

# HERBICIDES USED AND METHODS OF APPLICATION IN R/W VEGETATION MANAGEMENT<sup>1</sup>

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For many reasons, vegetation management practices have been changing, and these changes are of direct concern to those responsible for R/W use and management. Public interest, federal, state and local regulations, environmental awareness, energy requirements and economic constraints have all focused attention on R/W practices. As a result of what is being done (or not done), favorable or unfavorable reactions can affect utility planning, construction and operations.

Objectives of a R/W vegetation management program include (1) RELIABILITY of service, (2) SAFETY to the public, land owners, land users, and to maintenance personnel, (3) ENVIRONMENTAL acceptability, and (4) ECONOMIC feasibility. Incidentally, these criteria do *not* include reducing unemployment, increasing the nation's output of wood fiber or other worthwhile but irrelevant objectives.

The long-term objective of herbicide treatments is to establish plant communities that can be economically maintained. Prescription programming offers the best opportunity in managing complex R/W plant communities. Constant training and supervision of personnel is the real key to attaining this objective. Longer maintenance cycles, reduced amounts of herbicide, multiple use, lower costs — all these benefits result from prescription programming and establishment of self-maintaining plant communities.

Management practices vary from one region of the country to another, based partially on climatic, physiographic and other differences. Because of these regional variations in vegetation and in management methods, Robert Bailey's "Ecoregions of the United States" was simplified and used as the basis for regional boundaries.

This map has also been used by the Forest Service, the Electric Power Research Institute (EPRI), Fish & Wildlife Service (FWS), and other

public and private agencies. For example, it is currently the basis for research projects concerning transmission R/W's by EPRI and FWS.

From horses to helicopters, there are many methods from which to select, based on such factors as: overhead clearance and other line characteristics, species and age of target vegetation, abundance and occurrence of desirable species, topography, soil, access, equipment and personnel availability, season and aesthetics. Sensitive areas such as crops, ornamentals, wetlands, and other R/W resources and needs also determine what to use, how and where.

## Survey Population

Data compiled and presented here is based on vegetation management practices of more than 100 electric utilities in all parts of the country. Of those responding to our survey, the following shows the amount of R/W acreage under some form of management:

**Table 1. Survey to determine scope and methods used.**

	<i>Northeast</i>	<i>Southeast</i>	<i>West</i>
<b>R/W acreage managed</b>	70%	70%	25%
<b>Methods used</b>			
Manual	10%	10%	30%
Mechanical	4%	65%	52%
Herbicide	86%	25%	18%
<b>Herbicide application methods</b>			
Selective Basal	53%	12%	4%
Foliage-Air	24%	77%	1%
Foliage-Ground	9%	6%	67%
Selective Foliage	11%	—	6%
Miscellaneous	3%	5%	22%

<sup>1</sup>Presented at the annual conference of the International Society of Arboriculture in Toronto, Ontario, Canada in August 1978.

**Table 2. Most commonly used herbicides.**

	<i>Northeast</i>	<i>Southeast</i>	<i>West</i>
Selective basal	(1)* 2,4,5-T (2) Picloram/2,4,5-T (3) 2,4-D/2,4,5-T	2,4-D/2,4,5-T 2,4,5-T Picloram/2,4,5-T	2,4-D/2,4,5-T
Foliage-air	(1) Picloram/2,4-D/ 2,4,5-T (2) 2,4,5-T (3) 2,4-D/2,4,5-T/ Dicamba	Picloram/2,4-D 2,4,5-T Picloram/2,4-D/ 2,4,5-T	---
Foliage-ground	(1) Picloram/2,4-D (2) 2,4-D/2,4,5-T (3) Picloram/2,4-D/ 2,4,5-T	Picloram/2,4-D 2,4-D/2,4,5-T Dicamba/2,4-D	Picloram/2,4-D 2,4,5-T 2,4-D/2,4,5-T
Miscellaneous	Picloram Pellets	Picloram Pellets	Picloram Pellets

\*( ) = Ranking of use

**Table 3. Cost range for methods.**

	<i>Northeast</i>	<i>Southeast</i>	<i>West</i>
Selective basal	\$80-\$150 (1)*	\$150-\$200 (2)	-----
Foliage-air	\$80-\$120 (2)	\$55-\$ 80 (1)	\$85-\$300 (4)
Foliage-ground	\$80-\$170 (4)	\$75-\$120 (3)	\$85-\$400 (1)
Selective foliage	\$30-\$130 (3)	-----	\$60-\$125 (3)
Miscellaneous	\$60-\$300 (5)	\$60-\$125 (4)	\$125-\$200 (2)

\*( ) = Ranking of use

Although beyond the scope of this presentation, it is clear how important 2,4,5-T is — both alone and in combination with other herbicides. The economic and environmental consequences of further restrictions against 2,4,5-T for R/W management as well as forestry, rangeland and other permitted uses would be tragic.

In conclusion, R/W management practices vary considerably, depending on regional differences, terrain, plant communities, and many other fac-

tors. Current trends are toward more selective herbicide applications, leading toward low-cost self-sustaining vegetation complexes. These are proving most acceptable to all those interested in R/W management and land use.

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