

THE GYPSY MOTH EVENT MONITOR FOR FVS: A TOOL FOR FOREST AND PEST MANAGERS

Kurt W. Gottschalk¹ and Anthony W. Courter²

¹USDA Forest Service, Northern Research Station,
180 Canfield St., Morgantown, WV 26505

²USDA Forest Service, Forest Health Technology Enterprise Team, Ft. Collins, CO

ABSTRACT

The Gypsy Moth Event Monitor is a program that simulates the effects of gypsy moth, *Lymantria dispar* (L.), within the confines of the Forest Vegetation Simulator (FVS). Individual stands are evaluated with a susceptibility index system to determine the vulnerability of the stand to the effects of gypsy moth. A gypsy moth outbreak is scheduled in the FVS multi-year cycle if a drawn random number is less than or equal to the estimated probability of outbreak in that multi-year cycle. If an outbreak is scheduled, gypsy moth mortality is leveled against species deemed susceptible and resistant; basal area growth is increasingly reduced in susceptible species during light, medium and heavy outbreaks, whereas during a heavy outbreak, basal area growth is somewhat reduced in resistant species.

This is a strategic model that demonstrates the potential loss of timber and habitat due to gypsy moth. The user can proactively reduce the stand's susceptibility to gypsy moth and the probability of a gypsy moth event by scheduling appropriate management actions within FVS (see Gottschalk 1993). Due to the limitations in FVS's growth and mortality equations,

the variability normally seen in response to gypsy moth defoliation cannot be adequately modeled. As such, the user is cautioned that the best use of this Event Monitor is to show relative differences in responses of stands to gypsy moth rather than predicting absolute responses in individual stands. The Gypsy Moth Event Monitor can be used to prioritize stands for treatment or to estimate the overall impacts to a forested landscape.

The Gypsy Moth Event Monitor is intended for use by those familiar with the proper use and execution of the Forest Vegetation Simulator. It is recommended that the user be well versed in interpretation of standard FVS output. Specific Event Monitor variables can be exported to spread sheet programs for further user analysis.

Literature Cited

Gottschalk, K.W. 1993. **Silvicultural guidelines for forest stands threatened by the gypsy moth**. Gen. Tech. Rep. NE-171. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 49 p.