Increasing Efficiency of Log Transport

Issue: Transport of raw material from woods to consumption point contributes about 15 percent to the overall cost of wood fiber, a proportion that will rise along with fuel prices unless steps are taken to increase efficiency of the transport system.

Study Description: Loggers can theoretically increase their gross income by hauling more wood to consuming mills in a given period of time. It is important, therefore, to ensure that trucking capacity stays balanced with a logger's ability to cut and load timber in the woods. This is not a trivial problem, however, as the haul distance to consuming mills can vary a great deal over short periods of time. The logger providing his own transport must employ the number of trucks that minimizes transport costs when working close to the mill, and moves enough wood when operating far from the mill to maintain profitability. A more efficient approach to the transport problem would be to pool a fixed number of trucks among many loggers so that, at any one time, all are served optimally regardless of where they are working. Implementing a pooled truck resource system requires that a) the overall scheme maximizes wood flow, and b) all loggers are served equally. This project is intended to evaluate options regarding wood transport system effectiveness as influenced by structural changes, mainly use of intermediate yard facilities to minimize the impact of woodyards on haul turn times, and the effectiveness of various methods of dispatching trucks given knowledge of the state of the procurement system.

Status: A simulation model of woods-to-mill transport has been developed. Initial results comparing dispatch and transport system structure effects are being published, and further work on verifying the simulation model with field data is planned.

Benefits:

- *Lowered wood fiber costs*
- *Higher utilization of trucking capacity*
- *Reliable dispatch methods for shared transport service providers*

Cooperators: Industrial and Systems Engineering Department, Auburn University

Contacts: Tim McDonald