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FORESTRY HERBICIDE ENVIRONMENTAL RISKS-- AN EIS PERSPECTIVE. D.G. Neary, U.S. Forest Service, University of Florida, Gainesville, 32611; and J.L. Michael, U.S. Forest Service, Auburn, AL 36849

ABSTRACT

The U.S. Forest Service is in the process of completing Environmental Impact Statements (EIS's) on vegetation management for three physiographic regions of the South. This includes all forestry activities involving manipulation of plants in national forests and grasslands of the Coastal Plain-Piedmont, Appalachian Mountains, and the Ozark/Ouachita Mountains. These EIS's are linked to the land management planning process and provide a mechanism for evaluating appropriate vegetation management techniques, addressing public concerns, and meeting requirements of the National Environmental Policy Act. Each EIS addresses a number of issues, but the environmental impact of herbicides is a focal point. The environmental consequences and risks which are addressed in each regional EIS include: (1) Human Health and Safety; (2) Wildlife; (3) Threatened and Endangered Species; (4) Vegetation; (5) Soils; (6) Water; (7) Air; (8) Economics, and; (9) Social Values. The herbicides include 2, 4-D, 2, 4-DP, dicamba, fosamine, glyphosate, hexazinone, imazapyr, picloram, sulfometuron methyl, tebuthiuron, and triclopyr. Diesel fuel, kerosene, and limonene are also evaluated.

Regarding human health and safety, the risks are a function of exposure and dose. For typical applications, the public should not be affected (both systemic and reproductive effects) by the herbicides or additives considered. Workers using 2,4-D, 2,4-DP, and tebuthiuron have higher risks which can be mitigated by protective equipment. Accident frequency rates are much higher for other vegetation control methods. Herbicides pose low toxicological risk to most wildlife. Habitat alteration can be beneficial or detrimental, depending on species. Many questions exist regarding threatened and endangered species, especially plants, but typical use rates do not pose a significant risk. Mitigation measures are important for protecting these species. Herbicides disrupt vegetation succession, but there is no evidence that normal forestry applications cause permanent effects. Herbicide use in forestry can significantly reduce erosion and resulting stream sedimentation. While herbicides should be used with care near water, the risks to surface water and ground water from typical applications are minimal. Herbicides can drift offsite in the air, but their use can generally improve air quality since the need for burning decreases. Herbicides can cause short-term effects on visual quality but do not affect cultural resources. The labor requirements and costs for herbicides are lower than mechanical or manual methods.