INSTRUCTIONS FOR GYPSY MOTH 5-MINUTE WALK EGG MASS SURVEY

Introduction

The standard and the most reliable egg mass survey method utilizes both fixed and variable (prism) plots. The method is time consuming, particularly when egg mass counts are high. Dr. D. Embody, USDA APHIS, Dr. L. Abrahamson, College of Forestry, Syracuse University, and the Forest Pest Management staff of USDA Forest Service are in the process of evaluating an older "quickie" method, where the number of egg masses are counted while walking in a host type - 5 minutes in and 5 minutes out divided by 2. Preliminary analysis allow us to recommend the following survey method to detect areas that are not expected to have a problem and areas that will be severely defoliated. The areas with populations between the two prediction levels will still require fixed and variable plots for evaluation.

A. Area Selection

1. Map areas where gypsy moth problems are expected - at least 25 percent of type is oak.

2. Block out areas where criteria are met for control, if severe defoliation was expected.

3. Locate potential survey points on the basis of access.

4. Mark survey sites at the rate of 2 per square mile, or 2 per linear mile along roads, but at least 20 points per town.

B. Egg Mass Survey

1. Begin survey at least 1 chain (66 ft.) from the edge of the stand. Select an area along the road that has a moderately to fully stocked stand with trees above 5 inches dbh (diameter at breast height).

2. Walk at a brisk pace without stopping and without looking back or sideways.

3. Count all the egg masses seen, but do not estimate. A hand counter is advisable. Do not use field glasses.

4. After walking 5 minutes into the woods, turn around, walk back for 5 minutes and continue counting on the previous route.

5. Record the total number of egg masses and go to the next sampling point.

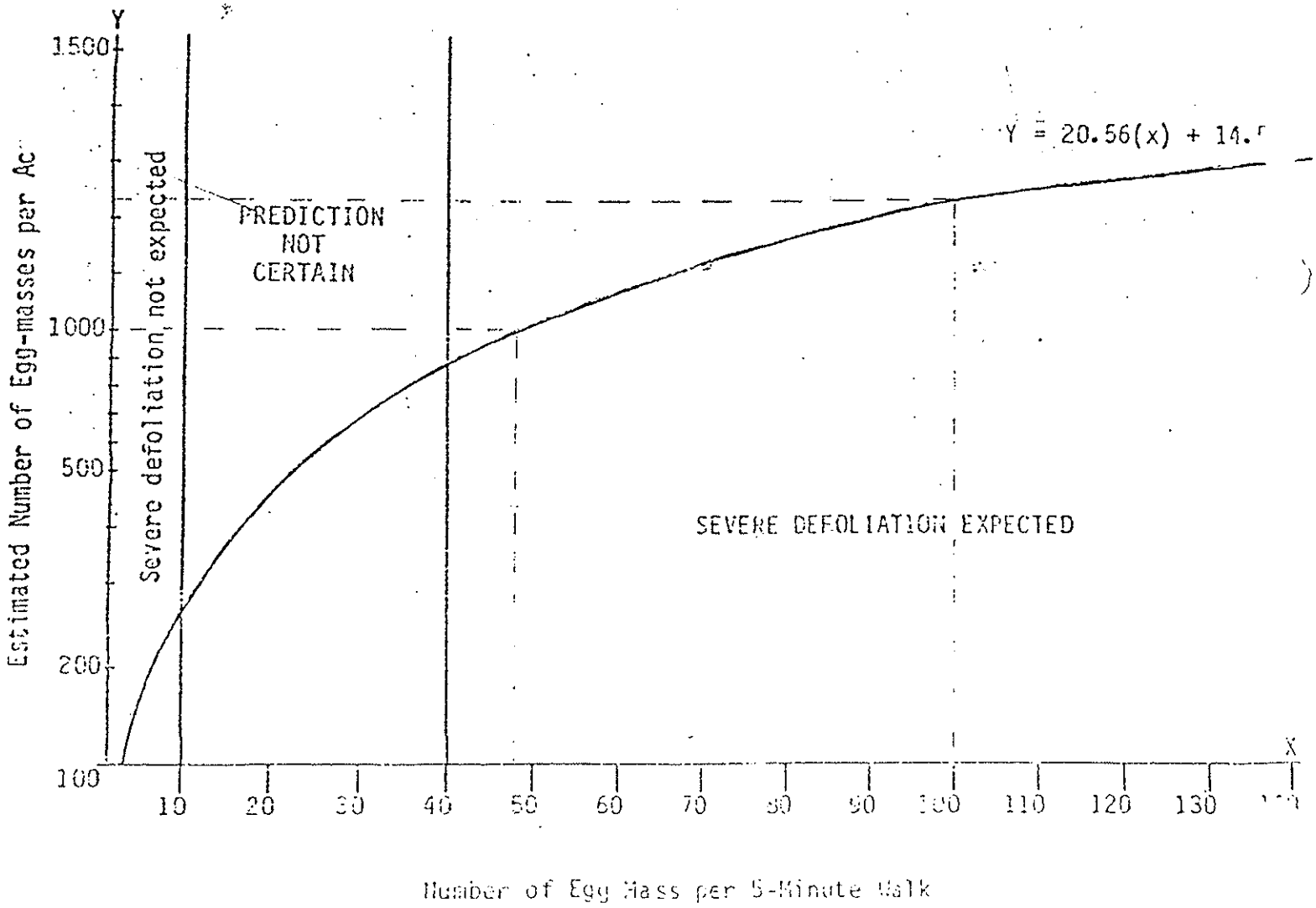
6. Divide the total number by 2, to obtain the average number of egg masses per 5-minute count.

7. On about 10 trees, or from 100 egg masses (50 masses or 5 trees at each end of the walk), estimate and record the proportion of new and old egg masses.

C. Evaluation

The interpretation of survey data should be done by an entomologist familiar with gypsy moth epidemiology. As a rule of thumb, 40 egg masses per 5-minute walk indicate about 800 egg masses per acre, which has a high potential for severe defoliation. Less than 10 egg masses per 5-minute walk predict less than 200 egg masses per acre which rarely result in severe defoliation. The population counts between these two extremes require a more accurate survey, such as fixed plots.

These estimates may be raised or lowered depending on the gypsy moth population vigor, egg mass size, and host trees.



GYPSY MOTH EGG MASS SURVEY

COUNTY _____ PESTICIDE _____

BLOCK LOCATION _____ DATE SPRAYED _____

BLOCK NO. _____ NO. ACRES SPRAYED _____

STEP 1: 5-Minute Walk Egg Mass Counts (EMC)

COUNT 1 = [ ]

\+

COUNT 2 = [ ]

SUM [ ] ÷ 2 = [ ] AVERAGE OF TWO 5-MINUTE WALK EMC'S

If the average of the two 5-minute walk EMC'S is $\geq$ 40, then use tables 1-4 to estimate egg masses per acre (EM/A).

Table Used = [ ] EM/A = [ ]

If the average is < 40, then complete Step 2 on the reverse side.

NOTE: If block is sprayed, then cols. 2, 3, 10 and 11 on the reverse side should be completed.