ECONOMIC ANALYSIS

Cooperative STS Spongy Moth Project
For Indiana – 2025

The benefit/cost ratio for this project is estimated to be **8.5:1.0**

Assumptions

Economic analysis of the Slow-The-Spread (STS) strategy has been done by Leuschner 1991 and Leuschner et al. 1996. In the 1991 analysis, impacts were assumed on the first year of infestation only. In the 1996 analysis, impacts were assumed during every year of the infestation. Jeff Mayo converted the output of the Leuschner analysis so benefits are stated in "dollars per mile of Transition Line". Thus, calculations of benefits can be made for specific STS projects. For each mile that the rate of spread is reduced, the annual value of benefits that accrue are $3,775 (1991 analysis) or $29,315 (1996 analysis) per mile along the Transition Line (communication with Donna Leonard - STS Program Coordinator, 2000-2019). The Transition Line is estimated to be the 10-moth line calculated by the STS Program. For this project in Indiana, assumptions are that the rate of spread will be reduced by 60% (from 12.1 miles/year to 4.8 miles/year) (communication with Donna Leonard – STS Program Coordinator, 2000-2019), and impacts will be for the first year of infestation only (a conservative estimate). Indiana's average rate of spread is 0.27 miles per year for the last 4 years (Table 1). Therefore, the 60% reduction is a reasonable estimate to use for the analysis of the STS project in Indiana.

Benefit

- $27,558 per mile of Transition Line ($3,775/mile of reduced spread rate x 7.3 miles of reduced spread rate)
- 166 miles of Transition Line based on the 10-moth line

➢ $4,574,628 total benefit

Cost

- $161,510 = Btk treatment (1,402 acres x 2 applications@ $57.60/acre/application)
- $288,268 = Mating disruption treatment (34,984 acres x 1 application (6 g) @ $8.24/acre/application)
- $89,956 = Administrative costs (20.0% of treatment costs)

➢ $539,734 = total cost

Benefit/Cost Ratio: $4,574,628: $539,734 = 8.5:1.0

Table 1. Annual rate of spread based on the 10-moth line.

Year	Rate of Spread (km/year)	Rate of Spread (mi/year)
2021	10.65	6.62
2022	- 12.80	- 7.95
2023	17.42	10.82
2024	- 13.57	- 8.43
Average	**0.43**	**0.27**