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Region 6

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Insect and Disease Potential in Windthrown Timber - May 21, 1971 Storm

The severe windstorm of May 21, 1971 in eastern Oregon created a potential threat of bark beetle epidemics developing in the down trees and spreading to standing timber. Such epidemics have occurred in the past. Fungi that infect the down and broken trees increase the rate of wood deterioration and reduce the quality of the lumber.

The majority of the affected timber is ponderosa pine but some true firs, Douglas-fir, lodgepole pine and Engelmann spruce was also affected. Taking into account past experience, we can speculate on what insects and diseases are likely to do and what can be done to minimize their damage.

Insect Potential

Ponderosa pine.--Windfall in ponderosa pine has generally been followed in 1 or 2 years by outbreaks of the western pine beetle, *Dendroctonus brevicomis* LeC. The beetle hazard is greatest where the blowdown is heavy, beetle populations are high, and the surrounding green timber is in a susceptible condition. Substantial concentrations of windthrown trees are required to produce the heavy broods of western pine beetles that lead to massive outbreaks. Even scattered blowdown may lead to increased tree killing if the conditions are favorable.

The down trees will likely serve as a breeding ground for the western pine beetle throughout 1971 and possibly the 1972 growing seasons. Beetles will emerge from the down trees by mid-August and most likely attack other down trees. Progeny from this attack will emerge in the spring of 1972 and may attack weakened standing trees. Salvage of the down and weakened trees as a preventive measure should be completed by this time for the best results.

Up to now, no outbreaks of Oregon pine ips, *Ips pini*, have been created by concentrations of blowdown.

Lodgepole pine.--In general, windthrow of this species does not appear to favor buildups of the mountain pine beetle, *Dendroctonus ponderosae* Hopk. In this case however, there are extensive areas of susceptible-sized lodgepole pine nearby. If an outbreak is to develop, the beetle attacks will occur in the summer of 1972.

Engelmann spruce.--In Oregon and Washington, several small outbreaks of the Engelmann spruce beetle, *Dendroctonus rufipennis* Kirby, resulted from windthrown spruce. Because of the relatively small volume of spruce involved, there is little danger from this beetle.

Douglas-fir.--Windthrown Douglas-firs may trigger outbreaks of the Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk. Once an outbreak develops in eastside Douglas-fir, it may continue for some time. Prompt salvage of down and damaged trees is a good preventative.

True firs and larch.--Blowdown in these trees does not create a significant threat of bark beetle epidemic.

Disease Potential

The pattern of fungal succession in down timber usually starts with blue stain and mold. Sap rotting fungi follows. Most sap rots are restricted to the sapwood but some such as *Fomes pinicola* may continue developing in the heartwood. Heart rot organisms are lost in the succession and complete deterioration of the wood.

Blue stain.--Blue stain may start on the exposed portion of the down trees a few months after blowdown. Severe staining usually follows insect attack, especially during the summer. It has been shown that the stained wood may decay more rapidly than the unstained wood.

Decay in living trees.--Decay and other diseases in the damaged standing trees will be a major loss that will continue over a long period of time. These indirect losses cannot be measured accurately and we may never know their full impact.

Other disease potential and defects.--Sunscald and shock from sudden exposure around the heavy blowdown result in some damage in the residual stand. In mistletoe-infected stands the blowdown may cause spread and intensification of the parasite. The mistletoe-infected residual trees in the overstory should be removed before the blowdown areas are regenerated or to protect the existing young growth from increased infection.

Radial cracks or checks that occur in down timber may be a serious defect especially on drier sites.