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# Minnesota Roadside Wildflower Task Force

## Report and Recommendations

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# INTRODUCTION

In November 1987 Lt. Governor Marlene Johnson called together the Commissioners of the Departments of Transportation and Natural Resources, and the director of the Minnesota Office of Tourism and challenged them to make wildflowers a cornerstone in the beautification of Minnesota's roadsides. This challenge was prompted by efforts to preserve and restore native wildflowers along roadsides and in railroad rights-of-way, the interest of *MINNESOTA BEAUTIFUL* in the issue and by the designation of the Twin Cities as the host for the 1990 Olympic Festival.

As a result of this meeting the Roadside Wildflower Task Force was appointed to develop policy recommendations for the preservation and restoration of native wildflowers along Minnesota's roadsides. The Task Force was also asked to recommend ways to increase the public awareness of the value of roadside wildflowers throughout the state.

Task Force members represent several state agencies, private organizations and the citizens of Minnesota.

## ROADSIDE WILDFLOWER TASK FORCE MEMBERS

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## MISSION STATEMENT

The Roadside Wildflower Task Force was formed in 1987 by Lieutenant Governor Marlene Johnson to develop a wildflower roadside policy that is in Minnesota's best interest, both now and in the future. The Task Force was called to recommend ways in which the state can preserve existing native\* wildflower\*\* populations, restore native wildflowers where appropriate, and educate the public about native wildflowers along Minnesota's roadsides.

*\*Native:* Native refers to a plant species' place of origin. Native plants are often thought of as the original wild species of an area.

Native plants in Minnesota:

- were present here long before European settlers arrived in the 1800's. As such, they are a part of Minnesota's natural history.
- form naturally diverse plant communities.
- are well adapted to Minnesota's soils, wildlife and extreme climate.

Non-native plants:

- have been introduced into Minnesota from outside the state by settlers, gardeners or simply by accident since the 1800's.
- can displace native plants because their natural checks and balances do not exist here.
- form less diverse plant communities that often do not provide good habitat for native wildlife.

*\*\*Wildflower,* for the purposes of this report, includes both wildflowers (forbs) and grasses.

## EXECUTIVE SUMMARY AND RECOMMENDATIONS

Minnesota's roadsides, composed of long narrow corridors and widened interchanges, comprise more than 260,000 acres of state land. County and township roadside land triple this figure. These are the most visible acres in the entire state. They are looked upon daily by thousands of residents and visiting travelers. They are a window to a passing glimpse of Minnesota's unique natural heritage. They provide some of the most valuable wildlife habitat in the state and are often the location for one of the state's rarest plant communities--the tallgrass prairie.

Roadsides where native vegetation still exists have limited to no weed and erosion problems. The ever changing array of wildflowers provides a succession of color throughout Minnesota's seasons. Roadside management practices that enhance native vegetation increase the diversity of wildflowers, improve wildlife habitat, reduce mowing and the use of herbicides.

The Task Force recognizes the loss of right-of-way native vegetation in the prairie regions of the state due to an increase in railroad abandonments and highway reconstruction. Roadsides where native prairie still exists are generally those that run parallel to railroad lines. The Task Force gives priority to the identification and preservation of those roadsides where highest quality native prairie still exists. Increased use of native species in roadside restoration will require the preservation of these roadsides in order to establish suitable wildflower planting lists and ultimately as a seed source.

The value of planting with native wildflowers has been increasingly recognized in recent years by many highway departments. Several states are now using native plant species to seed roadside construction sites for their ecological, economic and aesthetic benefits. Federal law now requires that federally funded highway construction must spend one-quarter of one percent of the project costs on native wildflowers.

While recognition of wildflowers has increased in many highway departments, railroad and utility companies are still unaware of this valuable resource. It is necessary to increase the awareness, understanding and appreciation for the value of Minnesota's roadside wildflowers. Education will ensure that the identification, preservation and restoration aspects of roadside management are accomplished.

### Recommendations

With preservation, restoration and education in mind, the following suggestions are offered. Note that this is only a partial list of recommendations, with the remainder appearing in the subcommittee reports. These recommendations represent our most imminent concerns and require immediate action.

#### **Preservation**

1. Complete the survey of native vegetation along state highways and adjacent railroad rights-of-way in 1989. A similar survey should be initiated in 1989 along county and township roads.
2. Designate and sign roadside rights-of-way throughout the state where highest quality native vegetation is/has been identified as WILDFLOWER ROUTES. These routes should be identified on the state highway map and incorporated into the Office of Tourism's "Mini Tours."
3. Coordinate planning and environmental review efforts between agencies and organizations with similar and compatible interests in right-of-way acquisition and management. This should include incorporating right-of-way vegetation data into Mn/DNR's statewide long distance trail plans (LCMR funded project '89-90).
4. Environmental Impact Statements and Assessments should specifically address significant and/or rare **plant communities** before highway/railroad/utility construction projects are designed.

5. Develop a policy that allows for an active and timely mechanism to coordinate the review and intervention in railroad abandonment proceedings between Mn/DOT, Mn/DNR, and others. This review should include assessment for preservation of significant plant communities.

6. Develop right-of-way management policy guidelines and plans in cooperation with highway departments, railroad companies, public utilities and the Department of Natural Resources Roadsides for Wildlife Program. Guidelines should include signing to reduce mowing and herbicide spraying, and techniques, such as prescribed burns, that enhance native prairie.

### **Restoration**

1. Provide funding, i.e., low-interest loans, and technical assistance to Minnesota native seed growers immediately.

2. Establish a public/private sector committee, including the Minnesota Department of Agriculture, to define Minnesota wildflower seed certification by 1990.

3. Establish an interagency plant data base to inventory, restore and record existing and planted wildflowers.

4. Support a Midwest native plant regional office sponsored by the National Wildflower Research Center and the University of Minnesota.

### **Education**

1. Establish immediately a Wildflower Council, a public/private sector partnership, to promote awareness and oversee the work of private and public organizations.

2. Create a wildflower awards program through *MINNESOTA BEAUTIFUL* to reward public and private sector accomplishments to begin in 1990.

3. Launch a wildflower awareness campaign based on educational material defined by an interagency effort to begin as soon as possible.

# Identification and Preservation Subcommittee Report

“...the black prairie soil was built by the prairie plants, a hundred distinctive species of grasses, herbs and shrubs; by the prairie fungi, insects and bacteria, by the prairie mammals and birds, all interlocked in one humming community of cooperations and competition, one biota. This biota, through ten thousand years of living and dying, burning and growing, preying and fleeing, freezing and thawing, built that dark and bloody ground we call prairie. Our grandfathers did not, could not, know the origin of their prairie empire. They killed off the prairie fauna and they drove the flora to a last refuge on railroad embankments and roadsides.”

Aldo Leopold, 1953

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Rights-of-way have been recognized historically as refuges for native vegetation communities. This is particularly true in the tallgrass prairie regions along highway and railroad rights-of-way constructed in the late 1800's and early 1900's. Because these tracks were put through large expanses of native vegetation, the prairie was able to re-establish itself on railroad rights-of-way and the adjacent roadsides after the initial disturbance. Periodic fires along railroad rights-of-way maintained the fire-adapted prairie plants.

Since that time, large expanses of native vegetation have become increasingly less common. The loss of tallgrass prairie, for example, is due largely to the advent of modern agriculture. It was the fertile soils created by native prairie grasses that originally drew European settlers into southern and western Minnesota. Today, what remains, is often located in areas that were not suitable for agriculture such as cemeteries, steep bluffs and along rights-of-way.

## Why preserve native vegetation on rights-of-way?

There are several benefits to preserving native vegetation remnants along roadsides. These include environmental, economic, and aesthetic reasons.

1. Practical benefits include the potential for reduced costs of maintenance of roadsides. Mature native plant communities are often considered self-sufficient and require relatively little maintenance (less mowing and spraying). Established native plant communities often provide excellent roadside stabilization, allowing for little exotic weed invasion.

2. In addition, native plants provide seasonal color changes along roadsides, a “natural beautification.”

3. Currently, many unusual and even rare plant species are found in right-of-way vegetation remnants, some of national significance. In Minnesota, as many as 42% of all rare species are naturally associated with prairies--prairies that may be located along highway/railroad rights-of-way.

4. Although right-of-way remnants are often small, narrow and discontinuous, many have maintained high native plant species diversity. These linear corridors have the potential to preserve the natural gene flow for both the native plants and for the wildlife that use them (White 1986).

5. Tallgrass prairie is rare on a national basis. In Minnesota, less than one percent of the original acreage remains. Right-of-way remnants harbor a significant percentage of what remains today.

6. Finally, it makes sense economically to preserve what we have---prairies and other natural ecosystems take thousands of years to evolve. Remnants often serve as seed sources and as models for restoration efforts. Can we afford to lose the remaining native communities that we have now?

The Preservation subcommittee's goal was to identify problems and suggest solutions for right-of-way native vegetation management. Three primary areas were addressed by the subcommittee. These included identification, management and long-term protection of right-of-way native vegetation remnants. The recommendations regarding each of these follow:

## **IDENTIFICATION**

### **A. Background**

Several other states in the Midwest have initiated prairie remnant surveys in the last several years. Many of these have searched railroad rights-of-way as part of their surveys. Examples include Illinois, Michigan, Wisconsin, Iowa and Missouri.

Previous Minnesota studies include Borowske and Heitlinger (1983) and Bolin et al. (unpublished). Borowske and Heitlinger, working with the Nature Conservancy and Mn/DNR, surveyed 1,663 miles of Burlington Northern rights-of-way in the fall of 1978. As a result of this survey, they identified sixteen prairie corridors (stretches of relatively consistent good-quality prairie). Bolin et al., Mn/DNR, surveyed approximately 465 miles of rights-of-way in southeastern Minnesota in the fall of 1980. Nine prairie corridors were identified as a result of the study.

Currently, MN/DOT, in cooperation with The Wildflower Task Force, is surveying state highway rights-of-way for native vegetation remnants. The project was initiated on a one-year basis. A literature search of right-of-way studies has been completed, a Mn/DNR Natural Heritage Program computer search of rare elements along rights-of-ways has been done, and information has been received from a questionnaire sent throughout the state. Information will be used to develop planting recommendations, potential wildflower routes and a vegetation management policy for Minnesota roadsides.

### **B. Problems**

Remnants of native vegetation on roadsides are disappearing at an alarming rate. Although several agencies and organizations in Minnesota protect native vegetation (MnDNR, The Nature Conservancy, U.S. Fish and Wildlife Service), no one agency has the resources and responsibility to systematically identify and protect native vegetation on rights-of-way.

Historically, rights-of-way vegetation studies have been perceived as low priorities by state agencies. The few studies completed have been done on a regional basis, rather than state-wide or nation-wide, and have been short term, rather than long-term. The current status of the corridors identified in Minnesota in 1978, for example, was unknown until the DOT study was initiated in the spring of 1988.

Survey work completed in 1988 included approximately fifty percent of state highways. As yet, no county or township roadsides have been systematically surveyed for native vegetation remnants.

### **C. Recommendations**

1. A survey to complete the identification of native vegetation along state highways and adjacent railroad rights-of-ways should be completed in 1989. A similar survey should be initiated in 1989 along county and township roads.

2. Roadside right-of-ways throughout the state where highest quality native vegetation is/has been identified should be designated and signed as WILDFLOWER ROUTES. These routes should be identified on the state highway map and incorporated into the Office of Tourism's "Mini Tours."

3. A classification system should be developed whereby priorities are assigned for corridor preservation, management and seed source identification.

4. Promote identification and designation of a National Wildflower Route such as the *North Star Lone Star Route* between Minnesota and Texas.

## MANAGEMENT

### A. Background

Sightline safety, snow drifting, noxious weeds, erosion control and aesthetics are all considerations in right-of-way management. Current and historic management practices have concentrated efforts on erosion control and minimizing first costs rather than on enhancing native species. Herbicides, in combination with mowing, are often used for noxious weed control.

### B. Problems

Most native vegetation remnants along roadsides are not recognized or valued by the authorities that manage roadside vegetation. Since highway departments and railroad companies have traditionally managed roadsides for transportation corridors they often do not have the personnel or resources to evaluate and manage native plant communities.

Although mowing and herbicide use has been reduced significantly in the past fifteen years, native wildflowers and grasses are still subjected to management aimed at noxious weeds. Indiscriminate use of herbicides and inappropriate mowing (by railroads, highway departments, utilities, and/or farmers) decreases the diversity of native wildflowers, reducing the quality of habitat for wildlife and the aesthetic beauty for the roadside traveler.

In addition, management practices that are conducive to native plants, i.e., prescribed burns, have not been traditionally used in roadside vegetation management. This has resulted in brush encroachment and a decreased diversity of native plants. Recent conversations with railroad personnel indicate that cooperative management plans that include early prescribed burns would be well received. Early controlled burns on railroad/highway rights-of-way would reduce the chance of more serious (and costly) accidental fires later in the year.

### C. Recommendations

Correct management is essential to the long-term well being of native vegetation remnants:

1. Right-of-way management policy guidelines and plans should be developed in cooperation with highway departments, railroad companies, public utilities and the Department of Natural Resources Roadsides for Wildlife Program. Guidelines should include signing to reduce mowing and herbicide spraying, and techniques, such as prescribed burns, that enhance native prairie.

2. Amend the present mowing law (Minnesota Chapter 160.232) by removing reference to *Road Authorities*. This will eliminate losses of native plants due to mowing by farmers.

3. A roadside vegetation manual should be written to assist state, county and township maintenance districts, railroads, and utilities in managing for native vegetation.

4. Right-of-way management authorities should be trained in conducting prescribed burns.



## LONG TERM PROTECTION

### A. Background

As a result of the 1980 survey in southeastern Minnesota several miles of right-of-way native vegetation were protected. A nine and a half mile railroad corridor between Lyle and Austin was purchased as a state wildlife management area. For three miles north of Lyle this segment runs parallel to T.H. 218. In addition, Mn/DOT and Mn/DNR signed a cooperative agreement for T.H. 56 between Leroy and Rose Creek. Management includes signing for no mowing and spraying and prescribed burns. this Mn/DOT right-of-way was also added to the Mn/DNR Natural Heritage Registry. However, portions of the adjacent abandoned railroad were sold to local landowners in 1987 when negotiations with Mn/DNR for purchase as a natural area failed. Segments have since been leveled destroying the state's only known site for prairie shooting star (*Dodecatheon meadia*).

Since the identification of the corridors in the southeast in 1980, it is estimated that as much as 50% are now gone (Bolin, pers. comm.). The future of those remaining is uncertain unless steps to protect and manage are outlined and used consistently. In most cases this necessitates cooperation between Mn/DOT, Mn/DNR, the railroads, public utilities and the adjacent private landowners.

No consistent effort has been made to protect those right-of-way corridors identified by Borowske and Heitlinger in 1978. Initial re-surveys (Albrecht unpubl.) indicate that approximately 30% of the corridors designated are now gone. Recent abandonment of railroads has resulted in many miles of prairie and other native vegetation communities being converted to crops. (By 1995, one-half of the original mileage of rail lines in Minnesota will be abandoned. Over one-half of those lines remaining now are in the prairie region of the state--Fruin and Lunt, 1981.) In other cases road construction has destroyed or impacted native roadside vegetation.

### B. Problems

The locations of high quality remnants of native vegetation **on rights-of-way**, if known, are not easily accessed by state agencies, private corporations (railroads) or the public. As a result, rare plant communities frequently are not addressed when highways, railroads and their associated rights-of-way are upgraded and rehabilitated because of age, increased traffic, and heavy equipment use. In addition, there is **no legal basis** for the protection of native vegetation remnants (other than wetlands).

As railroad lines built in the late 1800s and early 1900s are abandoned, more and more native vegetation remnants will be lost. Acquisition of abandoned rights-of-way is costly and moves slowly. There are no programs (or money available) for purchasing and protecting these rights-of-way. Furthermore, there is a lack of coordinated effort between agencies (due to lack of resources, review processes and a perceived lack of compatible interests) in the use and protection of highway/railroad rights-of-way.

### C. Recommendations

1. Outstanding native plant communities on rights-of-way, i.e., rare prairie remnants, should be preserved. This will necessitate declaring "prairie" a rare plant community in Minnesota **with legal protection status**.

2. Agencies and organizations with similar and compatible interests in right-of-way acquisition and management should coordinate planning and environmental review efforts. This should include incorporating right-of-way vegetation data into Mn/DNR's statewide long distance trail plans (LCMR funded project '89-90). Environmental Impact Statements and Assessments should specifically address significant and/or rare **plant communities** before highway/railroad/utility construction projects are designed.

3. A policy that allows for an active and timely mechanism to coordinate the review and intervention in railroad abandonment proceedings between Mn/DOT, Mn/DNR, and others should be developed. This review should include assessment for preservation of significant plant communities.

4. Abandoned railroad corridors should be "rail banked" or acquired from existing highway funds or other existing funds to preserve these routes for future transportation lines, recreational trails, wildlife habitat and native vegetation communities.

5. "Back Roads" legislation (similar to Wisconsin's "Rustic Roads" legislation) should be explored for Minnesota's scenic and unique highway segments and routes.

6. A system similar to the Wetland Habitat Mitigation Banking program used by Mn/DOT should be explored to mitigate unavoidable impacts and destruction of native prairie in right-of-way construction and reconstruction projects.

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Fruin, J. and Lunt, R. 1981. Yesterday, today and tomorrow. Agricultural Extension Service, University of Minnesota. Folder # 624-1981. 6p.

White, J. 1986. Why bother to protect prairies along railroads? Proceedings of the Ninth North American Prairie Conference, 1984. Moorhead, Minnesota (G.K. Clambey and R.H. Pemble, eds.).

## POTENTIAL WILDFLOWER ROUTES

\*\*\*T.H. 11 from Baudette to Warroad; Lake of the Woods and Roseau counties--"Ladyslipper Highway" (as noted in the spring 1987 issue of the "Minnesota Explorer").

This 34-mile stretch of highway/railroad right-of-way has perhaps the most spectacular roadside display of orchids in Minnesota. Both small and large yellow ladyslippers are abundant, along with many showy ladyslippers, Minnesota's state flower. This stretch is scheduled for widening in the next few years. An orchid transplant effort will be initiated, coordinated by Mn/DOT and Mn/DNR (Bemidji).

\*\*\*T.H. 56 from LeRoy to Rose Creek; Mower county--"Prairie corridor".

An abandoned railroad parallels T.H. 56 through the Southern Oak Barrens region of Minnesota. Along this shared right-of-way are prairie remnants that have not been disturbed since the railroad was constructed in the 1800's. Rattlesnake master, wild quinine, cream white indigo, false white indigo are common along the route. While several miles of railroad right-of-way were destroyed in 1987 the highway right-of way remains in high quality prairie and continues to display a constant array of wildflowers.

\*\*\*T.H. 52 (old 52) from Fergus Falls to Barnesville/Moorhead; Ottertail, Wilkin, Clay counties.

Transecting the southern Red River Valley Region this corridor is easy access to and from I-94. Small white ladyslippers, prairie clovers, golden alexanders, phlox and a multitude of other prairie wildflowers offer a pleasant diversion for east-west travelers across the state.

\*\*\*T.H. 23 from Jasper to Pipestone to Ruthton and Clara City to Willmar; Pipestone, Chippewa and Kandiyohi counties.

Driving T.H. 23 travelers in the southwest traverse the Coteau des Prairie or "highland of the prairies" region of Minnesota. Here the gently to steeply rolling hills are covered with a prairie much different than that of the prairies throughout the rest of the state. This route affords a view of the unique "coteau" region and a glimpse at many species associated with the prairies of the western states including the purple coneflower.

\*\*\*T.H. 109/22 from Alden to Minnesota Lake; Freeborn and Faribault counties.

Adjacent to an independently owned railroad this route displays an abundance of porcupine grass, compass plant, and leadplant among a good diversity of deep black soil prairie species.

\*\*\*T.H. 10 from Becker to St. Cloud; Sherburne county.

This route travels across the sandy outwash of the Mississippi River Sand Plains.

\*\*\*T.H. 75 from Crookston to Noyes; Polk, Marshall and Kittson counties.

This route provides access to the Aspen Parkland region of Minnesota.

# RESTORATION AND MANAGEMENT SUBCOMMITTEE REPORT

All effort should be made to preserve native vegetation in rights-of-way during new road design, existing corridor upgrading, or management activities. When alternatives are not possible, restoration of wildflowers must be considered as one form of mitigation. Restoration should also be used whenever roadside vegetation is in need of rehabilitation. Finally, restoration has been mandated, to a degree, by the 1987 FHWA wildflower policy which requires 1/4 of 1% of any landscape budget that involves federal funds to be spent on establishment of native wildflowers.

In these situations, restoration provides functional, ecological, aesthetic, and economical solutions to roadside problems.

1. Functional benefits - Native plants are known to be hardy to Minnesota's climate extremes. Many of the species have deep or fibrous root systems that stabilize slopes for erosion control. Native species crowd out many noxious weeds. Native grasses can collect winter snows and reduce drifting. Establishment of them requires little fertilizer or irrigation.

2. Ecological benefits - Minnesota's natural heritage should be restored to our roadside. A diversity of species should replace the typical short list of species currently being planted. This diversity increases wildlife niches.

3. Aesthetic benefits - A diversity of species also will add variety to the highway user's experience. A change of color and texture through the seasons, as well as from year to year, will make driving less boring.

4. Economic benefits - The benefits listed lead to less money being spent for erosion control, plant replacement, snow control, weed suppression and increased wildlife habitat. More money could be gleaned from increased tourism.

## Seed Source or Genetic Origin

### A. Background

Not all seed is appropriate for Minnesota. When seed originates from too far away, the resulting plants are not hardy. In many cases they display different characteristics (taller, late seed set, more leafy, different color, more aggressive, etc.) and for this reason compromise regional character. From an ecological point of view, seed from distant origins compromises our historical genetic integrity by diluting the Minnesota gene pool.

### B. Problems

Seed availability is a huge problem. Current demand is far ahead of available supplies and is resulting in the use of more distant sources or otherwise inferior seed. Because it takes years to develop the production of seeds from local gene pools, this problem is likely to persist for some time.

### C. Recommendations

Ultimately the success or failure to Minnesota's wildflower plantings depends upon quality local seed (to be defined). State purchasing policies must be established that will put a priority on this. Minnesota origin seed should always be specified as first choice. Until 1995 (which we suggest as the year after which only local seed is used), no seed will originate outside the upper Midwest region as defined in Mn/DOT's plant range specification. In five years, in 1993, a review of seed source and availability will be made to assess the wisdom of this goal.

To help increase the local seed supply, the state should provide funding and technical assistance to Minnesota native seed growers. An interagency/private committee should be formed to deal with this issue separately.

## **Species Selection**

### **A. Background**

Not all species are appropriate in Minnesota, and most Minnesota species are not appropriate in all locations. Ideally, Minnesota's wildflowers/grasses will be restored only to those locations where they grew prior to European settlement. Only species indigenous to Minnesota will be used.

### **B. Problems**

Determining where and what species grew here is not always easy. Base data is available but not readily accessible at this time. Also, the large number of exotic species now found in Minnesota complicates plantings. Existing Mn/DOT specifications only partially address this kind of species selection. Availability and budget often limit the plant species used.

### **C. Recommendations**

Although availability and cost tend to limit final species selection, a minimum of 20 species will be planted in every project. A larger diversity of species should always be the goal. This goal will be more easily attained as seed production increases. Until new standards are written, we suggest that special provisions be written for each roadside project.

A more aggressive effort must be made by state agencies to utilize appropriate wildflower species. Only indigenous species may be used after 1995. There must be no compromises. Further, the wildflower/grasses should be restricted to only those parts of the state where they grew prior to settlement. Ideally, Minnesota would have at least three (north, central, south) private/public sector production centers providing seed of local origin. The species produced in each area would be targeted for use only within that region.

To address the matching of plants to sites, a computer based system must be designed in cooperation with the DNR. This system would define original plant ranges and develop seed mix specifications based upon them.

## **Seed Quality**

### **A. Background**

Wildflower seed quality has not traditionally been subjected to a set of standards to determine purity and viability. This can be a serious problem to the buyer and the project, especially if the seed has been collected from wild populations. Native grass seed, on the other hand, is normally sold by the Pure Live Seed (PLS) pound. This assures the buyer of a specific amount of viable seed for a specific price.

### **B. Problems**

Much of the wildflower seed currently available does not meet high standards. Until more seed is available, the supply could be jeopardized by establishing strict standards. However,



standards defined with lead time in mind would guide seed producers planning to be in production by 1995.

### C. Recommendations

Establish a public/private sector committee to set wildflower seed standards by 1990. The group should include someone from the State Seed Lab, Mn/DOT, the University of Minnesota, growers, and others. In addition, a study needs to be done to assess the effects of continued collection on existing native plant communities. The University should be involved in this study.

## **Planting Procedure**

### A. Background

During the past ten years, a variety of methods have been used. Success has been mixed, undoubtedly for a number of reasons. There is more to learn about wildflower/grasses establishment. Minnesota should play a key role in this learning process through scientific research.

### B. Problems

Many variables exist in the planting procedure. Seed quality, source, and selection have likely been most critical to our levels of success. Seed supply has been decreased by the drought of 1988.. Problems with procedure also exist. Thus we need to re-educate and perhaps re-equip seeding contractors. If there are new procedures or equipment, they must be written to specifications. The specifications must be honored.

### C. Recommendations

Priorities - Until seed supplies are plentiful, use of available seed must be prioritized. New projects, in general, should be planted before established turf. Within new projects, locations within the original prairie region and EIS recommendations will receive top priority. High visibility areas like rest areas are key opportunities to include education as well.

When planting is necessary in existing prairie corridors (currently being identified) they must be planted with local seed only. Non prairie corridors will use local grass seed when available and more distant native grass seed when it is not. Only local forb (flower) seed will be used on all sites. Distant sources will be used only on an interim basis. All seed sources will be documented by the supplier.

A manual to explain the restoration of native vegetation should be produced for the understanding of engineers, designers, producers, contractors, maintenance crews, garden clubs and others interested in roadside plantings.

Specifications - The Mn/DOT *Standard Specifications for Construction*, Turf Establishment Section 2575 is used by contractors and others throughout the state to define planting procedure. These specifications should be updated to reflect current knowledge. Special provisions should be written to aid the contractors with variables of each specific project.

Research should be designed within these plantings to learn better planting methods. As a minimum, detailed planting records and yearly observations should be kept on every planting to better explain our successes and failures. These records would be incorporated into the DNR interagency data base mentioned under "Species Selection."

## Management

### A. Background

Before settlement, vegetation was naturally managed by the action of wildfires and animal grazing. Settlement ended those management procedures. Agriculture and urban development along with the introduction of plant species (exotics) have further altered the presettlement landscape and increased the need for a simulation of original management.

### B. Problems

Roadside plantings occur on highly disturbed sites and are often adjacent to disturbed sites. Pioneering and competing plants are predominately exotics. Thus management against these aggressive exotics becomes critical to a new native planting's success or failure.

### C. Recommendations

Public agencies must cooperate in this management. Good management prescriptions should use burning as a tool in rural areas where possible; mow management when burning is not feasible; define a random schedule to avoid favoring species, mark the plantings clearly to ease crew responsibility; and develop a maintenance manual that will outline techniques for individual regions of the state.

Explore a Mn/DOT/local fire department partnership in burn management of preserved and planted rights-of-way.

Beyond the state level, a Midwest native plant regional office sponsored by the National Wildflower Research Center (NWRC) and the University of Minnesota should be established. This native plant research center would share information and research appropriate to the Midwest regarding preservation, restoration and management.

# EDUCATION AND AWARENESS SUBCOMMITTEE REPORT

Without education to heighten awareness concerning the characteristics and strengths of wildflowers along Minnesota's roadside, all the preservation and restoration recommendations contained within the Task Force Report would lack needed public support. It is imperative that the message gets to the audience, and it is the charge of this subcommittee to recommend methods to do so.

There are many networks already available through which we can channel information about wildflowers. These include, but are not limited to, state and local government, general and specialized media, the Minnesota Extension Service, the Community Education system, the public and private school system, youth camps, gardening organizations, and local service groups. Wildflowers is a topic in some classes at the University of Minnesota, technical colleges, adult education and community education. However, there is no coordinated approach as wildflowers enjoy a minor renaissance as the "in" plant to grow in your garden.

Interest in wildflowers has literally exploded in the past few years, this year in particular. In the space of a few months, *National Geographic*, *Life*, *Country Magazine*, and even the *St. Paul Pioneer Press Dispatch* have reported on the beauty and practicality of wildflowers. Wildflower seeds are available in boutique shops and sporting goods stores in the Twin Cities. That fact further underscores the need for education about Minnesota wildflowers.

These latest meadow-in-a-can solutions from Colorado do not work in Minnesota. Not only do they include species that are not native to our state, but they include some species which could prove aggressive to the natives of our state. Minnesota can be at the head of the class nationally in an effort to plant our own state's native wildflowers. This message must reach the adult and youth population of Minnesota; the private and public sectors; the professionals and the voluntary growers and the consumers; the highway user and the highway maintenance crews; all Minnesotans. What better time to heighten this awareness and to take pride in our natural heritage.

That message should be delivered by implementation, even legislation, of the following recommendations:

## Brochure

This Task Force has produced a two-color brochure on wildflowers as an introduction to understanding the value of Minnesota's native plants. The brochure is being distributed at Travel Information Centers and through **MINNESOTA BEAUTIFUL** to measure interest. A four-color wildflower poster should be produced in time for Celebrate Minnesota 1990. The poster could be a result of a statewide contest, which in itself would increase awareness. Travelers within the state and from outside the state could obtain the poster at Travel Information Centers, the State Fair, and by mail. The wildflower routes should be incorporated in Tourism's mini-tours to further encourage interest.

## Wildflower Council

A Minnesota Wildflower Council that represents both the public and private sector on this issue should be organized. The council would promote and oversee work being done in wildflower preservation, restoration, and education. In its work, it would maintain a link with the Midwest native plant regional office sponsored by the NWRC and University of Minnesota described in the Restoration and Management report. The council would be appointed by the Lieutenant Governor and staffed by a coordinator based in the Office of Environmental Resource Development, DTED. This coordinator would work with Mn/DOT, DNR, and DOE specifically, and other public and private organizations (including the Native Plant Society, Federated Garden Club and Horticultural Society), generally to follow through with the Task Force recommendations.

## Awareness Campaign

To bring attention to wildflowers, a Wildflower Month should be established. The theme of "Make Way for Wildflowers" could kick off the month with a bicycle ride along our first established wildflower trail defined by the preservation committee. Wildflower projects should be promoted as a part of Celebrate Minnesota 1990. Identification, preservation, and restoration projects would qualify for a Celebrate Minnesota 1990 grand program. The campaign would develop a series of stories and photos to be available to local newspapers. On the local level, garden clubs, the Native Plant Society, Master Gardeners, and others could coordinate both seed gathering and planting efforts with the DNR and Mn/DOT - an updated version of Operation Wildflower. Designate Big Bluestem (*Andropogon gerardi*) as Minnesota's state grass. The value of a native grass to our past and future should be explained.

## Awards Program

A wildflower awards program to reward public and private sector accomplishments in identification, preservation, and restoration along roadsides should be established. Texas has a program begun by Lady Bird Johnson that has proven to be a great motivator for highway personnel. Awards could be made at the annual "Make Minnesota More Beautiful" Conference in April through the guidance of **MINNESOTA BEAUTIFUL**.

## Educational Tools

Among educational tools that would share the wildflowers message, an educational video and curriculum guide (*The Four Seasons of Wildflowers*) stands out. It would be an introduction to other educational material used in schools, summer camps, training sessions for highway maintenance crews, garden stores, designers, and others. A more detailed level of information should be directed towards all public and private professionals who are involved with our environment. Special instruction kits with displays and maps for youth and adults could be directed to school districts' environmental education or community education coordination. Small grants available through **MINNESOTA BEAUTIFUL** for environmental education programs could be enhanced. Another education incentive could be a wildflower version of the Smokey the Bear program. A membership kit could include a packet of wildflower seeds for their local area, poster, button, and wildflower flash cards. To further educate within the nursery industry, a Minnesota native plant and seed tag system would heighten awareness to buyers and growers alike. The tag system could be part of an educational program within that industry.

This is a beginning at sharing the wildflower message. With these techniques Minnesota can take pride in telling the story over and over until wildflowers become second-nature to Minnesotans.

## **Ode to a Railroad Prairie**

By  
Ken Varland

I saw something the other day that hurt me to the core.  
The railroad grade I used to hunt was leveled like a floor.  
The dozers and the scrapers, busy all last fall,  
Prepared the land for cropping; "We have to farm it all."

In pristine times this land was home to creatures large and small,  
The wapiti, the blue-winged teal, a habitat for all.  
Diversity of plants was great; they grew from here and yon,  
Big bluestem, rose, goldenrod, the list goes on and on.

The year of 1880 saw the finish of the grade.  
The pioneers were happy for the trains would help their trade.  
At the start this place was grass with many slough and marsh.  
The rails would help to tame this land that many thought too harsh.

That railroad helped to build the towns and people smiled with pride,  
The wetlands drained and uplands plowed: "Progress!" they all cried.  
Plot by plot, mile by mile, the prairie began to fade.  
In time, the only prairie left was found along that grade.

In recent years the trains were few, the tracks in ill-repair.  
That narrow prairie changed in spots, wild plum and elm grew there.  
Wild fauna clutched that single grade to meet their simple needs.  
Passing folks, some misinformed, thought it "a patch of weeds."

"What need is there for prairie"? we ask in hectic toil.  
The prairie is our heart, my friend, it made our precious soil.  
We've plowed and cut that abandoned grade, but not without its cost.  
These prairie lands we oft forget are sadly being lost.

-1982.



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Minnesota Roadside  
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