

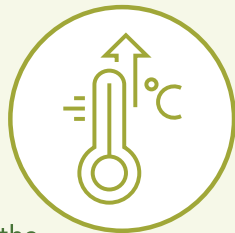
CHRISTMAS TREE Insects – Balsam Woolly Adelgid

Warmer temperatures, increased rainfall, and more intense storms are creating conditions that favor pest survival and reproduction. Nova Scotia Christmas tree growers are already familiar with balsam woolly adelgid (BWA, *Adelges piceae*), a pest that exclusively targets true firs. While BWA is not new to the industry, its impacts are expected to increase in a changing climate.



Managing for BWA is essential because this pest can cause severe damage to balsam fir (*Abies balsamea*) Christmas trees. Effective management can prevent tree mortality, maintain tree quality, and ensure the sustainability of the Christmas tree industry in Nova Scotia.

Key Climate Change Impacts



Temperature

Increases: Warmer temperatures enhance the survival and reproduction rates of BWA, leading to more severe infestations. Sites with seasonally warmer temperatures tend to demonstrate higher degrees of insect-induced forest degradation.

Precipitation Changes: Increased rainfall can create favorable conditions for BWA and other pests, while hotter temperatures may cause drought stress for trees, making them more susceptible to infestations. The combination of warm temperatures and adequate moisture can accelerate the growth and spread of BWA populations.

Extreme Weather: Stronger storms and wind can damage trees, making them more vulnerable to pest attacks.

Key Adaptation Strategy

Integrated Pest Management (IPM) monitoring:

- BWA can be identified by the presence of tiny (1-2 mm) white cottony tufts on the bole or branches of infested trees. These tufts conceal amber-colored eggs and stationary feeding adults, which are dark purple and nearly round.
- BWA damage appears as swelling at bud and branch nodes (twig attacks), or on the main stem of the tree in extreme cases (stem attacks).
- Damage leads to stunted growth, crown and top damage, and fiddle-shaped crowns.

Integrated Pest Management (IPM): Biological controls and judicious use of chemical treatments can help manage BWA populations.

Forest Management: Thinning tree stands to improve airflow and reduce moisture, and diversifying tree species can reduce the risk of widespread pest outbreaks. Removal of overmature and susceptible balsam fir will also aid in reducing outbreaks of BWA.

Climate-Resilient Practices: Planting resilient tree species and varieties, maintaining healthy soil, and proper irrigation can improve tree health and resistance to pests.

Guide to Pest Management in Christmas Trees



Perennia/CTCNS BWA factsheet

