SIMULATING THE EFFECTS OF RIPARIAN ZONE DELINEATION AND

MANAGEMENT PRACTICES ON LANDSCAPE PATTERN AND TIMBER

PRODUCTION

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ABSTRACT

Best management practices (BMPs) are essential to giving the forest manager guidelines to follow that result in the least amount of negative impact on the forest landscape and corresponding riparian areas. The purpose of this research project is to determine the effect that different riparian zone delineations, based on BMP, will have on landscape pattern and timber production over time.

LANDIS will allow for the application of three buffer scenarios (a 20 m buffer, a 100 m buffer, and a variable width buffer based upon soil and topographic characteristics) upon the same landscape and the analysis of the results that each technique will have over a long period of time. These boundaries determined the extent to which even-aged harvesting practices would be applied. Results indicated that the most influential variable in the simulation was the application of harvest. The variable width buffer most efficiently protected the stream by widening the buffer from the stream at areas that are more susceptible to erosion or pollutant discharge. Analyzing the effects of different buffering scenarios upon landscape pattern and timber volume provides forest managers with better tools for deciding the best action to take in balancing timber harvest with the biological integrity of streams.