

EFFECTS OF GYPSY MOTH INFESTATION ON AESTHETIC PREFERENCES AND BEHAVIOR INTENTIONS

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Using the Scenic Beauty Estimator (SBE) approach, within-stand color photographs were taken of 27 forested sites representative of the Central Appalachian Plateau. These sites had been repeatedly infested by gypsy moth (*Lymantria dispar*) (GM) to varying degrees since 1985, with resulting tree mortality from 6% - 97%. Eighty-one slides (3 slides/site) were randomly arranged and presented to 415 subjects. Subjects were composed of professional foresters, forestry students, recreation students, members of the Izaak Walton League, and a pool of general students. Within each group, half of the respondents were told the damage was caused by GM and the other half were not told. In order to evaluate the effect of GM on recreation visitation, half the subjects rated the slides for scenic beauty (SBE) and the other half for likelihood of visiting (LOV).

Analysis of the ratings revealed no differences in the ratings according to group membership, knowledge of the presence of GM, or which questionnaire (SBE or LOV) respondents received. All respondents were therefore pooled in order to develop a single predictive model. Potential predictor variables included % basal area dead, mean tree height, mean DBH, % oak basal area, stand age, and total basal area. Since mountain laurel (*Kalmia latifolia*) flowers tend to be more abundant in sites with high mortality, additional potential predictor variables included the number of slides/site with visible mountain laurel flowers and the % of mountain laurel regrowth above 1 foot.

A quadratic function of tree mortality by preference rating best described the variability in ratings ($R^2 = .60$). The effect of flowering Mountain Laurel was also significant with the covariate "slides/site with visible flowers" increasing the R^2 to .74. Scenic preferences and appeal for visitation increased initially as mortality approaches 20-30%. Up to this point, increased sunlight, visual penetration, and undergrowth may have mitigated the negative effects of mortality. As mortality exceeded 20-30%, however, ratings dropped sharply.

Consistent with past studies, college students appear to provide a good representation of the general public in regard to reaction to forest insect damage. The potential for bias resulting from a group's views of proper forest management does not seem to be a factor in regard to preference ratings. In addition, basic awareness of the presence of insect damage did not significantly influence ratings, suggesting the limited usefulness of information or education efforts aimed at shaping public responses to GM damage. Finally, scenic beauty preferences appear to be closely linked to recreation behavior intentions, thus providing managers with a relatively simple and inexpensive surrogate measure of visitor behavioral responses to insect damage.