

BIOLOGICAL EVALUATION

Cooperative STS Gypsy Moth Project For Indiana - 2016

Gypsy moth is moving into northern Indiana from the infestations in Michigan and Ohio. Its movement is by natural spread and short distance transport by human activities. To detect the introduction of this pest, the State of Indiana has surveyed since 1972. From 1988 to 1998 the survey used a one-mile grid in the northern third of Indiana and a two-mile grid in the remainder of the state. In 1999, Indiana adopted the Slow-The-Spread (STS) survey protocol developed by the USDA Forest Service. Traps are set in detection (2K, 3K or 5K) and delimit (250M, 500M or 1K) grids across the state. The 2015 survey set 9,840 detection traps and 897 delimit traps, for a total of 10,737 traps set across the state. Four counties were not trapped in 2015 mostly for economic reasons, but also because of negative trap catches in previous years.

The STS analysis of the 2015 trapping data in Indiana identified potential problem areas (PPA's) at 41 locations in Indiana. The analysis identified higher or equivalent moth catches in delimiting survey grids placed at each site compared to detections and delimits in prior years and recommended action in these areas. In addition to the data from the STS analysis, field survey by Indiana DNR staff detected multiple life stages at four PPA locations. Indiana DNR and USDA, Forest Service staff reviewed this information and determined which PPA's should have a STS treatment, and which treatment options should be applied. This information, along with locations of gypsy moth habitat within those PPA's, was then used to define where treatment boundaries would be designated for those areas. In several areas identified by the analysis, the decision to delimit the area was chosen due to a lack of multiple life stages found and/or lack of habitat. The eight proposed treatment sites in seven counties are based on the trapping surveys, STS analysis, egg mass detections and available habitat.

Table 1 & Figure 1 show in the seven northern counties with proposed treatment sites, the mean number of gypsy moths caught in detection traps between 2011 and 2015. The mean number of moths has fluctuated in the counties over the past five years.

Map 1 shows various moth lines and several potential problem areas across northern Indiana based on STS analysis of 2015 data. This analysis places the STS action area below the 10-moth line.

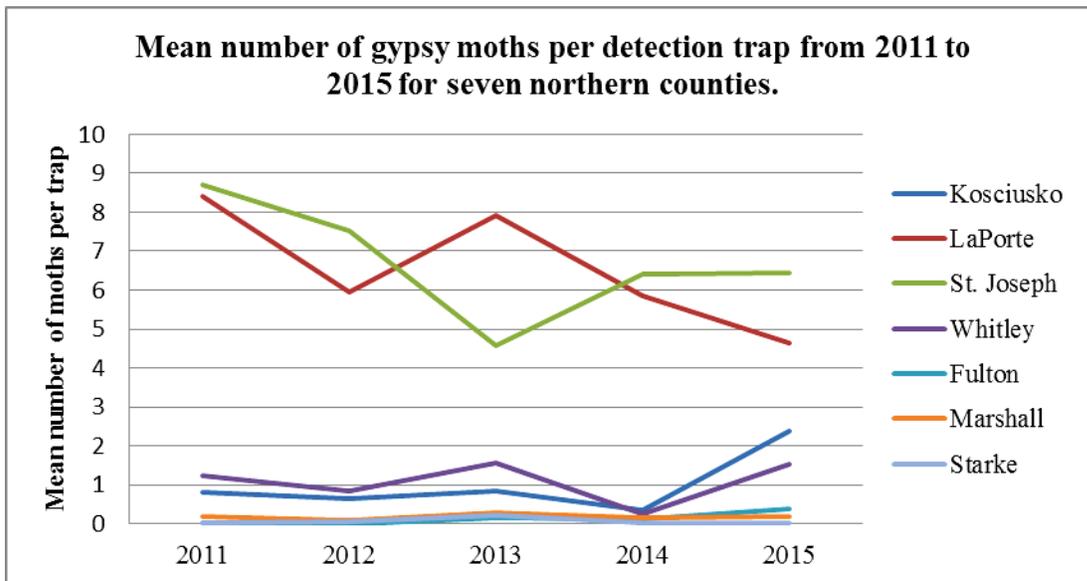
Map 2 shows the number of gypsy moths detected in each county for 2015.

Map 3 shows the 10-moth line in Indiana from 2011-2015.
The site and moth trapping data can be viewed at the STS website -
<http://yt.ento.vt.edu/da/>

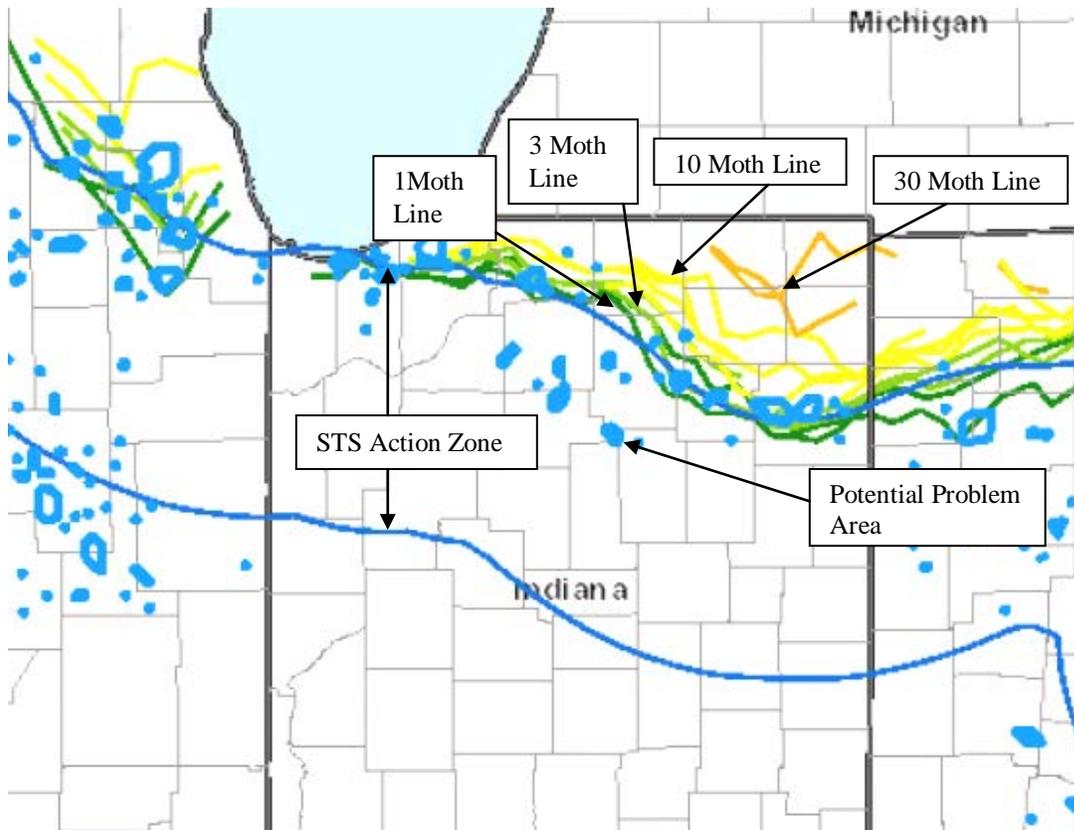
Table 1. Mean number of gypsy moths per detection trap (milk carton and delta) in the proposed counties for 2011 to 2015.

County	2011	2012	2013	2014	2015
Kosciusko	0.80	0.64	0.83	0.35	2.38
LaPorte	8.40	5.94	7.93	5.87	4.63
St. Joseph	8.69	7.52	4.57	6.41	6.45
Whitley	1.25	0.83	1.57	0.26	1.54
Fulton	0.02	0.00	0.14	0.13	0.38
Marshall	0.18	0.08	0.30	0.14	0.18
Starke	0.01	0.05	0.21	0.03	0.02

Figure1. Mean number of gypsy moths per detection trap from 2011 to 2015 For seven northern counties.



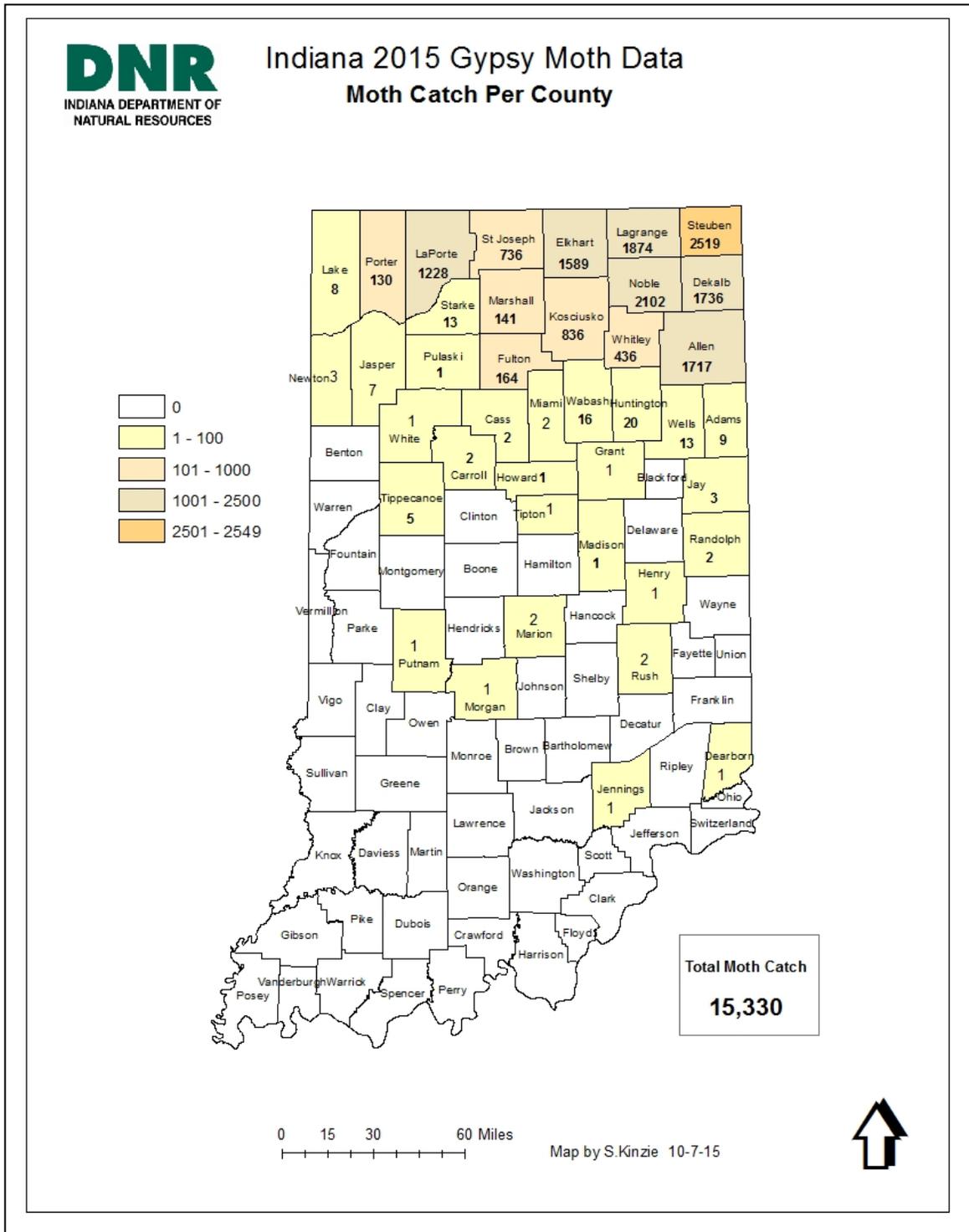
Map 1. Results of the 2015 Gypsy Moth Slow-The-Spread Analysis showing 30, 10, 3 and 1 moth lines and several potential problem areas for northern Indiana. Blue shaded areas indicate potential problem areas as determined by the analysis of the 2015 trapping



Legend

30 Moth Line	
10 Moth Line	
3 Moth Line	
1 Moth Line	
Potential Problem Area	

Map 2. Male moth catches by county for 2015.



Map 3. The 10-moth line of Gypsy Moth in Indiana from 2011 to 2015.

