

Douglas-Fir Tussock Moth

Orgyia pseudotsugata (McDunnough)

Lepidoptera: Lymantriidae

Daterman, G. E. 1978. Monitoring and detection. In: Brooks, M. H.; Stark, R. W.; Campbell, R. W., editors. The Douglas-fir tussock moth: a synthesis. Tech. Bull. 1585. Washington, DC: *U.S. Department of Agriculture, Forest Service*; 99-102.

Objective: To review methods of monitoring *O. pseudotsugata* populations.

Abstract: The Douglas-fir tussock moth is a major defoliator of Douglas-fir, *Pseudotsuga menziesii* (Mirb.) Franco, and true firs, *Abies* spp., in western North America. Outbreaks occur quite unexpectedly so that a large number of trees are often defoliated before direct control measures can be applied. Growth loss, top-kill, and tree mortality are common during outbreaks. The traditional method of monitoring populations requires that early instar larvae be counted on individual sample trees. Such data are useful for establishing population trends, but greater resolution is required at low population densities to predict outbreaks. In the early 1970's improved monitoring and sampling techniques for *O. pseudotsugata* were developed in response to devastating infestations in the Pacific Northwest. A review of these sampling methods is presented here.

Sampling Procedure: Most of the information contained in this chapter is presented in other reviews of *O. pseudotsugata*. Sections describe larval density estimation by beat and lower crown samples, adult monitoring by pheromone trapping methods and their utility for predicting population trends, and post detection larval and egg surveys. This chapter on monitoring and detection is a useful supplement to other reviews if difficulty is encountered in understanding sampling principles and methodologies.