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Heavy Equipment Trials



The heavy equipment trials took place in the West Fire Region of Ontario in response to the increasing amount of blowdown/hazardous fuels and the need for a safe method to work within them.

- The purpose of the trials was to determine the optimum types and combinations of heavy equipment that could work in hazardous/blowdown fuels
- Three sample sites were selected in the Sioux Lookout and Red Lake Districts
- The trials focussed on building fire guard, operational techniques, creation of crew access, assistance in fire suppression and hazards



The heavy equipment that was selected for the trials included:

- Mulcher
 - Grapple Skidder
 - Bulldozer
 - Excavator with a thumb
 - Feller Buncher with a 340° articulating head
- The trial sites included upland, mature jack pine and spruce stands where the disturbance was >5 yrs old as well as upland mixedwood site with budworm damaged balsam where the disturbance was 15 yrs old



Mulcher - \$350/h - 1km/h through budworm damaged fir - initial pass is driveable by ATV

Grapple Skidder - \$100/h - 2km/h through budworm damaged fir - easy hoselay for crews after one pass

Bulldozer - \$180/h - 3km/h in moderate - heavy blowdown - moves quickly and leaves a wide guard

Excavator with a thumb - \$180/h - 0.66km/h through 75% dry blowdown - most versatile machine

Feller Buncher - \$180/h - 0.66km/h through 75% dry blowdown and 0.5km/h through moderate to heavy blowdown - able to cut close to fires edge



Equipment Limitations

Mulcher - difficult time working at right angles to the damage - limited by rocky sites and low availability

Grapple Skidder - large stumps inhibit construction of fire guard - clearing to mineral soil in medium to heavy blowdown areas difficult due to rigid blade

Bulldozer - risks throwing a track if not pushing straight - green blowdown builds and resists machine

Excavator (thumb)-inhibited by standing mature trees

Feller Buncher – expect breakdowns - hydraulic hoses vulnerable - needs articulating head



Recommended Equipment Combinations Based on Results

1. Feller buncher with two excavators with thumbs
2. Feller buncher with one bulldozer
3. Two excavators with thumbs
4. Two bulldozers
5. Feller buncher with two skidders
6. Excavator with one skidder
7. Two skidders