

# Fire and Environmental Criteria

HENRY F. DROEGE

*Supervisor*

*Air Resource Division*

*Washington State Department of Ecology*

THIS morning, I am representing a state pollution control agency in a panel to discuss fire and its relation to the environment. I represent the Washington State Department of Ecology, which is the state air pollution control agency. I know that many of you here this morning are aware that the Department of Ecology cooperates with the Department of Natural Resources in the Washington State Smoke Management Plan. In general, we regard the Smoke Management Plan as a successful program to minimize the adverse effects of slash burning upon the populated areas of Washington.

The first goal of a regulatory agency is to minimize the adverse effects. Our second goal is to reduce the actual amount of burning wherever possible. To some extent, a successful smoke management program removes the pressure to reduce the amount of material to be burned and this effect gives us some concern.

We believe that Smoke Management Plan is a good program. We also believe that there must be continued efforts for greater utilization and thereby further reduction in the amount of material that is burned in any given year.

One question that is always asked is how much of a problem is open burning in relationship to air pollution. This is usually asked by someone who believes that it is no problem at all.

Any open burning of natural vegetation will result in the emission of particulate material, oxygenated hydrocarbons, carbon monoxide, and possibly other contaminants. These emissions cause:

- 1) A reduction of visibility
- 2) The fallout of flyash and partially combusted wood particles on adjacent areas;
- 3) In some instances, a perceptible and obnoxious odor and;
- 4) Certain adverse health effects.

To some extent, the order in which I have presented these adverse effects indicates that order of priority as far as a state air pollution regulatory agency is concerned. The visibility reduction reports are from people in Seattle who cannot see Mount Rainier, or from aircraft pilots over the state who see clouds of smoke coming from the forested areas, or from travelers in the Cascades or the Olympics who find that occasionally, the road or the path is obscured by smoke. As far as the general public is concerned, visibility is the major and almost only adverse effect. The emissions from all sources in the state including open burning, are either measured by source tests or estimated by making certain assumptions and a total emission inventory calculation. The effect of open burning upon this emission inventory ranges from 3 percent to 10 percent, depending upon the area. This relatively small percentage may be somewhat misleading, since open burning may be concentrated in certain areas and during certain times of the year and in some instances, may be 30 to 40 percent of the total problem. The control program included in the Smoke Management Plan is to extend the time when open burning is practiced, prevent smoke from impacting the populated areas, and encourage burns on days when the dispersion potential is relatively large. I would like to mention briefly the tremendous variation in ventilation effects. A simple measure of ventilation potential in an area is to multiply the maximum mixing heights for any given day by the average transport winds for that day. When both of these values are given in meters, the number may range from 1500 cubic meters per second to 30,000 cubic meters per second, or even more on certain days. I believe that two things have happened as a result of this Smoke Management Plan. The total tonnage burned in any

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given year is probably reduced, although this may be hard to document. The use of better burning practices has resulted in a considerable reduction in the total emission of contaminants and as I have already stated, the impact has been lessened because the time has been increased when burning is practiced.