphs cover themselves with a protective frothy material that looks like human spittle. Immature spittlebugs are readily recognized by the frothy white mass that surrounds them.

Douglas fir

Hemlock look alike - see the differences



Douglas fir

is cone shaped, with the ends of its branches pointing upward. It grows over 100 feet tall.



Needles are 1-1 ½ inches long, flat and grooved on the upper surface, ending in a soft point. The undersides have a white stripe on each side of a prominent mid-rib. Needles have a suction-cup attachment to the twig.



Cones are 1 to 4 inches long and point downward. Look for an upward-facing 3-pointed bract at the end of each scale.

Needles grow singly and are spiraled around the branch like a bottle brush.





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Spider egg sac



Each species of spider creates a unique egg sac, so the shape and texture may vary. One or more spider egg sacs may occur randomly on branches or twigs and usually extends onto the needles' surface. Egg sacs can be pulled apart easily.

Hemlock needle miner



Hemlock needle miner caterpillars have a pale, yellowish-green body with an orange brown head. Caterpillars feeding on eastern hemlock trees leave a cluster of translucent, light brown needles tied loosely with silk.

Mealybugs



Mealybugs attach to plants to feed on sap. Once attached, the insect secretes a powdery wax layer. Mealybugs can be found on needles, leaves or branches of many plant species. Mealybug movement may be visible.

Canada Yew

Hemlock look alike - see the differences



Canada yew

is a low-growing, multi-stemmed shrub reaching 6 feet tall.



Needles are $\frac{1}{2}$ to 1 inch long, dark green on the top with a pale underside showing a prominent midrib and two light stripes. Needles are sharply pointed and attached by a short stem.



Fruit is a cup-shaped, berry-like cone called an aril, up to $\frac{3}{8}$ of an inch long, which turns red in the fall and contains a single seed.

Needles grow singly and are spiraled around the branch but twist toward the outer sides, making the branch appear flat.





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Spider mites



Spider mites suck the phloem sap from the hemlock, leaving tiny, yellow or white speckles and causing foliage to yellow, wilt, and fall from the tree prematurely.

Other possible look-alikes

- Hydro-seed mulch
- Snow
- Drops of pine sap
- Wool from white pine aphids
- Beech blight aphids
- Beech scale from neighboring tree

If you believe you have found hemlock woolly adelgid:

- Take pictures of the infestation and note the location.
- Contact the Michigan Department of Agriculture and Rural Development at:
1-800-292-3939 or
MDA-Info@michigan.gov or
- Report the infestation through the Midwest Invasive Species Information Network at: MISIN.MSU.edu

For more information please visit Michigan's hemlock woolly adelgid web page at: Michigan.gov/HWA

