

MANAGING TRANSMISSION LINES FOR WILDLIFE ENHANCEMENT

by Keith E. Hanson

Abstract. Minnesota Power implemented a wildlife management plan in 1975 as a method to control undesirable vegetation on its transmission rights-of-way system. Selective and special vegetation management practices are being utilized to address regional environmental issues and reduce long-term vegetation control expenditures.

Résumé. La compagnie Minnesota Power a élaboré un plan de gestion de la faune en 1975 comme méthode de contrôle de la végétation indésirable sous les lignes de transport. Les pratiques d'aménagement spéciales et sélectives sont utilisées afin de solutionner des problèmes environnementaux régionaux et ainsi réduire à long terme les coûts d'entretien de la végétation.

Minnesota Power (MP) is an investor owned utility located in north central and northeastern Minnesota. Our transmission system involves approximately 2,015 miles or 27,200 acres which are located in mature aspen/birch, spruce/fir and northern hardwood forests. These forest types provide an excellent opportunity to improve the quality of wildlife habitat and our wildlife management plan helps to fulfill two of our corporate responsibilities: 1) to provide reliable energy safely, efficiently and at reasonable rates, and 2) to respect and protect the quality of land, air and water by operating in harmony with local, state and national environmental objectives. Although utility rights-of-way improve wildlife habitat by creating forest openings, there are other management practices that can further meet the multiple needs of our wildlife species.

Prior to 1975 MP vegetation management's objective was to eradicate all vegetation except for grasses and herbaceous cover types within the limits of the rights-of-way. This was accomplished by nonselective aerial and ground chemical applications.

Our vegetation management philosophy changed dramatically in the early 1970's. Environmental issues prompted the state of Minnesota to require permits for new transmission facilities. In order to meet expanding electrical demands of the

taconite industry, additional generation and transmission facilities were necessary. As a result of the state permitting process, we were required to address vegetation maintenance as part of our construction permits.

In 1975 Minnesota Power implemented a formal wildlife management plan for its transmission line rights-of-way system. The plan was developed in cooperation with three regional wildlife managers from the Minnesota Department of Natural Resources and five county wildlife managers. The plan is based on selective treatment (eradication of tall growing species) and is designed to improve wildlife habitat primarily for the white-tailed deer, ruffed grouse and woodcock. General and Special Management Practices are involved.

General management practices. In an attempt to develop habitat diversity and to meet the multiple needs of the various wildlife species in our area, the maintenance objective for the majority of our transmission rights-of-way system is to maintain the central one-third area of the right-of-way in a grassy-herbaceous type of cover. The outer two-thirds of the right-of-way will be managed to encourage the development of a variety of herbs, shrubs and low-growing trees which have potential value as wildlife food and/or cover. This objective is met through selective high-volume foliar chemical applications. Selective backpack foliar and basal applications are performed once the tree densities have been reduced.

Special management practices. The following specific management practices will be carried out in a further attempt to meet the multiple needs of the major wildlife species. These areas are identified by the state/county wildlife managers, and special management practices agreeable to both parties are developed.

Deer yarding areas. In areas where the rights-of-way lie near known or potential deer wintering yarding areas, a greater portion of the right-of-way

than the center one-third will be maintained in a grassy herbaceous cover type in order to maximize the quantity of grasses, sedges and other herbaceous foods for early spring grazing. This is accomplished primarily with nonselective chemical applications.

Areas of the rights-of-way that pass in close proximity to deer yards will be maintained entirely in shrubs and other young tree shoots in order to maximize the quantity of winter browse food. Mechanical and chemical means are used to encourage this type of growth.

Water fowl nesting areas. In areas where the rights-of-way cross major streams and marshes, waterfowl food and nesting cover will be developed and maintained. Where deemed advisable, seeding of desirable grass-clover mixtures will be done in an area up to 300 feet on both sides of the water area.

In areas where the rights-of-way intersect small streams or intermittent waterways, a brushy cover of alder and other shrubs will be maintained across the entire right-of-way to provide food and cover for ruffed grouse and woodcock. Selective basal applications are utilized to encourage this type of growth. When natural vegetation does not provide an adequate "screen", supplemental plantings of slow-growing conifers and low-growing deciduous trees and shrubs are considered.

Wildlife travel lanes. Vegetative cover across the entire right-of-way will be maintained at known wildlife crossings and at selected locations to obstruct visual sight paths down the right-of-way. Selective basal applications are used to develop these areas. When natural vegetation does not provide an adequate "screen", supplemental plantings of slow-growing conifers and low-growing deciduous trees and shrubs are considered.

Nesting sites. Our transmission structures also serve as ideal nesting locations for osprey. Annually we encounter approximately 150 nests on our facilities. Activities near these nests are coordinated, if possible, to avoid working in these areas when the osprey are nesting.

In addition to osprey nests, two pairs of bald eagles have nested on our structures the past three years. Maintenance activities in these areas are scheduled between October and February to avoid disrupting the breeding and raising of the

young.

When osprey nests pose a problem for our facilities, they are removed from our structures and nesting platforms are erected next to the old nests. Sticks from the old nests are nailed to the top of the platform to encourage the ospreys to nest on the platform. This has been very successful.

Minnesota Power has been involved with an osprey relocation program the past five years. The young osprey are removed from nests which have multiple young when they are about six weeks old. At least one chick is always left in the nest. About 80 young osprey have been relocated to various parts of Minnesota.

Economics. A cost-effective wildlife management plan was one of our initial concerns. It was our opinion in 1975 that to reduce costs, medium/heavy tree density had to be reduced. We were also hopeful that if tree density could be reduced our treatment cycles could be increased beyond 4-5 years.

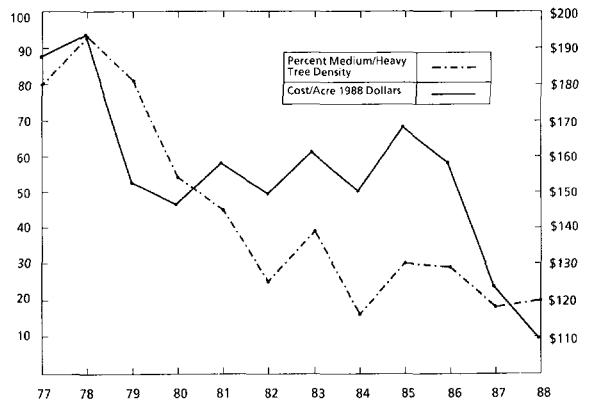


Figure 1. Annual comparison of medium/heavy tree density and cost/acre, 1977-1988.

Table 1. Summary of results for selective vs. nonselective treatment

	Selective treatment		Nonselective treatment	
	First cycle	Second cycle	First cycle	Second cycle
Scattered/light density	8%	87%	14%	30%
Medium/heavy density	92%	13%	86%	70%
Cost reduction from first treatment	—	36%	—	9%

As indicated in Figure 1, for the period 1977-1988, medium/heavy tree density has decreased from approximately 80% to 20%, and cost/acre from \$188/acre to \$108/acre. Cycle lengths for the same period have increased from 4-5 years to 7-8 years.

Figure 1 also shows that from 1981-1985 cost/acre fluctuated at a relatively high level even though medium/heavy tree densities continued to fall. It is our opinion that costs remained high because we restricted maintenance activities to the months of June through August. Once we allowed our contractors the flexibility to schedule maintenance work within a broader time frame, costs began to drop significantly.

Selective treatment has played an integral part in developing our wildlife management plan and in reducing vegetation maintenance expenditures. Table 1 summarizes the results of selective versus nonselective treatment between first and se-

cond cycles. Selective treatment has been more effective in reducing medium/heavy tree densities and costs than nonselective treatment.

Conclusion

Implementing a wildlife management approach to vegetation management has been very beneficial to Minnesota Power. Vegetation maintenance expenditures have been reduced 40% and the quality of wildlife habitat on our rights-of-way has been improving. Our wildlife management plan helps us meet corporate objectives and fosters good working relationships with state/local governmental agencies and the general public.

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COHEN, LORI. 1987. **How do you move a large tree?** *Landscape Contractor*, September, pp 8-9.

With the aid of sophisticated equipment now available, it's not surprising that landscape contractors today have refined to a science the job of moving large trees. Equipment such as tree movers, hydraulic spades, winches, cranes, large bulldozers and sleds not only help to make the job more manageable, but almost guarantees success. To ensure success when moving a large tree, the most important thing to consider is the type of tree you are going to move. The environment you are moving it to and the time of year you are moving it are also very critical. The tree transplanting involves three main operations: digging or lifting, moving to the new site, and replanting. After the tree is in place, proper pruning will balance the crown and root system without altering the symmetry of the tree. Conditions at the new location will determine whether or not the tree needs to be staked. To prevent transplant shock, anti-desiccants sprayed on the tree help retain moisture in the leaves.