

2021 Western Region COFE Abstracts

(Order by Agenda)

TIME: 8:30 AM

TITLE: *Timber Faller, Rigging Crew and Operator Safety and Health with Tethered Logging Systems and OROSHA Variance Data*

PRESENTER: John Garland, PE. Consulting Forest Engineer, Professor Emeritus, FERM, Oregon State University, Affiliate Professor, Pacific Northwest Agricultural Safety and Health Center, University of Washington

ABSTRACT:

Timber fallers, rigging crews and tethered machine operators face different safety and health risks in the course of their work. Timber fallers and rigging crews face documented fatality and health risks but so do machine operators in tethered logging operations. Comparisons and contrasts between occupations reveal important differences. All groups face some common safety and health hazards.

The Oregon Occupational Safety and Health Administration (OROSHA) is responsible for safety and health regulations for Oregon employees. When tethered logging allowed machines on slopes over 50%, OROSHA had a regulation in place that prohibited such slopes unless approved by the manufacturer or special precautions were enacted. On advice by the Forest Activities Advisory Committee, OROSHA approved tethered logging operations on steeper slopes using a Research Variance for operations. OROSHA required information collection from employers as part of the variance on incidents and operations. Data shows substantial operating hours with minimum injuries and incidents. Regulations from OROSHA in the future will provide for rules governing tethered logging operations.

TIME: 9:15 AM

TITLE: *Slope stability and Forest Practices in Washington: regulations, guidance, FPAs, and roles of the geologist and forest engineer*

PRESENTER: Ted Turner, Weyerhaeuser

TOPICS:

- Potential effects of forest practices on landslides and erosion
 - Regulated landforms in WA
 - Guidance and tools for field practitioners
 - Mitigation examples: roads and harvest
 - Summary of recent and current research
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LOGGING BREAKOUT

TIME: 1:15 PM

TITLE: *Deadman anchoring design for cable logging: a new approach*

PRESENTER: Francisca Belart, Assistant Professor and Timber Harvesting Extension Specialist

ABSTRACT:

In the Pacific Northwest and other regions of high productivity forestry, reduced rotation ages for harvest have resulted in a lack of large stumps to serve as anchors for cable yarding systems. One of the most common anchoring alternatives to stumps is buried deadman anchors. Conventional design of these systems has been limited to simplified charts that account for soil resistance, as well as both shear and bending resistance of the deadman, typically a buried log. However, these charts are limited to larger deadman anchors of only Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco), which are likely not readily available in modern operations. Thus, revised simplified design charts are proposed considering a variety of different soil failure mechanisms, as well as several different wood types and bending conditions. This provides a quantitative perspective towards safe anchoring in modern forest operations.

LOGGING BREAKOUT

TIME: 2:00 PM

TITLE: *Survey of Harvesting Systems in New Zealand*

PRESENTER: Hunter Harrill, Assistant Professor and Timber Harvesting Extension Specialist

ABSTRACT:

Two comprehensive surveys were completed to measure the total number of ground-based systems and cable logging systems currently working in New Zealand, as well as provide some key characteristics about the crews. A total of 385 ground-based crews and 318 cable logging crews were identified in each of the two surveys, however it is recognised that there will be omissions due to crews not identified; possibly up to a further 10% comprising mainly independent (typically small) woodlot crews. Additional details were obtained that included crew size, number of workers and machines, as well as daily production target.

For ground-based crews the dominant primary extraction method for 63% of the crews was grapple skidding, with a further 16% using forwarders. Average crew size was 5.4 (range 3-9), indicating a total of approximately 2,150 forest workers directly employed in ground-based harvesting crews. Crews operated 4.2 machines on average (range 2-7), resulting in a total of 1,680 machines currently in use. Production targets varied from 85 to 700 tonnes per day, with an average of 291 t/day. Of the 318 yarders surveyed: 38% were Madills, 29% Thunderbird, 10% Brightwater, with the remaining 23 percent produced by more than 12 manufacturers. For cable logging crews for the majority (50%) the preferred rigging configuration used was some form of grapple yarding (e.g. both mechanical and motorized grapple carriages) operated on a running or live skyline system, respectively. The average crew size was 8.4 (range 4-12) indicating a total of approximately 2,672 forest workers directly employed in cable logging crews.
