Caring for the Forest: Research in a Changing World

Poster Abstracts

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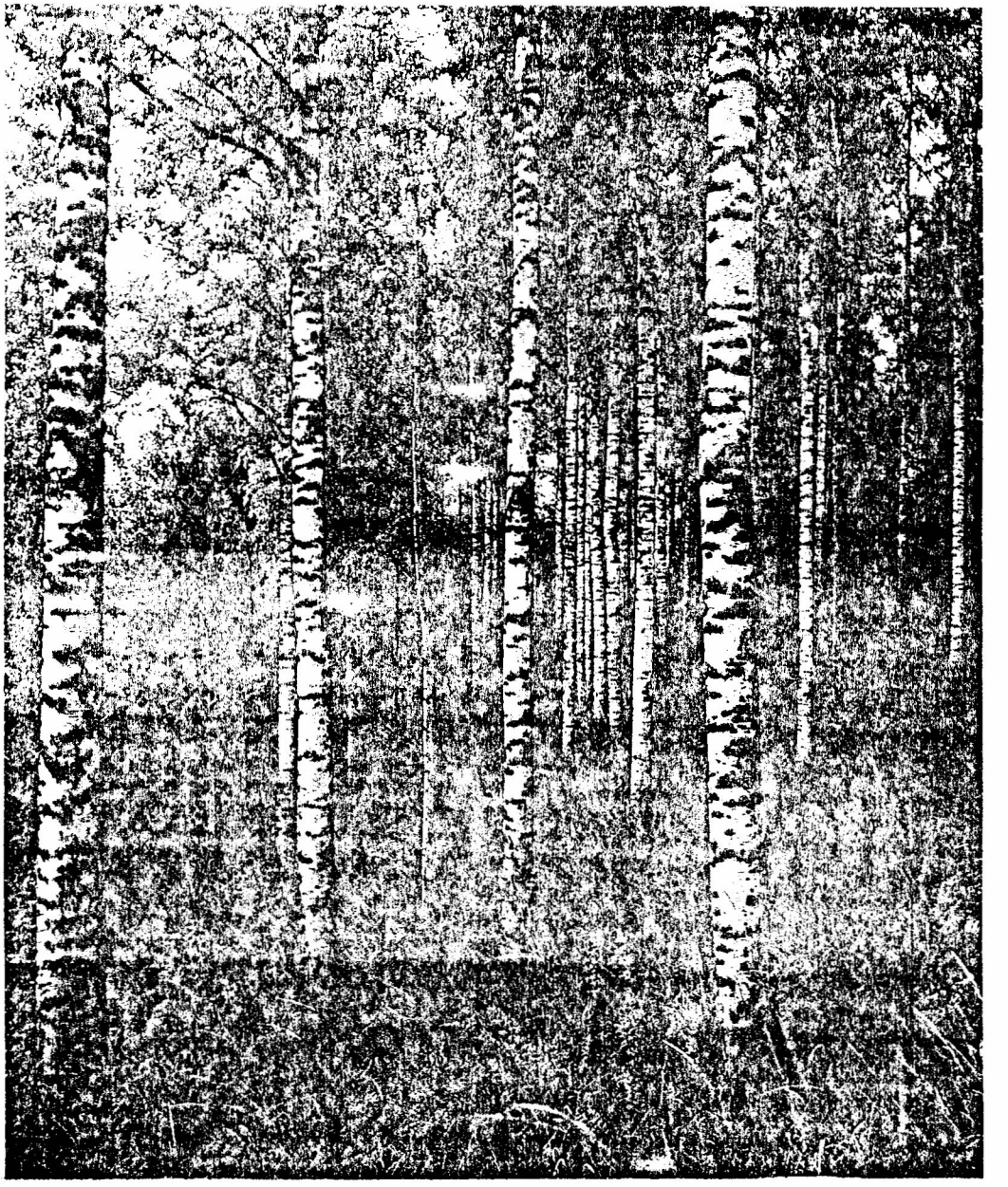

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Poster 225
A Simulation Model for the Distribution of Timber Assortments and Quality Classes to Different Kinds of Sawmills

Tiina Tolvanen-Sikanen, Lauri Sikanen and Pertti Harstela

The first aim of this study was to develop a theoretical model describing the flow of different timber qualities to different firms. The second aim was to study preliminary factors which affect timber distributions. In addition, we tested the hypothesis that the traditional way of organizing timber procurement does not direct timber flows optimally. The games theoretic approach and the principles of Monte-Carlo simulation were applied in developing of the simulation model. The most important factors of the model were tried to find for further studies with sensitive analyses. Empirical validation brought forth promising results in the area of one municipality. The buyer's awareness of a marked stand, the seller's willingness to sell a marked stand, the buyer's ability to pay for wood and the proportion of I quality pine logs in a marked stand affected the distribution of pine logs. The results supported the hypothesis that the traditional system, in which sawmills procure themselves all timber needed, does not direct timber optimally to users.

After developing and testing the model the second part of the study was started. Because the model was partly built based on educated guesses, the validity of the model was improved by gathering empirical data from phenomena described in the model.

First continuation study was dealing with selling behavior of timber sellers. The material was acquired by question blanks sent to forest owners. The acquired data was used for common analysis for the need of timber procurement organizations and for scientific analysis (e.g. factor analysis was utilized). In the factor analysis the aim was to formulate factors about selling behavior of the forest owner and use them in the functions of the simulation model.

Key words: timber procurement, simulation, probability, selling behavior.

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Poster 226
Logging Systems Management in the Amazon Region

Perminio P. Costa Filho

The poster describes the logging systems being used in the Amazon region, how they are developing and the research being undertaken to promote further progress towards an efficient logging operation with reduced damage, integrated with other aspects of a sustainable forest management plan.

Key words: logging systems, Amazon region, research.

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Poster 227
Soil Damages after Mechanical Removal of Waste Material by Forest Machines

Eberhard Eisenbarth

Following clear cutting exploitation it used to be practice so far to clean the sites by employing heavy clearing machinery for dragging the remaining waste material to mounds. As a consequence of the dynamically acting forces the soil is severely affected.

The question about the soil ecological effects of the removal was to be answered by a driving trial. In such an experiment to removal was tested by employing the clearing machine "Räumfix" connected with a MB-trac 1500 skidder in the Forest District Merzalben. The locality is characterized by sand deriving from "Mittlerer Buntsandstein".

Napping the area made clear that 65% of the site were driven on during the removal (driving on meaning: direct contact of the tires with the soil). 40% of the total area were driven on repeatedly. In a range of 20 meters on each side of the mounds the soil was driven on very intensively.

Alteration of the penetration resistance (Cone-