Forest Tent Caterpillar Egg Mass Survey

How to Rate the Risk of Defoliation in a Sugarbush

Background: We evaluate the risk of defoliation by counting overwintering egg masses, which are laid on twigs throughout the tree. If there was defoliation last year, some of the egg masses you see may contain viable eggs, while the ones that hatched last spring are empty.

When to Look: Anytime after the leaves have fallen.

Equipment Needed: Spotting scope or high-quality binoculars

What To Do:

1. Make sure you know what forest tent caterpillar egg masses look like. Through binoculars, it can be easy to confuse them with two buds growing across from each other. (Figure 1)
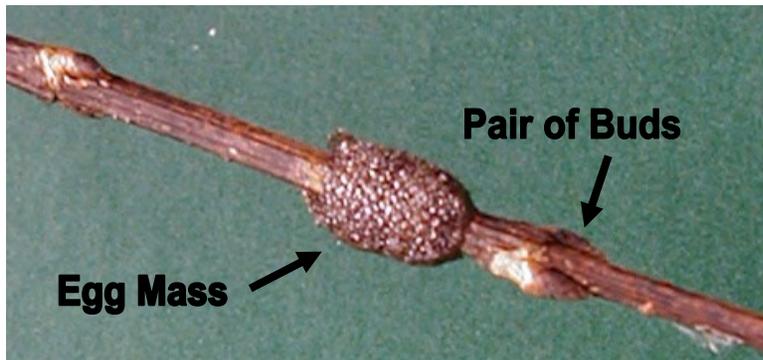
Figure 2

Figure 1

2. Select ten sample trees which are representative of the sugarbush. Usually, you'll want to look at trees along a path between the top of the hill and the bottom.

3. On each sample tree, count all the egg masses on ten branches. What's a branch? Start at any tip. Estimate a 30" length from that tip towards the trunk. (Figure 2). Record the number of egg masses you seeon the data sheet provided.
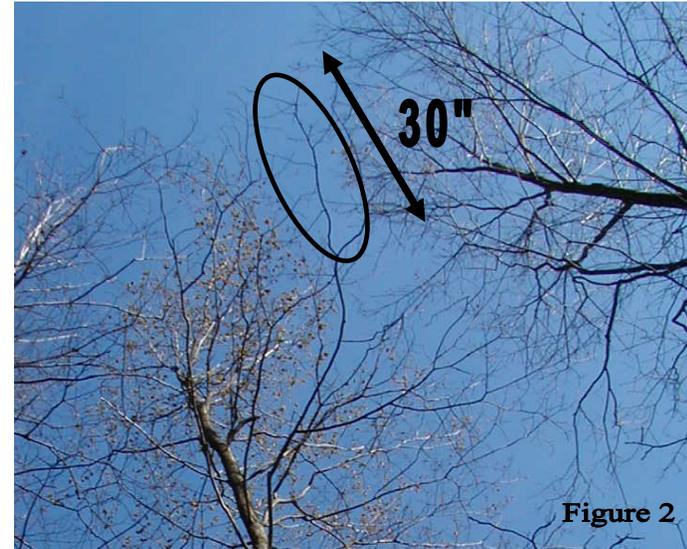
4. If there was defoliation last year, look for egg masses on branches you can reach. Determine what percent of the egg masses you can reach are new. New egg masses are shiny and smooth. Old egg masses are dull and have small holes you can see with a magnifier (Figure 3).
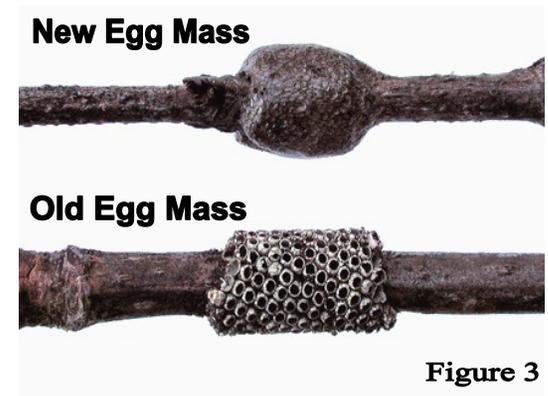
Figure 3

5. Total up the number of egg masses you saw on your ten sample trees. Estimate how many were new by multiplying this total by the percent of egg masses you could reach that were new.

6. Predict future defoliation by using the table to look up the estimated number of new egg masses in the sample trees. Remember that the predictions aren't always accurate because it's easy to overlook some egg masses, diseases can kill the caterpillars, and weather may change spring development.

1st: Record Sample Tree Egg Mass Counts

	Location of Tree	Total Number of Egg Masses on Ten 30" Branches
Tree # 1		
Tree # 2		
Tree # 3		
Tree # 4		
Tree # 5		
Tree # 6		
Tree # 7		
Tree # 8		
Tree # 9		
Tree # 10		
Total		

2nd: Record the Age of Egg Masses on Branches You Can Reach

$$\frac{\text{# of New Egg Masses Seen up Close}}{\text{Total Number of Egg Masses Seen up Close}} = \text{Percent of Egg Masses That are New}$$

# of New Egg Masses Seen up Close ÷ **Total Number of Egg Masses Seen up Close** = **Percent of Egg Masses That are New**

3rd: Estimate How Many Sample Tree Egg Masses Were New

Total Number of Egg Masses on 100 Branches X **Percent of Egg Masses That are New** = **Estimated Number of New Egg Masses on 100 Branches**

4th: Use the Estimated Number of New Egg Masses on Sample Trees to Predict Future Defoliation

Estimated Number of New Egg Masses on 100 Branches   **Prediction**

25 or more…………....... Defoliation likely

6-24……………....…… Chance of defoliation

1-5…………………….... No defoliation

None……………....... No defoliation… but check that you can detect egg masses with the instrument you're using