EVALUATION OF THE PRIVATE FORESTLAND OWNERSHIP PARCELIZATION
AND ITS EFFECTS ON THE FOREST LANDSCAPE IN THE SOUTHEASTERN
MISSOURI OZARKS

Dong W. Ko

Dr. Hong S. He, Dissertation Supervisor

ABSTRACT

This study investigates the impacts of the forestland ownership parcelization on species
composition, age structure and spatial pattern of the forest landscape. First, a computer
model was developed to create ownership patterns characterized by the actual shape and
size. Model is validated and applied to simulate ownership patterns with various
parcelization levels. Second, a transition matrix model is used to characterize the changes
in forestland ownership parcelization. Results suggest a strong tendency towards further
parcelization, characterized by parcel size classes smaller than 100 ha, and reveals the
contributions from purchases by the Pioneer Forest. Third, the harvest regimes in a
parcelized ownership landscape is spatially implemented for a forest landscape model –
LANDIS – to evaluate their effects on forest composition, age structure, and spatial
pattern. Results suggest that changes will be dominated by the successional process, with
significant but limited effects from parcelization levels and harvest intensities.