USDA FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE

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USDA Spongy Moth Management Programs and Associated Zones

Spongy moth, Lymantria dispar L. (previously referred to as gypsy moth), was introduced to the U.S. in 1869 by amateur entomologist Etienne Léopold Trovelot. Spongy moth has spread primarily in the Northeast and Midwest. Spongy moth has caused extensive tree defoliation and mortality (Rindos and Liebhold 2023).

Photo courtesy of John Ghent, John Ghent, Bugwood.org

Roles and Interactions of Spongy Moth Management Agencies

National Slow the Spread Program:

The USDA Forest Service (FS) and 11 state agencies implement the National Slow the Spread (STS) Program. The STS Program is divided into three regions. The southern region includes Kentucky, North Carolina, Tennessee, Virginia, and West Virginia. The central region comprises Illinois, Indiana, and Ohio. The northern region includes Iowa, Minnesota, and Wisconsin. Every year, each state plans and executes trapping and treatment programs. There are three areas or “zones” associated with the STS Program: the Action, Monitoring I, and Monitoring II zones. The two monitoring zones combined are referred to as the “evaluation area.”

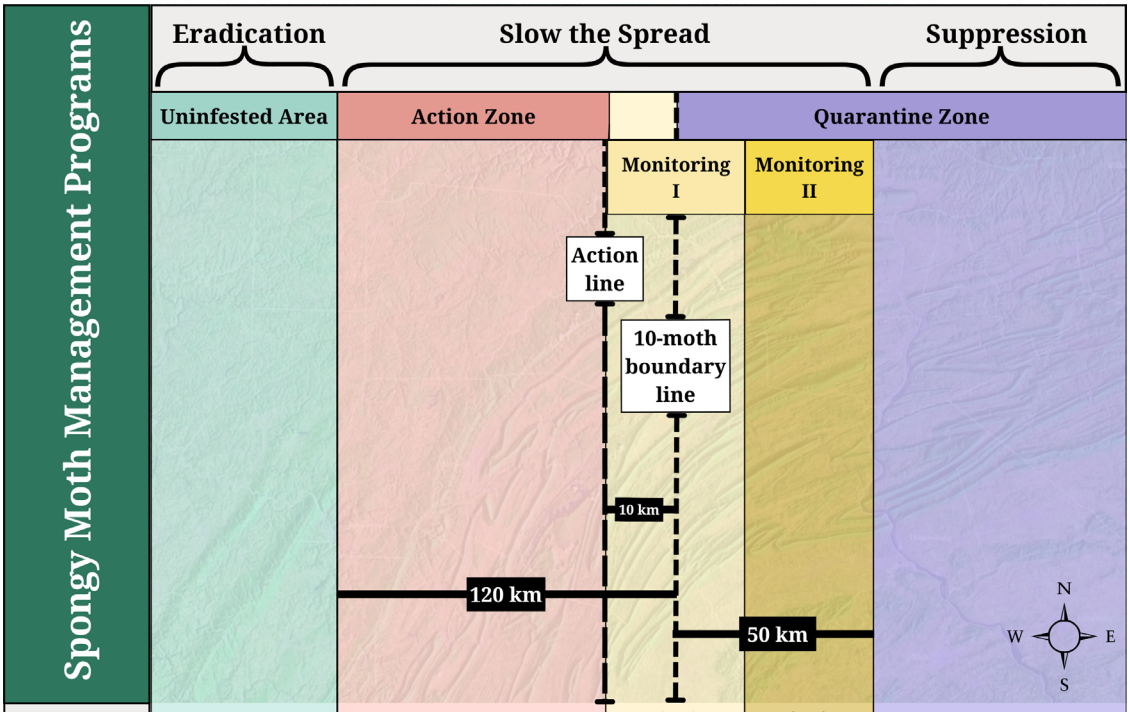
The STS program manager coordinates spongy moth trapping with state managers. Trapping occurs in all STS zones, including quarantined counties in both Monitoring zones. In each STS zone, managers determine trap spacing to detect and delimit new infestations. In the action area, STS slows population growth. STS uses mating disruption and larvicide treatments to do this. The STS Program oversees mating disruption applications, whereas state managers have operational control of larvicide treatment blocks.

Suppression Program:

The quarantine area extends to the county where the 10-moth line occurs. The 10-moth line is the boundary where trap capture equals 10 moths per trap, on average. The suppression program occurs in quarantined counties. These counties are in back (to the east) of the STS Program. The FS Forest Health Protection (FHP) works with state agencies to suppress large outbreaks. To decrease tree defoliation and mortality, FHP uses Btk, insect growth regulators, and Gypchek. USDA Animal and Plant Health Inspection Service (APHIS) and state agencies collaborate to conduct inspections to limit the spread of spongy moth life stages and provide public outreach and education. Inspections occur primarily where shrubs and trees are grown outside of greenhouses (including Christmas trees). Additionally, inspections happen at facilities that produce bark products and logs, and other establishments that may be conducting activities which may lead to spread of egg-masses.

Eradication Program:

The eradication program works in the uninfested areas in front (to the west) of the STS Program. In the eradication area, the goal is to eliminate spongy moth populations. APHIS, FHP, and state agencies work together to deploy traps for monitoring in uninfested areas. Agencies also collaborate to sporadically eradicate spongy moth populations that get established.



Agency	Uninfested Actions	Action Zone Actions	Monitoring I Zone Actions	Monitoring II Zone Actions	Suppression Actions
FHP	Traps federal lands and treats areas over 640 acres and federal lands.	Applies mating disruption and larvicide treatments (STS oversees mating disruption and states manage larvicide treatment blocks)	Funds trapping and monitoring in the STS zones	Funds trapping and monitoring in the STS zones	Treats outbreaks using Gypchek, Btk and insect growth regulators
APHIS	Supports states to trap, monitor, and treat infestations	Supports states to conduct inspections of high-risk sites*	Supports states to conduct inspections of high-risk sites*	Supports states to conduct inspections of high-risk sites*	Conducts regulatory work, public education, inspections of high-risk sites, and funds trapping and monitoring by states
State	Manages trapping and treatment programs.	Hires trappers, monitors, and conducts quality control, as well as treats infestations. Larvicide treatments include: Gypchek, Btk, and insect growth regulators	Monitors high-risk sites and implements trapping in approximately 5km grids**	Monitors high-risk sites and implements trapping in approximately 8km grids**	Facilitates treatment and monitoring with FHP and conducts regulatory work and public outreach with APHIS

***High-risk sites are locations such as nurseries and logging yards.**
****Spacing of traps is dependent upon the amount of funding and the best judgement of management.**

Figure 1: From right to left (east to west), the quarantine zone begins at the 10-moth boundary line and extends east. Regulatory work, public education, trapping, and inspection of high-risk areas are conducted by APHIS and state agencies. Suppression treatments are conducted by state agencies and can be supported with state, federal, and private funding. The monitoring zone I is trapped with a 5km trap spacing and is approximately 30-40 km wide; the monitoring zone II is trapped at an 8km trap spacing and is approximately 40-50 km wide. In the STS Program, the FS, APHIS, and state agencies work together to implement the trapping (hiring trappers, monitoring traps, and conducting QA/QC on traps) and treatment programs. The action area extends 120 km from the 10-moth boundary line or 110 km from the monitoring zone I. The highest density of trapping occurs in the action zone, as well as treatments to suppress new, low-density infestations. The final area is the eradication zone, or uninfested area. State agencies, APHIS, and the FS work together to eliminate spongy moth populations. Figure 1 was adapted from a May 18, 2012 APHIS publication, which can be found at the associated link: https://cdn.slowthespread.org/cdn/pdf/GMregactionplan.pdf

Extended Literature

Rindos, M. and Liebhold, A.M., 2023. The spongy moth, *Lymantria dispar*. Current Biology, 33(12), pp. R665-R668. https://www.fs.usda.gov/nrs/pubs/jrnl/2023/nrs_2023_rindos_001.pdf

Information about Mating Disruption: https://agri.ohio.gov/wps/wcm/connect/gov/6d85a745-1bf2-4249-94ff-ab6e68242166/SPLAT+factsheet.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_79GCH8013HMOA06A2E16IV2082-6d85a745-1bf2-4249-94ff-ab6e68242166-ongAiL4

Information about larvicides:

BtK: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-006400_24-Mar-98.pdf

Gypchek: https://agri.ohio.gov/divisions/plant-health/spongy-moth-program/gypchek-fact

Insect growth inhibitors

Diflubenzuron: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-108201_1-Aug-97.pdf

Tebufenozide: https://www.pgc.pa.gov/Wildlife/HabitatManagement/Documents/Mimic%202LV%20IGR%20Fact%20Sheet.pdf

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