

# **ANALYSIS OF SPONGY MOTH POPULATIONS**

## **Cooperative STS and Eradication Spongy Moth Project For Indiana - 2024**

Spongy moth has moved 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, 5K & 8K) and delimit (250M, 500M or 1K) grids and organized into the STS Evaluation, STS Action, and State area north to south, respectively, across the state. The 2023 survey set a total of 9,528 traps set across the state. There were three counties that had no traps placed in 2023 (Clark, Floyd, and Harrison). Only part of five other counties were trapped (Crawford, Jefferson, Orange, Scott, and Washington). These counties are in the state area in southern Indiana. Areas are not trapped for economic reasons, but also because of negative trap catches in previous years. The areas of the state that are not trapped rotate each year so that all areas are trapped and surveyed within a two year period.

The STS analysis of the 2023 trapping data in Indiana identified potential problem areas (PPAs) at 78 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 one PPA location. Indiana DNR and USDA, Forest Service staff reviewed this information and determined which PPAs should have treatment, and which treatment options should be applied. This information, along with locations of spongy moth habitat within those PPAs, 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 four proposed treatment sites in six counties in the STS Action Area and the one proposed treatment site in the non-infested area are based on the trapping surveys, STS analysis, egg mass detections and available habitat.

Table 1, Figure 1, and Figure 2 show the five proposed treatment sites and the mean number of spongy moths caught in detection traps between 2019 and 2023. The mean number of moths has fluctuated in the seven counties over the past five years. All seven counties have higher mean moth counts in 2023 than in 2022.

Map 1 shows the 1, 3, 10, 30 and 100 moth lines (south to north, respectively) and the potential problem areas and proposed treatment areas based on STS analysis of the 2023 data. This analysis places the STS action zone below the 10-moth line. The 1, 10

and 100 moth lines and action zone are indicated by arrows on the map. The proposed site for eradication in the non-infested area in Wayne county is also indicated by an arrow

Maps 2 and 3 show the number of spongy moths detected in each county for 2022 and 2023, respectively.

Map 4 shows the 10-moth line in Indiana from 2014-2023.

The [Spongy Moth analysis and trapping data](#) can be viewed at the STS website.

Table 1. Mean number of spongy moths per detection trap (milk carton and delta) in all the proposed treatment counties from 2019 to 2023.

County	2019	2020	2021	2022	2023
Allen	14.36	23.40	18.30	10.28	19.61
Adams	0.21	1.43	1.09	0.15	1.71
Huntington	0.37	0.50	1.45	0.37	3.83
Starke	0.15	0.34	2.39	0.82	4.20
Wabash	0.16	0.84	1.27	0.22	2.76
Wayne	0.01	0.31	0.08	0.23	0.36
Whitley	13.11	35.56	61.00	25.22	28.52

Figure 1. Mean number of spongy moths per detection trap from 2019 to 2023 for the six counties in the proposed STS project area.

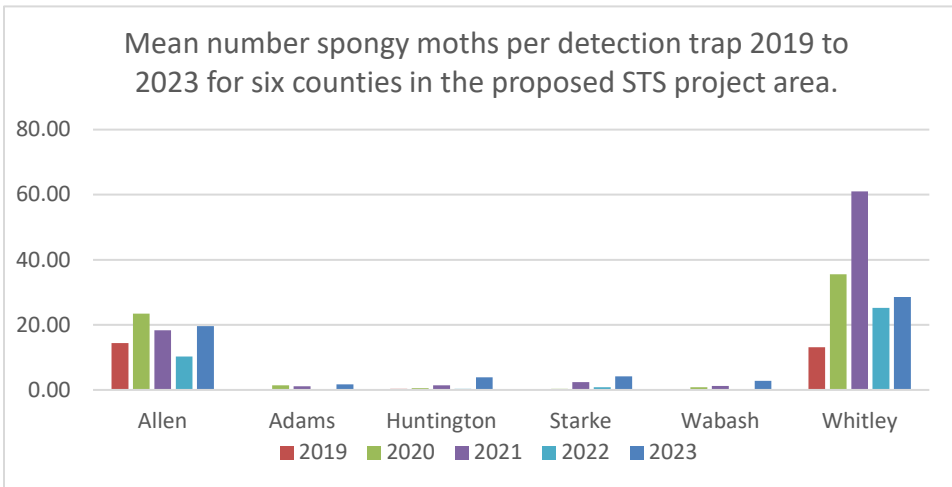
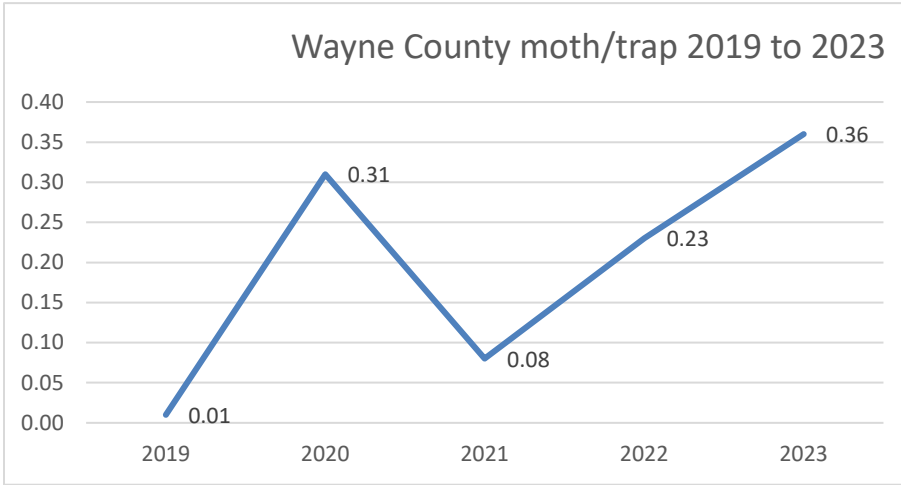
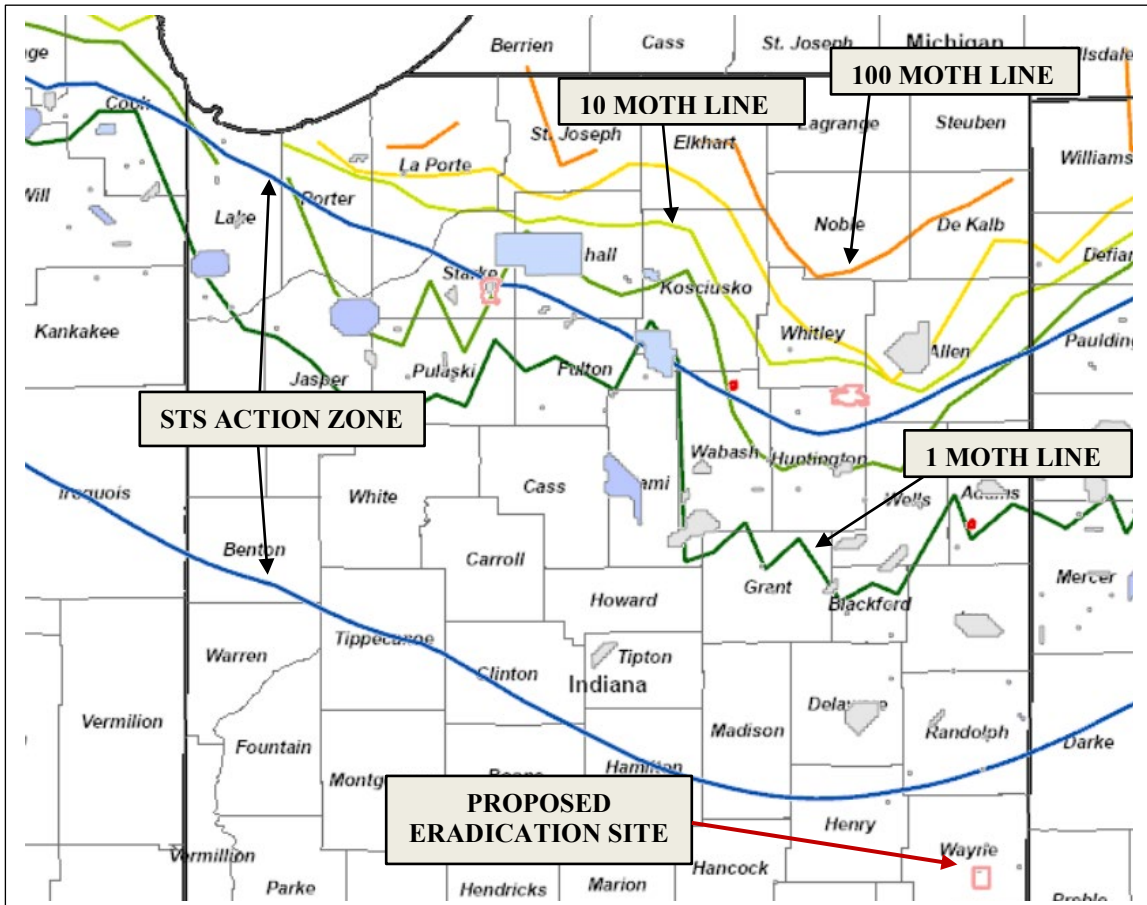


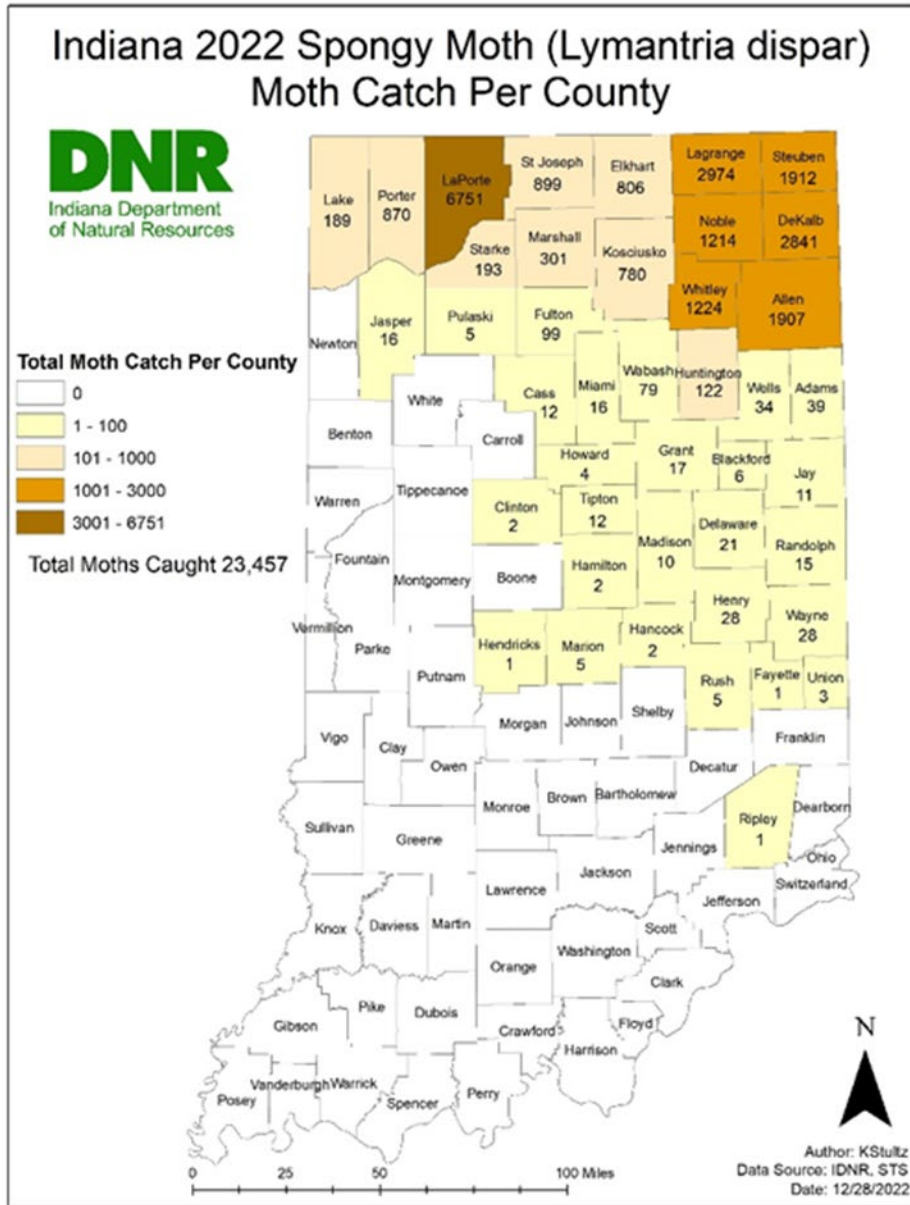
Figure 2. Mean number of spongy moths per detection trap from 2019 to 2023 for the eradication project area in Wayne County.



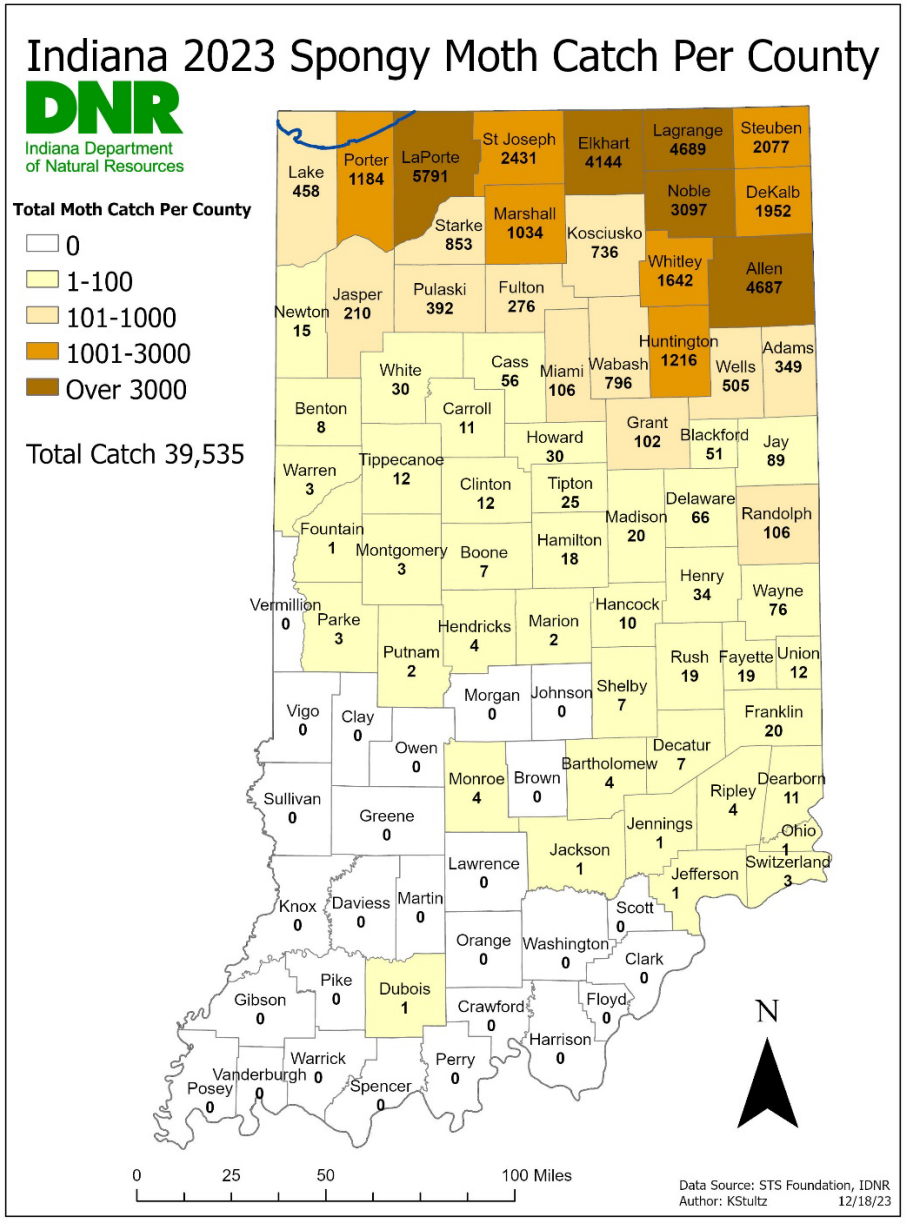
Map 1. Results of the 2023 Spongy Moth Slow-The-Spread Analysis showing moth lines, potential problem areas (light blue and light gray areas) and the STS Action Zone for northern Indiana. Red areas indicate the four proposed slow the spread treatment sites in northern Indiana and the one proposed eradication treatment site in Wayne County in central Indiana that is in the non-infested area.



Map 2. Map showing male moth catches by county in Indiana for 2022.



Map 3. Map showing male moth catches by county in Indiana for 2023.



Map 4. Map showing the 10-moth line of Spongy Moth in Indiana from 2014 to 2023.

