Fire and Environmental Criteria

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THIS subject is somewhat of a balancing act. In the process of carrying out proper forest management activities, certain changes and temporary disruptions to the environment are unavoidable. Our aim is to minimize the negative aspects to the environment as associated with these activities.

It must be realized that increased environmental protection costs money. An example is the reduced revenue from timber sales on Washington's state lands. In 1974, additional environmental protection reduced our timber sales revenue in excess of 10 million dollars. (Department of Natural Resources timber sales volume represents only 10 percent of Washington's total harvest.) Most of these costs were incurred by added soil and water protection requirements in road construction and logging methods.

Before I discuss the Department of Natural Resources' working relationship with the two agencies represented at this table today, I would like to outline the Department's policy concerning the use of fire as a management tool. Prescribed fire was used last year on 7,200 acres of State land, 11,800 acres of private and 20,200 acres of federal land in the State of Washington. This represents approximately 20 percent of the area logged or rehabilitated. The remaining 80 percent was not burned due to a variety of reasons including shallow soils, good utilization, adjacent unburned slash, etc.

LOGGING DEBRIS IS BURNED TO:

1. Abate or prevent a forest fire hazard. Logging slash or debris is extremely flammable. Many of Washington's disasterous forest fires have been started in or expanded by areas of logging debris. Controlled burning prevents the buildup of large contiguous areas of flammable slash. Logged areas near or adjacent to public roads or well-used private roads are especially hazardous and burning is necessary to reduce wildfire starts.
2. Prepare land for reforestation. Burning of slash reduces reforestation obstacles and exposes the mineral soil and full light conditions desired to re-establish a new forest crop after harvesting. It is nearly impossible to adequately reforest an area covered by heavy slash. Burning also slows the growth of undesirable brush species on recently logged areas.
3. Rehabilitate brush areas. Fire is used to convert brush areas and other non-productive sites to desirable forest cover. There are 46,000 acres of this type of State-owned land. These lands are presently being rehabilitated at the rate of 5,000 acres yearly. Most of these sites are cleared with bulldozer and the debris burned.
4. Reduce insect and disease buildups. Slash burning prevents the buildup of forest insects and disease by reducing the amount of slash. Slash is an ideal breeding ground for certain insect populations.

   The positive benefits of slash burning include reducing the possibilities of large wildfires, providing improved wildlife and range habitat, increasing reforestation success, enhancing the visual resource by removing unsightly slash and preventing the buildup of forest insects and disease in dead or damaged materials.

HOW THE DEPARTMENT OF NATURAL RESOURCES BURNS SLASH

We are not attempting to whitewash slash burning by claiming detrimental effects do not occur. Any method of slash burning may endanger the environment if the burn isn't properly planned and executed. Foresters are required to write prescriptions (or plans) so an area can be burned safely with minimal adverse results.

1. In many instances we have found that spring and summer burning is more desirable than the traditional fall burning period. The reasons for spring and summer burning include:
   a. Avoid damage to the soil because soil moisture is still high.
   b. Surrounding vegetation is still green, thus minimizing slop-over of fire into the surrounding forest.
   c. Completed before dangerous dry east winds of autumn occur.
   d. Completed before persistent air inversions occur which are more common in the months of September and October. (less air pollution problems)
   e. Spreads burning over more of the year, thus easing a build-up of fire control and smoke problems.
   f. Slash burns faster, the fire dies out faster and is easier to completely extinguish. Heavily decadent old growth slash areas are exceptions. The heavy fuel results in the retention of fire in rotten stumps and roots for additional fire hazard during the summer.

The Department of Natural Resources and some private industries use browning agents and mass electrical ignition on summer burns. Rapid ignition and dry fuels are essential in maximizing smoke ventilation and dispersal and better fuel clean-up in light fuels.

2. Areas to be logged are now more keyed to the problems of burning. Whenever possible, areas to be logged are laid out to make burning safer and less detrimental to the environment.
3. Burning is done when fuel moistures are low so rapid burning is accomplished with less smoke. Dry fuel produces less smoke and fly ash per unit of material.
4. Whenever possible, we prefer to broadcast burn. There is much less soil compaction and erosion than if a bulldozer is used to pile the material. Less material is burned and less smoke produced because only the smaller material is consumed. Larger cull logs are left in place which provide some degree of shading for young trees and slows soil erosion.
5. Adjoining lands are protected from fire damage by previously installed fire trails and water sprinkler systems, retardants and

trained fire crews. Where larger streams are involved, buffer strips are left.

6. Slash burns are allowed only when they meet the criteria of the Smoke Management Plan of the State of Washington which is designed to minimize smoke accumulations in populated areas. Visual smoke nuisances, temporary discomfort from smoke and fly ash problems are minimized.
7. Good management plans identify areas which are not to be burned. These include:
   1. Areas of thin soil (especially on steep slopes.)
   2. Areas having a well stocked understory of reproduction following logging.
   3. Areas where good utilization has removed small size material and are therefore not a fire hazard.
   4. Areas adjacent to unburned slash of other ownerships.

DEPARTMENT OF NATURAL RESOURCES COOPERATION WITH DEPARTMENT OF ECOLOGY, ENVIRONMENTAL PROTECTION AGENCY, AND LOCAL AIR POLLUTION AGENCY

The Department of Natural Resources maintains a good working relationship with the various environmental agencies on fire and land use matters. I will outline some of the procedures utilized in maintaining this relationship:

A. Cooperation between Department of Natural Resources and the Department of Ecology.
   1. Day-to-Day basis:
      a. Contact Department of Ecology daily to inform personnel of:
         (1) Weather forecast including smoke management and air ventilation conditions. Confer with meteorologist if there is a discrepancy between forecasts.
         (2) Planned burns exceeding 100 tons of consumable material.
         (3) Data on any wildfires.
   2. Intermittent contact with Department of Ecology:

a. Meetings to discuss and implement changes to improve Smoke Management Plan.
b. Meetings concerning burning permit agreements.
c. Meetings and hearings on alternatives to open burning.
d. Field trips and aerial observations to inspect critical slash burns.

B. Cooperation between Department of Natural Resources and local Air Pollution Control Authority.
1. Burning permit agreements.
2. Understandings concerning procedures on violation of open burning regulations.
3. Contacts to resolve occasional problems and alert each other to field situations.
4. Attendance and occasional presentations at Board of Directors meetings and Control Officer Meetings.

C. Cooperation between Department of Natural Resources and Environmental Protection Agency.
1. Make recommendations and studies concerning proposed Environmental Protection Agency Regulations.
2. Design Smoke Management Plan to comply with federal (Environmental Protection Agency) and State (Department of Ecology) air quality standards.

In 1974 (thru October 14) there have been 565 controlled slash burns in the State of Washington resulting in almost 22,000 acres treated. Over 900,000 tons of forest debris were consumed. Of these 565 burns, only two resulted in considerable smoke nuisance problem. This is a record we are proud of, but it isn't perfect. We are continually working to improve the system and are getting better local weather data. The Department of Ecology and the local air pollution control agencies have provided assistance in this area.

In the future, increased utilization of the tree will not only decrease the need for burning but the tonnage per acre burned will decrease. Smoke dispersal will be improved due to increased knowledge of local weather conditions.