

# **EGG MASS SURVEY METHOD INSTRUCTIONS (1/40 ACRE)**

**MICHIGAN COOPERATIVE GYPSY MOTH SUPPRESSION PROGRAM  
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The purpose of this survey method is to increase the frequency of correct spray/no-spray decisions based on egg mass counts. This survey method has been divided into two parts. The first part allows for a general assessment of the proposed spray block. This includes % canopy cover, # of houses or # of visitors and the variety of trees. In addition, it allows time to determine, in a non-quantitative manner, if there are enough egg masses to warrant a detailed egg mass survey. Basically, all those factors that determine whether or not a block is eligible for inclusion in the program. The second part of this method allows for an in-depth, quantitative assessment of egg mass density to determine whether a spray block qualifies.

The MDA protocol requires that each proposed treatment block contain (300-egg masses/acre) or 500 egg masses/acre depending on population health. (See Table in Step 5).

**OFFICE PREPARATION**

STEP 1. Obtain needed field survey supplies:

- Stake with attached rope marked at 18.5 feet.
- Flagging tape to mark plot boundary.
- Binoculars (light weight wide angle pair with magnification about 7 X 35 allows close focusing).
- Supply of MDA egg mass survey data sheets (attached at the end of these instructions)
- Clip board and pen.
- Hand tally counter.

STEP 2. Determine the potential survey block boundaries on aerial photo, G.I.S. generated map, plat book map, or USGS topographic map. This can be based on homeowner calls, land use, and survey or knowledge of area gypsy moth levels. Assign a number to each block.

**Survey Site Steps** (See Egg Mass Survey Data Sheet for more information)

STEP 3. Evaluate actual block eligibility based on home ownership, percent canopy cover, the presence of host species and land use. If eligibility continues then....

STEP 4. Walk throughout the block to determine if the area appears, in a non-quantitative manner, to have sufficient egg masses to warrant surveying. This is an extremely important step as you will get an overall feel for the block and avoid wasting surveying time on a block that by initial review would never qualify. As you walk through the block fill out the top 3 portions (LOCATION, TREES and EGG MASSES) of the survey form. This information will help you evaluate the block for treatment potential including placement of sample plots, which can be identified on a map you draw in the Plot Information Section.

STEP 5. Use the following table as a guide to determine the minimum sample plots for the proposed treatment block. The number of egg masses required for inclusion depends on the population's health. A healthy population will have egg masses the size of a quarter or larger. Unhealthy populations will have egg masses smaller than a quarter.

**For 500 Egg Masses Per Acre** (average egg mass size less than a quarter in diameter)

<u>Block</u>	<u># of Plots</u>	<u>Minimum Block Average</u>	<u>Minimum Total Egg Masses For Block</u>
61 – 80 acres	6	13	78
51 – 60 acres	5	13	65
41 – 50 acres	4	13	52
26 – 40 acres	3	13	39
*15 – 25 acres	2	13	26

**For 300 Egg Masses Per Acre** (average egg mass size a quarter or larger in diameter)

<u>Block</u>	<u># of Plots</u>	<u>Minimum Block Average</u>	<u>Minimum Total Egg Masses For Block</u>
61 – 80 acres	6	8	48
51 – 60 acres	5	8	40
41 – 50 acres	4	8	32
26 – 40 acres	3	8	24
*15 – 25 acres	2	8	16

\* Blocks of less than 15 acres will not qualify.

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## SURVEYING LARGE BLOCKS

In those situations where gypsy moth is spread over large areas at high density, a system with a reduced number of plot points is available. The conditions under which this system can be used are:

- Uniform host canopy cover across entire block.
- Uniform egg mass density of 40 or more per plot point.

For blocks > 80 acres, add one additional plot point for each additional 40 acres.

For blocks > 240 acres, add one additional plot point for each additional 80 acres.

Once plot egg mass density drops below 40, the number of plot points must increase in order to identify the edge of the proposed treatment block.

STEP 6. Establish the center of your first plot in the area of highest estimated egg mass density as determined in (step 4).

STEP 7. Perform the plot survey with the following:

- Place the stake at the plot center.
- Use flagging to mark the circular plot perimeter using a rope length of 18.5 feet stretched from the center stake. The described circle will equal 1/40 of one acre.
- Count all new egg masses within the plot circle. This includes a egg masses on any tree with its trunk center within the plot circle is counted.
- Complete block qualification section including plot, # egg masses and address/plot location description so your assessment can be duplicated by MDA staff during the audit process.

STEP 8. Additional required plots must be representative of the whole block, that is spaced evenly in the block and Can be no closer than 100 yards from each other. Place the next plot center in a host area with the best Chance to detect a high population. Repeat Step 7. Continue to repeat Step 7 until the minimum number Of plots (Step 5) have been completed. Each time you conduct a plot, record the data and location (both By an address and an "X" on the map) whether egg masses are present or not.

STEP 9. Evaluate the block results after the minimum number of plots have been surveyed. Take Additional plot surveys to refine qualifying block acreage if a small number of plots do not qualify but Are adjacent to qualifying plots. Additional plots will provide confidence to retain or to reject portions of a proposed block based on survey results. **Any plots that equal zero cannot be used in the Average but should be recorded.** All blocks must have the minimum number of plots with an Average egg mass density equal to or more than the minimum block average to qualify for treatment.

STEP 10. Reduce the size or change the shape of proposed block based on plot results. (based on plots with Zero egg mass counts).

STEP 11. Fill out the comment and map portion of the survey form. This should include an 'X' with the plot # next To it showing the location of each plot. Any incomplete form(s) will be returned to the county. Failure to return the incomplete form(s) will result in the proposed block being rejected by MDA.

