2008 Accomplishments

In Slowing the Spread of the Gypsy Moth

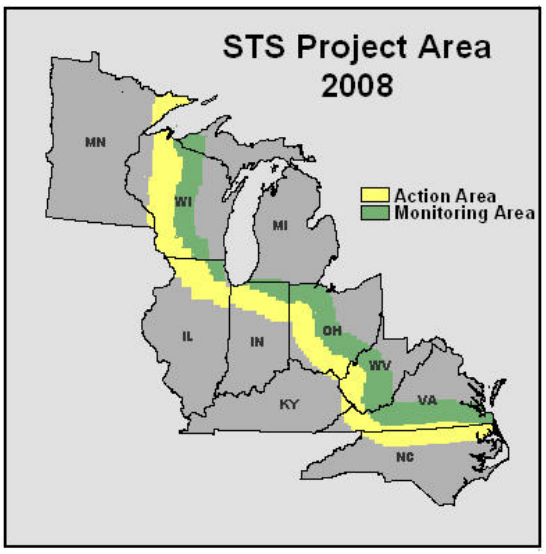
Overview: States located along the leading edge of gypsy moth populations, together with USDA Forest Service, have been cooperatively implementing a project to slow the spread of the gypsy moth (STS) since Congress funded the strategy in the year 2000. The states of North Carolina, Virginia, West Virginia, Kentucky, Ohio, Indiana, Illinois, Wisconsin and Minnesota were participants during 2008. Integrating STS into USDA's strategy to manage the gypsy moth provides the following benefits:

- Protects the extensive urban and wild land hardwood forests in the south and upper mid-west while also protecting the environment through use of gypsy moth specific tactics.
- Reduces spread of this destructive pest by more than 70%, which has prevented infestation of more than 80 million acres since the program's implementation.
- Unifies the partners and promotes coordinated, region-wide action based on biological need.
- Yields a benefit to cost ratio of more than 3 to 1 by delaying the onset of impacts that occur as gypsy moth invades new areas.
- Insures that actions are standardized across the multiple administrative and jurisdictional boundaries in the program by utilizing a powerful decision algorithm to plot project boundaries, locate incipient infestations, prioritize and delineate infestations for treatment and measure spread rates each year.

Funding: This year was the 2nd year of substantial reductions in funding for the STS program. Until 2006 annual funding provided by USDA Forest Service totaled approximately $10 million. Years 2007 and 2008 were funded at $8.25 and $8.5 million respectively, which represent a 16% cut in federal funding. Specifically the STS partner contributions during 2008 collectively totaled:

Forest Service	$ 8,508,000
State Partners	$ 2,399,500
TOTAL	$10,907,500

Project Area: To respond to the decreases in funding, the 2008 STS action area was narrowed to 80 km and the monitoring zone was widened by 20 km. Thus, the location of the active management band (yellow shaded area on map) shifted west and south and the overall size changed from the historic 54 million acres to 44 million acres.



Trapping: STS partners deployed traps at just over 96% of the 78,175 planned trap sites during 2008. Data from these traps were used to measure spread, evaluate treatment efficacy and to detect or delineate newly established infestations that will need to be treated during 2009.

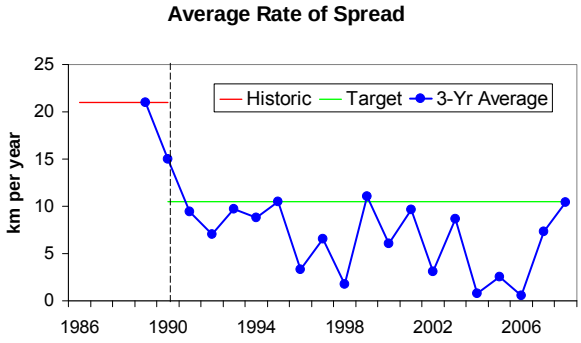
Treatments: STS partners detected and delineated 98 distinct gypsy moth colonies within the STS area in 2007. Treatments subsequently occurred on just over 413,500 acres during the spring and summer of 2008. Federal lands accounted for more than 25% of the treatment acreage (121,050 acres) with substantial involvement from the Jefferson National Forest in Virginia and the Chequamegon National Forest in Wisconsin. The selection of the particular treatment to be used was heavily weighted toward mating disruption (89%).

STATE	# OF COLONIES MANAGED	ACRES OF TREATMENT	
		Larvicides (Btk, dfb or GypChek)	Mating Disruption
IL	4	2,195	0
IN	8	4,105	6,593
MN	6	4,959	79,244
NC	2	431	18,920
OH	20	215	52,624
VA	19	2,390	162,186
WI	39	31,064	48,590
TOTAL	98	45,359	368,157

Treatments were successful on 27 of the 42 blocks (64%) treated with Btk, Dimilin or Gypchek in 2008. This is an unusually low success rate for these kinds of treatments and can perhaps be explained by the fact that 10 of the 15 blocks that failed were located in the area where we suspect a moth blow occurred. If indeed a moth blow occurred, it would explain the fact that the moth captures from within the treated areas increased by the same amount as those from the surrounding untreated areas and thus were deemed unsuccessful by our treatment evaluation protocols.

Previous year mating disruption treatments were successful on 64 of the 73 blocks (88%). Recent work to refine the technology for mating disruption has led to increased spacing between applied swaths. This tactic will continue to be a major part of STS because it is effective, inexpensive and target specific.

Spread: The effect of decreasing funding combined with the ongoing outbreak in the northeast is evident in the increase in spread rates observed in the past two years. Additionally, large areas that were previously uninfested in the states of Illinois, Iowa, Minnesota and Wisconsin are now blanketed with positive moth captures, possibly indicating a widespread “moth blow”.



Summary of 2008 project activities that contribute to STS program success

Category	Accomplishment	Cost
Monitoring	≈ 76,000 pheromone traps deployed in 10 states, spread measured and all treatments evaluated.	$4,959,250 ($65.25 per trap)
Treatments	98 infestations totaling ≈ 413,500 acres treated; 89% treated with gypsy moth specific products	$4,906,743 ($11.94 per acre)
Data management	Streamlined and standardized planning; evaluation of all implemented actions	$891,507
Technology development	New product developed for use in mating disruption and better understanding of phenology in northern areas	$150,000
Reduced spread	Prevented infestation of 80 million acres (2000-2008); benefit:cost of at least 3 to 1	$10,907,500