

# PEST ALERT



State of New Hampshire  
Department of Resources and Economic Development  
**Division of Forests and Lands**  
**Forest Protection Bureau—Forest Health Section**

**ELONGATE HEMLOCK SCALE**  
*Fiornia externa*

Elongate hemlock scale (EHS) is an exotic scale insect that prefers to feed on hemlock, spruce and fir. Cedar, Pine and Yew have also been found infested, but usually only if adjacent to preferred hosts. This insect was introduced to New York in 1908 from Japan and has since spread north to Maine and south to North Carolina. Left untreated EHS can kill trees within 10 years. EHS can also be found on trees infested with Hemlock Woolly Adelgid (HWA). EHS populations build slowly on healthy trees but more quickly on trees that are stressed by HWA, drought, or other factors.

**Description:** This insect can be recognized by the presence of dry crusty yellowish-brown (female) or white (male) elongated scales and a white woolly substance similar to HWA. EHS attaches to the needles while HWA attaches at the base of the needles on the stem.



Elongate Hemlock Scale



Hemlock Woolly Adelgid

**Life Cycle:** EHS completes two generations a year in southern states but typically only one in the northeast. Adult females are soft-bodied, legless and wingless and lay roughly 20 eggs under a scale cover. Hatched crawlers settle on the lower surface of young hemlock needles to feed. First and second-stage nymphs secrete a cover as they grow and molt. Second-stage females molt into an adult feeding stage while second-stage males molt into a non-feeding prepupa and spin a cocoon before pupating into an adult. Adult males have legs and wings but do not feed and die soon after mating.

**Cultural Control:** Because birds, squirrels and deer are important dispersal agents, any effort to discourage these animals from visiting host trees—such as removing bird feeders in the spring and summer—will reduce the risk of those trees becoming infested. Care should also be taken when moving any host material from infested areas onto uninfested property.

Maintaining good growing conditions can play an important role in the survival of infested trees. During periods of drought, important ornamental trees should be watered to ensure that they receive 1 inch of water per week (including rainfall) over the area beneath the dripline of the crown. Apply water slowly to allow uptake by the tree. Pruning and reducing crowding of target trees may encourage new shoot growth and help support vigor. Although fertilizer may improve the growth and vigor of uninfested trees, the added nitrogen also enhances scale survival and reproduction—*do not fertilize host trees in or near scale infested areas.*

**Chemical Control:** Chemical control is an important part of managing the health of EHS infested ornamentals. It is important to understand that periodic treatments will be necessary over the life of the infested tree to maintain its health and value as an ornamental. The initial decision of whether to use chemicals should weigh the value of the trees relative to the anticipated cost of long term treatments. Consider identifying individual trees or groups of trees that have special value or significance on the property and concentrating control efforts on those trees. Several pesticides are registered for control of EHS. Some are available for homeowner use, while others are available for commercial use only by a licensed pesticide applicator. Horticultural oils can be sprayed on the foliage but penetrating the scale and attaining complete coverage can be difficult. Oils may also kill natural predators leading to heavier populations of scale and other damaging insects such as spider mites. Systemic insecticides with the active ingredient dinotefuran can be effective when applied as a spray on the stem. Systemic insecticides with the active ingredient imidacloprid can also be applied as a soil drench or soil injection but may be less effective.

*Caution: For your own protection and that of the environment, apply pesticides only in strict accordance with laws, labels and precautions. Special care should be taken near water when using these pesticides.*

More information on Forest Pests in NH: <http://nhdfi.org/forest-health/>