

Morton Township, Mecosta County (Tri-Lakes Assoc. Area) Recommended Spongy Moth Spray Areas 2024

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Block #	Acres	Reason for Spray
MortTwp01	68	An established population in favorable habitat. Nuisance is high in the area and has been confirmed by homeowner interaction. Habitat is continuous into untreated St Ives Golf Club, so possible reinfestation is also a concern. Spray to reduce nuisance and inhibit population rebound.
MortTwp02	69	A sustained population in favorable habitat. Very high infestation levels from 2-3 years prior were reduced by 80% overall, but the remaining population could rebound and cause further nuisance and defoliation. Spray to inhibit population rebound and limit further tree damage.
MortTwp03	92	A remnant population in favorable habitat. Further tree damage is the primary concern in this area. Overall population reduction is estimated at 80%, however the area was heavily infested 3-4 years prior, and defoliation was extensive. Nuisance should be lower relative to other areas due to lower residential density. Spray to limit further tree damage and inhibit population rebound.
MortTwp04	77	A sustained population in prime habitat. Some historical tree damage is evident in several areas. Overall population reduction is estimated at 80%, but relatively high initial infestation levels in eastern portion of block raise concerns for population rebound. Spray to limit future tree damage and inhibit population rebound.

Total Acreage = **306 acres**

The term “nuisance” is subjective and relates to the likelihood that the feeding behavior and number of caterpillars in the area will impact a property owner’s quality of life. Some property owners may experience heavy infestation yet go unbothered. Other property owners may view 5-10 caterpillars visible on a barn door as a nuisance. Field experience during spongy moth infestation suggests that the number of egg masses found in an area may yield a widespread nuisance situation. The term “tree damage” is more literal, but relative to environmental and historical factors as well. Any level of defoliation should be considered damaging, but otherwise healthy trees are generally much more resilient, even after consecutive years of defoliation. Other environmental stressors such as drought or disease are additive factors that will contribute to greater risk of tree degradation and/or mortality. Defoliation levels of >60% are also very stressful to trees, although most trees can survive 3+ years of >60% defoliation if few other stressors are present. Habitat quality relates to tree species composition, density, distribution, understory, and topography of an area. Mixed forest type consisting primarily of oaks, neatly groomed understory, mixed age-class, and low topographic variability are the ideal conditions for persistent infestation, and so this habitat is

designated as “prime” with favorable, suitable, and marginal habitat in decreasing suitability. Trends in populations are designated by the egg mass residues in the area. Rising populations show a high new/old egg mass ratio, with established, sustained, and remnant populations extending toward a high old/new egg mass ratio.

Overall, a high proportion of infested areas are showing >80% reduction in egg mass densities with some areas showing 90-100% reduction. Given the relatively narrow corridor of the designated Tri-Lakes Association and the infestation levels and habitat quality of the immediate surroundings, it is possible that any suppression achieved up to this point, may be somewhat muted by reinfestation post-treatment. We did see reductions in all treatment areas, and all homeowner interactions seem to concur that the situation is much improved. However, given the high initial infestation level across the area and the threat of reinfestation from the surrounding habitat, all spray areas are highly recommended for *Bacillus thuringiensis var. kurstaki* (B.t.k.) treatment in spring 2024. Some areas showed evidence of several successive years of infestation (particularly in the areas of East Blue Lake Dr and 10 Mile Rd), which often proves much more challenging to suppress. Under these circumstances, several years of treatment may be necessary. It is not possible to completely eliminate spongy moth populations, so this should never be the expectation. Often with 2-3 years of treatment and monitoring, an acceptable level of suppression is attainable.

Spongy moth suppression programs often are tasked with balancing high potential for damaging spongy moth numbers with high community benefit. Areas where these considerations overlap are generally the areas that are treated first with available funds and areas of diminishing return are treated as funds are depleted. Our treatment recommendations take this into account, and we try to limit recommended spray areas to these top-tier areas. There is always some risk the objection of “Why did you treat them and not me?” Given this trade-off, some of our broadly infested clients decide that the best use of available funds is to treat areas of high residential population density that are also generally infested with spongy moths. We cannot offer any guidance on this consideration and take no responsibility for the concluded spray acreage. It is solely the decision of the municipality to treat all, some, or none of the recommended treatment area.

Spongy moth suppression programs in Michigan generally follow an Integrated Pest Management (IPM) strategy which is focused on low environmental impact and economic awareness. Further, an IPM strategy intends to mitigate exponential population growth with treatment only until latent environmental controls begin to limit populations sufficiently. In order to efficiently determine when treatment is no longer advisable, monitoring is imperative. Accordingly, we strongly advise Morton Township maintain a monitoring program in upcoming years.



Photo 1: A mixture of new and old egg masses on trunk of white oak tree, block: MortTwp01.



Photo 2: A mixture of old and new egg masses on white oak branches, block: MortTwp03.