

## FRASER FIR IPM 2020 – PEST FACTS AT A GLANCE

### ELONGATE HEMLOCK SCALE

*Fiorinia externa*

**Where from:** Japan

**Host plants:** Hemlocks, firs, Douglas fir, blue spruce, Atlas cedar, occasionally other conifers

### SYMPTOMS

- Occasional mottling on foliage



- White from male scales



### Important cultural practices:

- Don't interplant
- Remove large hemlocks or treat them for scale
- Cull heavily infested trees
- Don't overuse nitrogen fertilizers
- Limit use of broad spectrum insecticides
- Butt-prune trees for better spray coverage

**Scouting:** Look for mottling or white from males whenever in trees. Thoroughly scout any time of year by scanning underside of needles for scales.

### Control considerations:

- Control with pesticides difficult as crawlers hatch throughout the year
- Good coverage is essential – targeting underneath needles and back into canopy to wet several years of growth

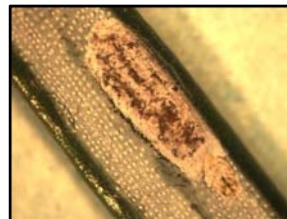
### LIFE CYCLE

**How overwinters:** All life stages

**# generations/year:** Multiple overlapping, non-synchronous generations – approximately 16 weeks to go from crawler to adult producing crawlers



Males white – females brown – nymphs yellow



**Top left:** Adult female

**Top right:** Female flipped over showing eggs

**Bottom left:** Adult male on needle

**Bottom right:** Crawler

### Biological control:

The parasitic wasp leaves hole in scale when it emerges



Small black lady beetles, lacewing larvae and dusty wing adults and larvae also feed on scales.