

FOREST *Update* HEALTH

Region: Northeast

Work area: Sudbury, North Bay and Kirkland Lake districts

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The following is a forest health update for Sudbury, North Bay and Kirkland Lake districts.

This edition describes and summarizes weather events, forest insects and forest diseases affecting the health of the forests in these districts during the spring of 2013.

Weather

The Northeast Region experienced lower than normal average monthly temperatures in the spring of 2013 causing a delay in the development of lush full crowns. In particular, pockets of trembling aspen trees (*Populus tremuloides* Michx.) in the northern region of Sudbury District experienced a delay in foliation causing a thin crown with smaller leaves than normal for early spring. The thin crown looked very similar to insect defoliation at the time, however as June progressed and daily temperatures increased in the region, the foliage size increased closer to normal. These conditions have also been noted in Sault Ste. Marie and Chapleau districts.

Forest insects

Gypsy moth, *Lymantria dispar* (Linnaeus)

In 2012, gypsy moth was prevalent within the City of Greater Sudbury and surrounding areas causing moderate-to-severe defoliation on 8,123 ha in Sudbury District. This past spring, gypsy moth was found within the City of Greater Sudbury at the Lake Laurention Conservation Area and around Lake Ramsey and Lake Nepahwin. The defoliation was observed as far west as Lively and as far east as Wahnapiatae. It has also ranged north to Garson and as far south as Estaire. The insect has been feeding predominantly on white birch (*Betula papyrifera*), but has also been found on trembling aspen, red oak (*Quercus rubra*), and willow (*Salix spp.*).

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Figure 1. Gypsy moth larva feeding on white birch in Sudbury District. Photo: V. Chaimbrone, Ministry of Natural Resources.

Defoliation has been moderate-to-severe, and the insect continues to feed at this time. In early spring small gypsy moth larvae were found in and around Bass Lake on Manitoulin Island, Sudbury District.

During ground surveys a large number of dead larvae were found on red oak trees just west of Sudbury in Waters Twp, off of Moxam Landing Road. It appears that a fungus specific to gypsy moth called *Entomophaga maimaiga* is causing this extensive larval mortality.

Small populations of gypsy moth have also been seen in Cobalt in Kirkland Lake District, as well as Magnetawan in Parry Sound District; areas will continue to be monitored. Aerial mapping of the Northeast Region is scheduled for mid-July when defoliation is at its peak and gypsy moth has finished feeding.

Jack pine budworm, *Choristoneura pinus* Free.

Jack pine budworm was first mapped in the Northeast region in Sudbury District in 2004, and has since spread south into the Parry Sound District causing moderate-to-severe defoliation since 2005. In 2012, 4,356 ha of moderate-to-severe jack pine budworm defoliation was mapped in Sudbury District and 44,708 ha in Parry Sound District. In 2013, pre-flight ground sampling indicated low populations around Magnetawan and Britt. The jack pine in these areas had heavy flowers and appeared to have little defoliation. Aerial mapping of the northern portion of Parry Sound District is scheduled for mid-July and will confirm any jack pine budworm defoliation in 2013.

Large aspen tortrix, *Choristoneura conflictana* (Walker)

Large aspen tortrix larvae feed in the expanding leaves by rolling, folding and tying them together for feeding sites. Thin crowns with rolled leaves in both young growth and semi-mature trembling aspen were seen along Hwy 553 north of Chutes Provincial Park, Sudbury District, and on Hwy 11 at White Clay River, Kirkland Lake District. The infested trees along these main roads had light-to-moderate defoliation.



Figure 2a. Satin moth larva feeding on young European poplar leaf. Figure 2b. Defoliation on a hedgerow of poplar in Walford along Hwy 17. Photos: V. Chaimbrone, Ministry of Natural Resources.

Satin moth, *Leucoma salicis* (L.)

Satin moth, an insect introduced from Europe, prefers feeding on ornamental poplars used for hedgerows in both urban and rural settings. Satin moth was found in the south end of the City of Greater Sudbury along Regent Street, feeding on European white poplar (*Populus alba* L.) and caused 80 per cent defoliation on all young growth. The insect also caused moderate to severe defoliation on both European and Carolina poplar (*Populus xcanadensis* Moench cv. *Eugenei*) in Nairn Centre, Garson and in the town of Walford, within Sudbury District.

Spruce budworm, *Choristoneura fumiferana* (Clem.)

In 2012, aerial surveys confirmed spruce budworm caused moderate-to-severe defoliation in the Northeast Region (98,855 ha) and into Parry Sound District, Southern Region (943 ha). In early June 2013, spruce budworm larvae were found across Sudbury and North

Bay districts when completing branch sampling at spruce budworm pheromone trap locations. Larvae were found mining within needles in the upper crown of white spruce (*Picea glauca*) and balsam fir (*Abies balsamea*). Defoliation was seen in early July in Greenwood Provincial Park south of Latchford, and larvae, pupae, and moths were present at this location. Moderate –to-severe defoliation, prominently on balsam fir, was also seen on Silverfields Road, south of Cobalt. Aerial surveys and ground checks will confirm the range of defoliation and any new mortality.

Forest diseases:

Dutch elm disease, *Ophiostoma novo-ulmi* Brasier

Dutch elm disease infected white elm (*Ulmus Americana* L.) in the 2012 season and in previous years, causing widespread tree mortality and decline in the North Bay District. Areas around agricultural fields, train tracks, and rivers in Warren and Verner, Feronia, and Loring have been affected by this disease over many years. In 2013, new trees affected by the disease were seen north and south of Hwy 17 in Warren, as well as in Field. The recently affected elm trees showed flagging or discolouration (orange and yellow) and leaf drop.

Western gall rust, *Endocronartium harknessii* (J.P. Moore) Y.Hirats.

Western gall rust, evident from the bright orange fruiting visible in galls, continues to appear on jack pine (*Pinus banksiana* Lamb.) in the Northeast region. During annual jack pine health plot surveys, western gall rust was commonly seen in jack pine stands. Most of these infections were new in 2013 and they had not killed any branches. The gall rust was fruiting for a longer period of time this year. Usually by the beginning of June the bright orange spores have all but disappeared, but in 2013 they were still holding on at the end of June. Semi-mature jack pine trees along Hwy 553 north of Massey, Sudbury District were infected with 10 to 30 per cent of branches showing galls and flagging. The disease was also present in the Kirkland Lake District, at the Adie jack pine seed orchard north of Englehart. The site was severely infected with gall rust on 80 to 90 per cent of jack pine trees.

White pine blister rust, *Cronartium ribicola* J.C. Fisch

White pine blister rust surveys were conducted in tree improvement areas in North Bay and Kirkland Lake



Figure 3a. Spruce budworm larvae feeding on newly developed shoots of white spruce (*Picea glauca*). 3b. Spruce budworm pupae development in early July. Photo: V. Chaimbrone, Ministry of Natural Resources.



Figure 4a. Western gall rust fruiting bodies found on jack pine north of Massey. 4b. Mortality of branches with galls or “flagging” is visible in the crown of an affected tree. Photo: V. Chaimbrone, Ministry of Natural Resources.

districts in early June. The Evanturel test site in Evanturel Twp., Kirkland Lake District, had the highest rate (13 per cent) of severe infection (fruiting bodies on the main stem) of the surveyed trees within the plantation. Other damage to the trees was noted as part of the survey including snow damage (two per cent), winter drying (three per cent) and porcupine damage (29 per cent). It is suspected that the animals prefer to feed on ripe fruiting bodies in the spring, therefore this damage may be correlated with new blister rust infection. At the Gurd test site in Gurd Twp., North Bay District, less than one per cent of trees surveyed were found with severe infections. The Eby test site in Eby Twp., Kirkland Lake District, had no blister rust, however 47 per cent of the trees suffered from winter drying, but at relatively low levels.



Figure 5: Severe porcupine damage on young white pine plantation tree. Photo: V. Chaimbrone, Ministry of Natural Resources.

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