



The Amber-Marked Birch Leafminer: An Introduced Insect Threatening Alaska's Urban and Native Birch Forests

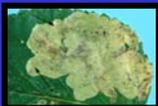


Leafminer Damage

Amber-marked birch leafminer defoliation occurs late in the growing season. Damage to birch is not considered severe. However, due to this recent introduction and rapid spread of this defoliator, systemic pesticide use in the Anchorage bowl has significantly increased.



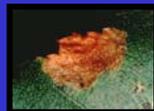
P. thomsoni galleries (large blotches) and larvae are readily distinguishable from those of *F. pusilla* and *H. nemoratorus*



P. thomsoni



F. pusilla



H. nemoratorus



Four species of birch leafmining sawflies were accidentally introduced into North America in the early 1900's. Three of the four leafminer species somehow made their way to Alaska in the mid-1990's; probably on imported ornamental birch, soil, or as "hitch-hiking" adults. These three species (*Profenusa thomsoni*, *Fenusa pusilla*, and *Heterarthrus nemoratorus*) have spread to native Alaska birch. *P. thomsoni*, the Amber-marked birch leafminer, is the most common species and infestations now cover more than 32,000 acres in the Anchorage bowl. *P. thomsoni* has also been detected near Fairbanks in interior Alaska and Haines and Skagway in southeast Alaska.

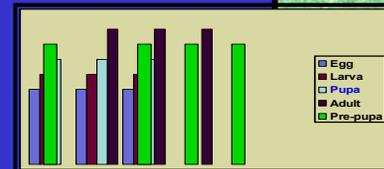


Birch leafminer populations are rapidly spreading north and south of Anchorage due to availability of host material and absence of biological controls.



Amber-marked birch leafminer life cycle

Amber-marked birch leafminers have a 1-yr. life cycle with the pre-pupae as the over-wintering stage. Adult sawflies (almost always females) emerge from the soil from early July through August. *F. pusilla* and *H. nemoratorus* have similar life cycles



June July Aug Sept Oct-May

One birch leaf can support 5 larvae to maturity. During intense infestations, as many as 15 larvae can be seen feeding in one leaf. However, the majority of larvae in a heavily infested leaf will die due to competition effects.



Biological Control Program

The objective of this program is the release of an effective parasite. An ichneumon wasp, *Lathrolestes luteolator*, quickly and effectively controlled the Amber-marked birch leafminer outbreak in Edmonton Canada. This wasp is native to the lower 48 and Canada but not Alaska. A cooperative biological control program (USDA Forest Service, FHP, Alaska Region; USDA APHIS; Canadian Forest Service; University of Alberta; Municipality of Anchorage; and State of Alaska, Division of Forestry) was initiated in 2003.



USDA APHIS recently granted the permit for the importation of *L. luteolator* into Alaska. The collection of *Lathrolestes* adults from the Northwest Territories of Canada was undertaken in 2003. Parasites are over-wintering in Canada. Parasites will be shipped to Anchorage in the summer of 2004 and released. Life table studies and evaluation of parasite establishment and spread will be undertaken in 2004 & 2005.



Additional information is available from Ed Holsten, 907.743.9453 or eholsten@fs.fed.us or from the Alaska Region Forest Health Protection web-page <http://www.fs.fed.us/r10/spt/fhp/>

