

Deep River Township, Arenac County Recommended Spongy Moth Spray Areas 2024

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Block #	Acres	Reason for Spray
DeepRvr01	73	A sustained population in favorable habitat. Residential population density is low, so associated nuisance will likely be low as well. Infestation levels were relatively high at the peak of this cycle, so further tree damage is a secondary concern. Area is continuous into uninhabited forest, so population persistence is also a concern. Spray to mitigate potential nuisance, limit further tree damage, and reduce population size.
DeepRvr02	44	A sustained population in favorable habitat. The majority of the area is sparsely populated residential. Nuisance has been high for a few years, as confirmed by homeowner interactions. Tree damage is secondary concern as a few trees show a history of infestation. Spray to reduce nuisance and limit further tree damage.
DeepRvr03	10	A remnant population in suitable habitat. Nuisance has been elevated in the area for a few years, as confirmed by homeowner interaction. Area is continuous into uninhabited forest, so population persistence is a secondary concern. Spray to mitigate nuisance and inhibit population persistence.

Total Acreage = **127 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, the vast majority of infested areas are showing >90% reduction in egg mass densities with some areas showing 95-100% reduction. Sustained and remnant population classes both refer to higher proportions of old egg masses, implying that the population is declining notably. Generally, this trend will continue, and suppressive spray will increase the likelihood of decline. Be advised that this is not always the case, and we have seen population rebounds from remnant classes in other areas in Michigan. Also be advised that level of damage and/or nuisance can be difficult to predict given the interaction of unpredictable environmental factors. Accordingly, all spray areas are highly recommended for *Bacillus thuringiensis var. kurstaki* (B.t.k.) treatment in spring 2024. 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 control 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 Deep River Township maintains some sort of monitoring program in upcoming years.