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## BLAZING STAR PRAIRIE

MANAGEMENT PLAN

NE¼ of Section 5 Township 141 North, Range 45 West Ulen SW Quadrangle Clay County Minnesota

#### MINNESOTA CHAPTER

## THE NATURE CONSERVANCY

AND

## SCIENTIFIC AND NATURAL AREAS PROGRAM

AUGUST 1982

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#### INTRODUCTION

Scientific and Natural Areas are sites of exceptional natural quality which have been formally designated for preservation, protection and management of the values inherent in their natural conditions. These values, which are for the public welfare, include use as living museums, sites for scientific study, areas for teaching natural history and conservation, places of historic or prehistoric interest and scenic beauty, and habitats for rare and endangered species of plants and animals.

The Scientific and Natural Area (SNA) system was established in 1969 and further defined by the Outdoor Recreation Act of 1975 (ORA). Nominated areas must substantially satisfy a set of rigorously drawn criteria outlined in the ORA to qualify for designation. At present there are 27 designated SNA's and several more are pending.

Blazing Star Prairie was acquired by the Nature Conservancy (TNC) because knowledgeable individuals reported that the Prairie Chickens and the tract's other prairie elements are important features of Minnesota's natural heritage. It was designated a Scientific and Natural Area in May, 1981. The 1979 inventory, a cooperative project of the Minnesota Department of Natural Resources (DNR) and the Nature Conservancy, described and thoroughly documented the tract's features. This information was used to develop a site management plan. The purpose of this management plan is to describe the specific actions which will be taken in managing Blazing Star Prairie. Section I describes the general considerations which affect the management of the tract. First, TNC management guidelines are outlined. Then the Minnesota Scientific and Natural Area (SNA) Program, its policies, rules and regulations, are described. State laws affecting management are also briefly outlined. Section II describes the site-specific detailed actions to be implemented on Blazing Star Prairie. Finally, guidelines for modifying and reviewing the plan are noted in Section III.

## MANAGEMENT CONSIDERATIONS

Management of the SNA will be a cooperative effort of the Nature Conservancy and the SNA Program. TNC will have the primary responsibility for implementing this plan. SNA's role, for the present, will be to provide management assistance wherever possible; especially in monitoring and surveillance. SNA designation also provides the maximum legal protection and recognition for the preserve. All management objectives and procedures will be consistent with SNA policies.

The Nature Conservancy's Management Guidelines

TNC's management guidelines govern what management actions will be implemented on Blazing Star Prairie. The two primary TNC stewardship objectives are as follows:

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The primary objective is to maintain areas so that they sustain species, communities, and natural features that make significant contributions to the preservation of natural diversity. The secondary objective is to determine and promote land uses compatible with the preservation of natural diversity on the preserve, in order to foster local support for individual preserves and recognition by the general public of the values of natural diversity preservation.

(Stewardship Guide for Preserve Committees, 1978)

The primary objective, the ecological objective, is closely tied to

determining which of the preserve's resources are most significant for preservation. The Minnesota Natural Heritage Program will play a major role in identifying which elements of the preserve are most significant. This assessment in turn determines how the preserve will be managed. For example, if an endangered species is the most significant element on the tract and that species requires a successional plant community, then management should be directed at perpetuating this successional stage in order to preserve the endangered species. If, on the other hand, the most significant element on the tract is a climax community then a different management program is necessary.

Management may be directed at species, communities, natural features, etc. In January, 1978 the Minnesota Chapter of TNC developed a Manual for Stewardship of Nature Conservancy Lands in Minnesota. The following guidelines are taken from this document.

If the occurence of one or more species are determined to be significant on a preserve TNC will:

## 1. MAINTAIN POPULATION LEVELS SO THAT THE SPECIES CHANCES OF LONG TERM SURVIVAL ON THE TRACT REMAIN STABLE OR ARE IMPROVED.

Management to increase the population of any species should be integrated with perpetuating other native species and maintaining the tract as a diverse and naturally functioning system. There may be important

ecological factors regulating the population size of significant species and it may not be desirable in all cases to attempt to increase populations.

2. SPECIES POPULATIONS WILL BE MANAGEMENT OF ACCOMPLISHED PRINCIPALLY THROUGH MANAGEMENT NATURAL HABITAT AND THROUGH OF THE SPECIES' SPECIES FROM PROTECTION OF THE VANDALISM, POACHING AND SIMILAR THREATS.

Thus managers generally will not use artificial means, such as direct control of natural predation, manipulation of food supply through food plots, or improvement of nesting habitat through plantings or artificial shelters to manage populations. Exceptions to this guideline should only be made in certain circumstances when special actions are necessary for the survival of a species or to redress an imbalance due to a factor such as predator extinction.

Management of plant communities should also be guided by an assessment of the preserve's communities. Where management is directed toward plant communities TNC will:

- 3. MAINTAIN OR RESTORE SELECTED PLANT COMMUNITIES AS NEAR AS POSSIBLE TO THE CONDITIONS THEY WOULD BE IN TODAY HAD NATURAL ECOLOGICAL PROCESSES NOT BEEN DISRUPTED. THIS GUIDELINE WILL BE ACHIEVED, TO THE EXTENT FEASIBLE, BY:
  - A) PERPETUATING AND AS NECESSARY RE-ESTABLISHING NATURAL ECOLOGICAL PROCESSES; AND
  - B) MINIMIZING IMPACTS OF CHEMICAL, MECHANICAL AND SIMILAR ARTIFICIAL PROCESSES ASSOCIATED WITH HUMAN INFLUENCES.

Some preserves will be protected because they contain significant geological, hydrological or other natural features. The same Heritage Program methodology used to evaluate species and plant communities should be used to assess the importance of these features. TNC will:

4. MAINTAIN NATURAL FEATURES IN PRISTINE CONDITION AND PROTECT THEM FROM UNNATURAL CORROSION AND DETERIORATION. THIS WILL BE ACCOMPLISHED PRIMARILY THROUGH REGULATING THE LEVELS AND TYPES OF HUMAN USE AND IMPACTS THAT ACCELERATE CORROSION AND DETERIORATION.

In special instances steps may be taken to prevent or diminish even natural processes of deterioration in order to perpetuate significant natural features and other natural elements.

TNC's secondary objective, the social stewardship objective, is to foster local support for preserves and recognition by the general public of the value of natural diversity preservation. The future preservation of natural areas depends upon a constituency of users and supporters. TNC should foster the development of such a constituency by encouraging the appropriate use of preserves by educators, students, researchers, and other members of the general public. The management plan should identify appropriate types and levels of use, and specify programs to facilitate such

use.

To achieve the above stewardship objective TNC will:

- 5. INVOLVE LOCAL RESIDENTS, USERS, AND OTHER INTERESTED MEMBERS OF THE PUBLIC IN DISCUSSIONS ABOUT STEWARDSHIP PLANNING AND IMPLEMENTATION.
- 6. PROVIDE INFORMATION ABOUT THE PURPOSE AND NATURAL QUALITIES OF THE PRESERVE TO THE LOCAL COMMUNITIES AND PRESERVE USERS.
- 7. KEEP THE PRESERVE AS FREE FROM HAZARDS TO USERS AS POSSIBLE.
- 8. CONDUCT STEWARDSHIP ACTIVITIES IN A WAY THAT MINIMIZES UNNECESSARY ANNOYANCES AND HAZARDS TO RESIDENTS NEAR THE PRESERVE.
- 9. UTILIZE PRESERVE DESIGN, SUCH AS THE PLACEMENT OF TRAILS, PARKING AREAS AND SIGNS, TO BOTH OPTIMIZE ACCESSIBILITY OF THE PRESERVE AND MINIMIZE UNDESIRABLE HUMAN IMPACTS TO THE EXTENT THAT SUCH DESIGN MEASURES DO NOT CONFLICT WITH OTHER PRESERVE OBJECTIVES.
- 10. PROMOTE APPROPRIATE RESEARCH AND EDUCATIONAL USE OF THE PRESERVE.

The two major stewardship objectives—ecological and social—may at times conflict with each other. People crush vegetation, erode and compact soil, alter the behavior of wildlife and transport onto preserves the seeds of unwanted plants that stick to shoes and clothing. It is the Nature Conservancy's position that:

11. ECOLOGICAL CONSIDERATIONS SHOULD BE WEIGHED MORE HEAVILY THAN HUMAN CONSIDERATIONS WHEN THERE IS A THREAT THAT SIGNIFICANT NATURAL ELEMENTS ON A PRESERVE WILL BE ALTERED OR SIGNIFICANTLY DAMAGED.

## The Minnesota Scientific & Natural Area (SNA) Program

Since the SNA Program is involved in the stewardship of Blazing Star Prairie a description of the SNA Program management policies, rules and regulations, and pertinent legislation is included here.

The SNA Program is located in the Minnesota Department of Natural Resource's (DNR) Division of Fish & Wildlife. The Scientific & Natural Areas Act (M.S.A. 84.033) of 1969 created the program. It authorized the Commissioner of the DNR to acquire, designate and maintain SNAs, and to adopt pertinent rules and regulations governing the use of the areas.

The DNR issued rules and regulations governing the SNAs in 1973 (Minnesota Reg. NR 300-303). The rules and regulations, still in effect, cover permitted and restricted uses of SNAs, provide for environmental protection, prohibit certain uses and acts, and establish legal penalties for violations. The rules and regulations also state that the Commissioner of the DNR can restrict: 1) travel within the unit; 2) the hours of visitation; and 3) the number of visitors within the area at any given time.

In 1975 the Scientific and Natural Areas Act was amended by the Outdoor Recreation Act (ORA; M.S.A. 86A.05). This statute further defined and more adequately funded the program. It included SNAs within the Minnesota Outdoor Recreation System, defined the purpose of SNAs,

delineated resource and site qualifications, provided for administration of the units, and classified SNAs into one of three "use designations": Research, Education and Public Use. The law states that only scientific, educational or public uses which do not impair or threaten the preservation objectives are to be allowed. Physical development is limited to facilities absolutely necessary for protection, research and education projects, and when appropriate for interpretive services. Finally, the statute requires plans be drawn up for each SNA. No development funds can be spent by the DNR until these plans have been approved.

To be designated as an SNA a site must: 1) contain elements of "exceptional scientific and educational value," and 2) "be large enough to preserve their inherent natural values and permit effective research or educational functions." The SNA staff notifies the DNR Commissioner's Advisory Committee (CAC) on SNAs and the Minnesota Natural Heritage Program of all new nominations. The SNA staff then is responsible for conducting a field survey of the site to determine the site's qualities, vulnerability, extent of man-made disturbances and management practices which may be needed. The results of this field survey are forwarded to the Heritage Program which then evaluates the significance of the site's elements. Using the field survey data and the Heritage Program evaluation the CAC assesses the site and sends a recommendation to the SNA Program. Based on the CAC recommendation, the priorities for protection as established by the Heritage Program, and on other considerations, such as the opportunity to acquire the area, the SNA Program sets a priority for

designating the area as an SNA. Recommended proposals are next sent to Fish and Withife the Director of the Division of Parks for approval. Finally, the proposal is passed on to the Commissioner of the DNR. If the Commissioner approves the site then the land rights are acquired either by fee simple purchase, lease, donation or conservation easement. Once the Commissioner determines sufficient land rights have been acquired to administer the area as an SNA it is formally designated. The formal designation includes the classification of the site as either a Research, Educational or Public Use unit.

### The Outdoor

Recreation Act requires that a master plan for the area be completed and approved. The SNA Program is responsible for completing the SNA plan. After the SNA draft plan is completed the CAC and DNR review and approve it. An announcement is then made to the public and other state agencies regarding the existence of the plan. Interested persons and agencies are invited to review and comment on the plan within thirty days of the announcement. Comments received by the DNR are reviewed and appropriate changes are made in the plan. Finally, the revised plan is submitted to the State Planning Agency for review. After the DNR reviews this agency's recommendations, and makes the necessary changes, the plan is officially approved.

In July, 1979 the DNR issued a policy statement on SNAs. These policies affect the management of Blazing Star Prairie.

The policies are divided into Designation, Resource Management, and Human Use Management. To ensure the preservation of the SNA's elements of natural diversity it is the DNR's policy to:

- 1. IDENTIFY AND CATALOG THE NATURAL FEATURES OF THE AREA.
- 2. ENSURE THAT RESOURCE MANAGEMENT IS DIRECTED TOWARD PRESERVATION AND MAINTENANCE OF ALL SIGNIFICANT ELEMENTS OF THE AREA.
- 3. MANAGE THE AREA IN SO FAR AS POSSIBLE, TO PERPETUATE OR ESTABLISH NATURAL PROCESSES AND LIMIT THE EFFECTS OF HUMAN ACTIVITIES.
- 4. PROMOTE WISE STEWARDSHIP WITH USERS, LOCAL RESIDENTS AND SPECIAL INTEREST GROUPS.

To fulfill these general policies the DNR will:

- 5. MONITOR AND EVALUATE SNA MANAGEMENT PERIODICALLY TO DETERMINE IF MANAGEMENT OBJECTIVES ARE BEING ACHIEVED.
- 6. USE MANAGEMENT METHOD(S) CONSIDERED MOST NATURAL AND APPROPRIATE TO THE TOTAL ENVIRONMENT OF THE AREA AND:
  - A) NOT USE COST ALONE TO DICTATE SELECTION OF THE APPROPRIATE MANAGEMENT METHODS;
  - B) DESIGN MANAGEMENT PLANS TO ADDRESS THE ECOLOGICAL INTEGRITY OF THE AREA TO PREVENT MISMANAGEMENT;
  - C) REMOVE EXISTING DEVELOPMENTS OR UNNATURAL OBJECTS UNLESS THEY ARE UNOBTRUSIVE AND NOT DETRIMENTAL TO THE PURPOSES FOR WHICH THE AREA WAS DESIGNATED OR OF HISTORIC VALUE.
- 7. PROHIBIT THE FOLLOWING:
  - A) CUTTING OF GRASS, BRUSH, OR OTHER VEGETATION, THINNING TREES, REMOVAL OF DEAD WOOD AND WINDFALLS, OPENING OF SCENIC VISTAS OR

PLANTING EXCEPT AS PROVIDED FOR IN THE MANAGEMENT PLAN:

- B) INTRUSIONS OF DEVELOPMENT ON, THROUGH OR OVER SNAS UNLESS ESSENTIAL TO THE MANAGEMENT OF THE UNIT:
- C) MINERAL EXTRACTION, PEAT HARVESTING AND WATER INUNDATION OR APPROPRIATION;
- D) COLLECTION OF PLANT, ANIMAL, HISTORIC OR GEOLOGICAL SPECIMENS (EXCEPT BY PERMIT) OR ANY CONSUMPTIVE USE OF NATURAL RESOURCES:
- E) INTRODUCTION OF PLANT, ANIMAL OR OTHER OBJECTS, INCLUDING LIVE SEEDS OR DISEASE ORGANISMS, UNLESS EXPRESSLY PROVIDED FOR IN THE MANAGEMENT PLAN.
- 8. PROVIDE THE FOLLOWING:
  - A) SPECIAL MANAGEMENT TO TRANSIENT SPECIES ONLY WHEN THERE IS A WELL DEFINED NEED;
  - B) SPECIAL MANAGEMENT FOR BALD EAGLE NESTS AND COLONIAL WATER BIRD NESTING SITES WHERE APPROPRIATE:
  - C) REVIEW OF DNR PERMITS AND ACTIONS TO MINIMIZE ADVERSE EFFECTS ON A DESIGNATED SNA.
- 9. INVOLVE USERS, LOCAL RESIDENTS, AND SPECIAL INTEREST GROUPS IN THE MANAGEMENT OF THE SNA AND ENFORCEMENT OF RULES.
- 10. ESTABLISH A WORKING RELATIONSHIP WITH ADJACENT LANDOWNERS SO AS TO MINIMIZE OR ELIMINATE THOSE LAND USE PRACTICES HAVING AN ADVERSE IMPACT ON THE SNA.

To ensure the preservation of SNA resources and provide for use of the area it is the DNR's policy to:

- 11. LIMIT HUMAN USE ON SNAS TO THE AMOUNT THE RESOURCE CAN TOLERATE WITHOUT DAMAGE TO SPECIAL FEATURES.
- 12. PROVIDE FOR THE INTERPRETATION OF THE SPECIAL FEATURES AND THEIR MANAGEMENT.
- 13. SEEK INPUT FROM USERS, LOCAL RESIDENTS AND SPECIAL INTEREST GROUPS IN DECISIONS REGARDING MUST SUITABLE USE(S).

14. REQUIRE USERS ENGAGED IN SCIENTIFIC STUDY TO MAKE INFORMATION OBTAINED ON THE SNA AVAILABLE TO THE DNR AND ENCOURAGE USERS TO MAKE THEIR STUDIES AVAILABLE TO THE SCIENTIFIC COMMUNITY THROUGH REPORTS OR PUBLISHED ARTICLES.

To fulfill these general policies the DNR will:

- 15. ENCOURAGE:
  - A) ACTIVITIES WHICH CAN OCCUR EQUALLY WELL ON LESS VULNERABLE OUTDOOR AREAS TO BE CONDUCTED ELSEWHERE;
  - B) SCIENTIFIC STUDIES, PHOTOGRAPHY, AND KEEPING OF PHENOLOGICAL RECORDS AND FAUNAL AND FLORAL LISTS FOR LONG TERM RESEARCH AND EDUCATIONAL BENEFITS;
  - C) APPROPRIATE USERS AND PUBLIC SUPPORT RATHER THAN UNRESTRICTED PUBLIC USE.
- PROHIBIT THE FOLLOWING ACTIVITIES 16. UNLESS NECESSARY FOR MANAGEMENT PURPOSES OR SPECIFICALLY AUTHORIZED BY THE MANAGEMENT PLAN: COLLECTING PLANTS AND ANIMALS, HUNTING, FISHING, CAMPING, PICNICKING, HORSEBACK RIDING, MOTORIZED VEHICLE USE WITH THE EXCEPTION OF PARKING FACILITIES AND SIMILAR ACTIVITIES.
- 17. ASSURE STRUCTURES, TRAILS AND SIGNS ARE AS SPECIFIED IN THE MANAGEMENT PLAN AND IN KEEPING WITH THE NATURAL SURROUNDINGS AND PRESENT ONLY SO FAR AS REQUIRED FOR RESOURCE PROTECTION AND PROVISION OF BASIC USER NEEDS.
- 18. ADAPT INTERPRETIVE TECHNIQUES AND MATEIALS TO THE USER.
- 19. LIMIT OR EXCLUDE USE FROM AN AREA FOR AN APPROPRIATE PERIOD OF TIME WHEN IMPORTANT NATURAL FEATURES ARE THREATENED AS A RESULT OF SUCH USE.
- 20. CLEARLY POST THE PROCESS FOR OBTAINING A VISITOR USE PERMIT WHEN REQUIRED, AT THE ENTRANCE TO THE SNA.

- 21. NOTIFY ADJACENT LANDOWNERS AND INTERESTED PARTIES PRIOR TO IMPLEMENTING MAJOR MANAGEMENT ACTIONS.
- 22. ERECT BOUNDARY SIGNS AS SPECIFIED IN THE MANAGEMENT PLAN TO DISCOURAGE ENCROACHMENT AND TRESPASS ONTO THE SNA AND ONTO ADJACENT PROPERTY BY SNA USERS.
- 23. REQUIRE A "PACK OUT WHAT YOU BRING IN" LITTER PHILOSOPHY AND ENFORCE LITTER REGULATIONS.
- 24. FENCE ONLY WHEN NECESSARY TO CORRECT PERSISTENT ENCROACHMENT OR TRESPASS PROBLEMS TO THE SNA OR ADJACENT PROPERTY.
- 25. REGULATE USE BY EMPLOYING, SINGLY OR IN COMBINATION, METHODS THAT INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
  - A) NO ACCESS RESTRICTIONS;
  - B) ACCESS BY PERMIT ONLY;
  - C) ACCESS ON DESIGNATED TRAILS ONLY;
  - D) TEMPORAL OR SPATIAL ZONING.
- 26. REQUIRE:
  - A) REVIEW OF ALL RESEARCH PROPOSALS FOR THE SNA WITH EMPHASIS ON THE PROPOSED RESEARCH METHODOLOGY;
  - B) IF NECESSARY, BONDING OF RESEARCHERS TO GUARANTEE CLEAN-UP FOLLOWING COMPLETION OF THE PROJECT(S).

Other Management Considerations

The lease between TNC and SNA states:

- 1. Management planning is a joint and cooperative responsibility of the DNR and the Nature Conservancy.
- 2. The DNR will notify TNC thirty days prior to any proposed change in the rules and regulations. The Conservancy will then notify the DNR within thirty days if the change is acceptable or not.

- 3. The DNR will not cause or permit to be caused any act constituting harm or destruction of the unit.
- 4. The DNR shall not apply or permit application of any chemicals, including herbicide and insecticide, unless it has been provided for in the management plan or unless written permission has been first obtained from the Conservancy.
- 5. If consistent with the management plan a permanent recognition sign shall be erected by the DNR on the unit.
- 6. Upon request the DNR shall provide TNC with an annual report on use management of the unit.
- 7. The Conservancy shall have access to the unit at any time.
- 8. TNC may, with the consent of the DNR, lease all or any portion of the unit for purposes consistent with the management plan.
- 9. Both TNC and the DNR can terminate the lease when there is a breach of the contract.

Finally, several Minnesota statutes may affect the management of Blazing Star Prairie. They include:

1. Collecting and taking of wild animals;

Under state law (M.S. 98.48) special permits are required from the DNR, Division of Fish and Wildlife, for the collection or taking of protected wild animals.

## 2. Endangered species:

The Endangered Species Act (M.S.A. 97.48B) states that no endangered wild animal may be taken except under special circumstances. The DNR, Division of Fish and Wildlife, may undertake programs or promulgate rules and regulations which also affect the management of endangered or threatened species.

# 3. Conservation of certain flowers:

Under state law (M.S. 17.23) no member of the Orchid or Trillium families, or any species of Lotus (<u>Nelumbo lutea</u>), Gentian (<u>Gentiana</u>), Arbutus (<u>Epigaea repens</u>) or Lily (<u>Lilium</u>) can be taken or gathered in any manner from public land without the permission of the Commissioner of Agriculture and then only for scientific and herbarium purposes.

# 4. Control of noxious weeds:

It is the duty of all land owners, according to state law (M.S. 18.181), to eradicate or otherwise destroy all noxious weeds. Section 18.315 also states that towns and cities may take steps to control noxious weeds on state lands within the territorial limits of the towns or cities provided that the managing agency fails to take action within fourteen days of receiving notice to cut or control the weeds. The following plants are considered noxious weeds statewide: Field Bindweed; Hemp; Poison Ivy; Leafy Spurge; Perennial Sowthistle; Bull Thistle; Canada Thistle; Musk Thistle; and Plumeless Thistle. In addition, in Clay County Hoary Allisum, Wild Buckwheat, Cockleburr, White Cockle, Kochia, Milkweed, Wild Mustard, Wild Oats, Redroot Pigweed, Prostrate Pigweed, Quack Grass, and Sunflower are all classified as noxious weeds.

# **II. MANAGEMENT ACTIONS FOR BLAZING STAR PRAIRIE**

### Introduction

This section describes the specific actions to be implemented on Blazing Star Prairie. The actions are grouped into three broad categories: resource management actions, use management actions, and monitoring actions.<sup>1</sup> The resource management actions, in general, are primarily directed at inventorying, preserving, perpetuating, and restoring the tract's natural resources. Use management actions are directed primarily at the problems caused by, and needs of, the visitors. Monitoring actions are directed at insuring that both resource and use management actions are being effectively implemented, identifying unforeseen changes occurring on the site, and recording the results of management implementation. Under each management action there is a brief statement expanding on the action and the need for action. In parentheses there are numerical references to the various TNC guidelines and SNA policies each action is designed to carry out.

Within each of the resource, use and monitoring action categories the actions are subgrouped when possible according to function. The actions are <u>not</u> listed in order of priority.

1. It should be noted that these categories are artificial: use management actions affect resource management actions and vice versa. However, for the purposes of discussion it is convenient to follow this convention.

Ownership modifications are of special concern to adjacent landowners, managing agencies, users and interested parties. Ownership modifications, including fee title purchase and conservation easements, which are taken to protect a resource, facilitate management, or enhance use are therefore listed separately after the management actions have been outlined. In addition, modifications whose purpose is to protect "new" resource(s) outside the tract are noted here.

# **RESOURCE MANAGEMENT ACTIONS**

Action 1. Implement a wildfire suppression plan (TNC guideline 8; SNA policy 4).

Wildfires may threaten human health and property adjacent to the tract. However, the practices used to suppress wildfires may be more damaging to the site than the fire itself. Fire control should be to safely prevent the spread of the fire outside of the tract's boundaries, and be designed to minimize the damage produced by fire suppression activities. Several steps will be taken to achieve this goal.

Local fire authorities, the fire chief of the local fire department and the DNR area forester, should be annually contacted about control methods to use should a wildfire start on or spread into the tract. These authorities should be made aware of the nature of the tract and TNC's concern about what suppression methods are used on the site. They should be asked to consider using natural fire breaks and backfires, rather than heavy equipment and fire plows, to contain the fire. The fire authorities should have the names and telephone numbers of the local volunteer manager and TNC preserve management coordinator to contact for assistance in the event of a fire. A map should be provided showing the tract's boundaries, access points, and fire breaks (if present).

Adjacent landowners should also be provided with the names and phone numbers of the local fire department, volunteer manager and TNC preserve management coordinator to contact in case of a fire. If a wildfire does occur on the tract the neighbors can serve as an "early warning network", alerting the proper authorities. During extreme fire danger periods neighbors and visitors should be alerted to prevent man-caused fires and to be on the lookout for fires.

# Action 2. Periodically burn segments of Blazing Star Prairie (TNC guidelines 3 and 4; SNA policies 2, 3, and 6.)

Areas like Blazing Star Prairie are thought to have burned on a regular basis before white settlement.<sup>1</sup> After white settlement, however,

1. See for instance J. T. Curtis, The Vegetation of Wisconsin (Madison Univ. of Wisconsin Press, 1959), and R. Daubenmie, Ecology of fire in grasslands, Advanc. Ecol. Res. 5 (1968), 209-266. A survey at the preserve prior to the initiation of prescribed burning revealed old charred stumps. This also suggests the occurrence of fires in the past. fire was suppressed. Prescription burning reinstates a natural ecological process, regulates plant succession, maintains the tract's open character, suppresses brush and trees like aspen, restores old fields and other disturbed areas, removes built up fuel (and consequently reduces the wildfire hazard), suppresses alien (non-native) species, perpetuates firedependent plants and improves the habitat for certain animals.

Blazing Star Prairie is divided into two burn units (See Figure 1). These firebreaks will be mowed and raked in the fall before a scheduled burn—the interior firebreak should be mowed and raked when the southern unit is scheduled for a burn, while both firebreaks should be mowed and raked before the northern unit is burned.

The south unit will be the first area burned. It will be burned in early to mid-May, for three to four successive years. Thereafter, the south unit will be burned once every four years between April 10-30.

Once the south unit is on the four year maintenance burn schedule the prescribed burn recovery phase will commence on the north unit—i.e., the north unit will be burned for three to four successive years in early May, then once every four years in April. Under no circumstances will both the north and south units be burned together in the spring of the same year.

TNC procedures for prescription burning should be followed for all planned burns: 1) a prescribed burning proposal must be prepared and approved by authorized TNC personnel; 2) all conditions described in the proposal, including the crew, fire boss, equipment, weather, fire-breaks, DNR permits, courtesy notifications, and publicity, must be in effect for a burn to occur. Following a burn, a prescribed burning report must be submitted to the Nature Conservancy office. (See Appendix III, Procedures for prescription burning, in the Manual for stewardship of Nature Conservancy Lands in Minnesota, for more information.)

Action 3. Hand cut the Sweetclover which is not eliminated by the prescribed burns (TNC guidelines 3, 4, and 8; SNA policy 3).

Sweetclover is a non-native plant which if left uncontrolled will spread over the area. The plant is presently growing in a thick patch on the southwest corner. The recovery phase of prescribed burning (i.e., burning in successive years in mid to late spring) is designed in part to suppress Sweetclover. However, fuel conditions and other factors may impede the effectiveness of the burns and allow Sweetclover to survive. Those plants which survive the burns must therefore be controlled by hand cutting as soon as they are identified. The hand cutting must be done before seed development to control the spread of the plant.

Action 4. Allow natural succession to restore the old field to prairie (TNC guideline 3; SNA policies 2, 3, and 6).

With the reintroduction of fire and the natural dispersal of plant seeds from the adjacent prairie, the old field is expected to succeed to prairie. Thus, the old field will provide an opportunity for students and

researchers to observe natural succession. If monitoring data show the prairie plants are not re-establishing themselves and expanding naturally on the field then consideration should be given to taking more active steps to restore the field (such as gathering seeds from the adjacent prairie and planting them on the field).

Action 5. Mow Canada Thistle in the old field (TNC guidelines 3, 4, and 8; SNA policies 2, 3, and 6).

Canada Thistle will probably be very noticable in the old field after it is burned. This non-native species is a noxious plant according to state law. It must be contolled before seed development. Flowering can be prevented, if the field is mowed repeatedly. Mowing should commence in mid-June and be repeated whenever new flower buds are observed. Eventually native plants will prevail over the Canada Thistle and eliminate the need for mowing.

Action 6. Mow an area(s) on the tract for Prairie Chicken booming displays (TNC guidelines 1 and 2; SNA policies 2 and 3).

This action will provide additional habitat which the Prairie Chickens require. It thus will help insure that the chickens continue to breed on the preserve. The number of areas to be mowed, area size, location, (the chickens prefer short grass prominent knolls), mowing frequencies, mowing procedures, etc., will have to be worked out. Dr. Dan Svedarsky, University of Minnesota (Crookston) should be consulted on the answers to these questions.

Action 7. Collect additional information on the site's flora (SNA Policy 1).

The 1979 inventory did not thoroughly survey Blazing Star Prairie's sedges. This gap in the tract's baseline data should be corrected. Also, the 1979 inventory team identified nineteen species on the tract's releve plots, but did not collect specimens of these species (See page 36-7 of the 1979 inventory). These species should be verified, preferably outside of the releve plots.

# Action 8. Maintain the fence on the east side of the tract (TNC guide lines 3 and 4; SNA policies 2, 3, 7(E) and 24).

Cattle graze on land adjacent to Blazing Star Prairie. The fence prevents these cattle from wandering onto the tract. Therefore, it is important to maintain the east boundary four-strand barbed wire in good condition. The fence should be inspected monthly to determine that nothing is leaning on or covering it, posts<sup>\*</sup> are firm and wires are adequately strung.

#### USE MANAGEMENT ACTIONS

Action 9.

Examine the possibility of rerouting traffic from the interior road onto a new field road along the tract's boundary (TNC guidelines 3, 4, and 11; SNA policies 3, 6(C), 7(B), and 16).

The present field road passes through the tract and is probably used by farmers going to other fields. This activity is not appropriate for a natural area. There could also be a safety problem for visitors. If a new field road were built on the tract's boundary then the interior field road could be eliminated without significantly affecting farmers' access to their fields. Two alternative routes are possible. The preferred option is to route the road onto the east side of the tract. The other option is to reroute traffic onto the north and west boundaries. (This option, however, has several problems: the road would pass through a wet area and it would cut off good prairie to the north.)

Since this proposal affects other members of the local community, no action should be taken until local officials and neighbors have been consulted. A special effort should be made to carefully explain what will and will not be done, and the rationale for rerouting traffic. This will help minimize misunderstandings and friction which might otherwise arise. If the field road is a township road then this action will have to be carefully coordinated with township officials. Action 10.

Develop and implement a parking plan (TNC guidelines 9 and 10; SNA policies 15(C) and 25).

Presently there is no designated place to park at Blazing Star Prairie. A parking area is needed to eliminate parking on the prairie or on adjacent owners' land. The parking area should be sited in the old field, the most disturbed part of the tract (See Figure 1 for possible locations). It should be kept small (i.e., space for four to six cars or a bus) to keep costs down, minimize impacts on the tract and discourage inappropriate public use. The parking area will be mowed about once every 3-4 weeks to accomodate the cars. A parking sign will also have to be erected and maintained to direct visitors where to park. Gates or fences may be needed to keep people from driving beyond the parking area and to control access to the site. Before any gates or fences are installed, however, the question of road rerouting will have to be resolved (See Action 9).

Action 11.

Post new signs on all the tract's boundaries and maintain the signs (TNC guidelines 3, 4, 7, 8, 9, and 10; SNA policies 3, 7, 15, 16, and 22).

All of the tract's boundaries should be posted to prevent inadvertent encroachment by adjacent landowners, minimize unauthorized activities, (e.g., hunting), and to identify the area's boundaries to users and managers.

At corners posts should be

set so that signs are nearly touching and at the same angle as the boundary line. All signs and posts should be checked annually and repaired and replaced when necessary.

If problems develop on the tract then the signs may have to be changed.

Action 12.

Erect and maintain a main recognition sign near the parking area (TNC guidelines 7, 9, and 10; SNA policies 3, 7, 15, and 16).

This action should be delayed until the road relocation question has been resolved (See Action 9). An interim TNC recognition sign should be erected near the parking area. (Posts from a former TNC sign are still in place in the site's northwest corner; pieces of the old sign are at Buffalo River State Park.) It should be visible from the road. The sign will note the owner and purpose of the area.

This sign will be replaced with an SNA sign. As noted in The Nature Conservancy-DNR lease the SNA sign should state the land was acquired by TNC and managed as an SNA by the DNR. The sign should be annually touched up with Olympic wood stain, and the letters repainted. Other maintenance actions should be taken as required.

## Action 13.

Erect a registration box and maintain the box and its supplies (TNC guidelines 4, 6, 7, 9, and 10; SNA policies 3, 4, 7, 9, 12, 13, 15, 16, 23, and 26.)

The registration box should be of standard TNC design. It should be erected in a conspicuous location approximately fifty feet from the parking area. The registration box should be annually touched up with Olympic wood stain; other maintenance actions should be taken as required. During the spring, summer and fall the box should be checked bi-weekly to see that adequate copies of maps, brochures, registration sheets and other relevant information notices (including notices on upcoming special events, the nearest DNR or volunteer information source, the SNA rules and regulations (if appropriate) and/or TNC rules and regulations) are present.

Two sets of 5 x 7 standardized comment cards will also be kept in the box. One set of cards will be available for users to write comments on management and use of the tract (e.g., problems observed on the tract, proposals for management, evaluation of the managers). The other set of cards will be available for users to write observations on the site's natural features. These cards will ask: the observer's name and address; what species were seen; the number of individuals seen; where the species were observed (space can be left for a sketch); and other remarks (e.g., presence of nesting activity, territorial behavior, identifying marks of unknown species). The back of the cards will have instructions and note the purpose of the cards. A list of those species which are of particular interest to managers and scientists could also be included here. The observation cards, the management comment cards and the registration sheets can provide valuable monitoring data to managers. It is therefore important to collect the cards, and the registration sheets, and keep them for analysis.

Action 14.

Develop and distribute a map showing the tract's boundaries and general features of interest (TNC guidelines 6, 7, and 10; SNA policies 12, and 15(C)).

This map should be distributed to users, potential users, adjacent landowners and interested parties until a Blazing Star Prairie brochure is developed. The map can be used to increase visitor appreciation of the area, and answer questions which visitors and landowners may have.

Action 15.

Develop a brochure on Blazing Star Prairie and distribute it to users, potential users, adjacent landowners and other interested parties (TNC guidelines 4, 6, 7, and 10; SNA policies 3, 4, 7, 8, 12, 15, 16, 23, and 26).

The brochure should include an accurate map of the area, a description of Blazing Star Prairie's history, natural features and significance, and a discussion of the impacts caused by people. It shall describe the Nature Conservancy-SNA Program (if appropriate), note conducted tours, promote a "pack out what you bring in" litter philosophy, identify people to contact for more information about the site, and encourage visitors to register, provide comments, and become involved in managing the area. Finally, the brochure should note Nature Conservancy and/or SNA rules and regulations governing use, including the requirement that all researchers obtain permission prior to conducting research on the area.

Action 16. Conduct guided field walks on Blazing Star Prairie (TNC guidelines 5, 6, and 10; SNA policies 4, 12, 13, and 15(C)).

The guided walks can be used to educate visitors about the area's resources, inform visitors about the Nature Conservancy-SNA Program (if appropriate), obtain visitor feedback on management, and make visitors feel like land stewards—involved in managing the site and responsible for its well-being. (See also Action 22.) The number of conducted tours depends on time and money limitations, and the impact of the tours on the area. Late May through October are ideal times to lead walks on the tract. News releases should be sent to the local media to publicize the walks, and a reporter(s) should be periodically asked to participate in the walks.

Action 17. Encourage local middle and secondary schools, regional education institutions, and researchers to use the site if appropriate (TNC guidelines 6 and 10; SNA policies 4, 12, and 15).

Bemidji State University, Moorhead State University, North Dakota State University (Fargo), the University of Minnesota (Crookston), the University of North Dakota (Grand Forks), the Minnesota Environmental Education Board's region IV coordinator in Appleton, and all middle and secondary schools within the vicinity of Blazing Star Prairie (up to thirty miles away) should be periodically contacted. These groups should know of the site's existence, its potential for teaching such topics as native flora and fauna, ecology and geology, and the names of whom to contact for more information (i.e., the local volunteer manager, TNC preserve management coordinator, DNR regional naturalist). An effort should be made to meet annually with all teachers and researchers who express an interest in the site. Educational and research opportunities can be promoted at these meetings. However, the sensitivity of the resources and user responsibility in caring for the land must also be stressed. Use should only be encouraged if appropriate, i.e., if such use cannot occur equally well on other less vulnerable areas. All teachers and researchers should be aware of site rules and regulations, such as the need to obtain a permit prior to collecting or conducting research in the area, before they step onto the tract. Before a class comes to the tract teacher workshops should be held so that the teachers are trained and well-informed about the area. When the class comes to the site managers or scientists should, if possible, also be present to assist the teachers.

#### MONITORING ACTIONS

Action 18. Recruit a local volunteer manager preferably living within three to four miles of the tract (TNC guidelines 1, 2, 3, 4, 5, 6, 7, 8, and 10; SNA policies 1, 2, 3, 4, 5, 7, 8, 10, 13, 15, 16, and 21).

Volunteer managers must have the time, interest and willingness to become intimately involved with the protection and management of the site. Their job is primarily to: 1) maintain the registration box supplies and collect registration sheets and comment cards; 2) monitor the tract for signs of misuse or management problems and communicate them to TNC (a "watchdog" function); 3) facilitate communications between TNC, local residents, and other parties; 4) aid professional resource managers when requested; and 5) orient new managers to the site and the local community. One possible volunteer manager candidate is Paul Desjardin. Mr. Desjardin, who lives in Felton, should be asked if he would accept the position.

Action 19. Develop and maintain a close relationship with local and regional government officials, natural resource management professionals, and other appropriate individuals (TNC guidelines 5, 6, and 8; SNA policies 4, 5, 9, 13, and 21).

Local and regional governmental officials (e.g., the mayor, county assessor, county board members) and resource management professionals (e.g., the county extension agent, DNR area wildlife manager, Soil Conservation Service district conservationist, U. S. Fish & Wildlife Service managers) should be annually contacted and informed about the site. These individuals are all concerned with natural resources in their respective capacities. They should be aware of the site, its importance, and major management actions which are planned for or being implemented on the tract. This action can help eliminate public suspicions and misconceptions, build trust and rapport, and increase community support. It is also a way of monitoring what the public feels about the site and the managers.

Keeping in close contact with local and regional professional resource managers is also important. These individuals, if they are aware of the site and interested in its preservation, can provide valuable expertise and manpower, and lend equipment if needed for management. As local residents they can help generate community support for the tract. Cooperative management efforts can also sometimes be used to solve problems which affect (or could affect) several sites in the area, including the preserve.

Action 20.

Contact the local DNR conservation officer (C.O.) and request his assistance in managing the site (TNC guidelines 2, 3, and 4; SNA policies 4, 7, 16, and 23).

This action should be taken at least once per year. Since the C.O. is the primary natural resource enforcement officer it is important to bring the site to his attention and familiarize him with its resources and problems. This action is also necessary to obtain advice on management, such as on enforcement activities. Action 21. Hold periodic meetings for the local residents (TNC guidelines 5, 6, 7, 8, and 10; SNA policies 3, 4, 5, 9, 10, 13, and 21).

Meetings will be publicized through news releases sent to the local media (a reporter might also be asked to attend). They will be held at least once per year at a time and place convenient for local residents, perhaps in conjunction with a field trip or other activity; special circumstances, such as the implementation of a major management action, may warrant more than one meeting. These meetings can be used to enlist support for project work (e.g., monitoring), as a forum to discuss management decisions, problems, and actions, or to encourage landowners to adopt various practices. It is particularly important that adjacent landowners and frequent users be present at these meetings since their actions can have a large impact on the tract and vice versa. All comments regarding managment should be recorded.

Action 22. Maintain close contact with all scientists who are using the site for educational and research purposes (TNC guidelines 4, 5, and 6; SNA policies 1, 2, 3, 4, 5, 9, 12, 13, and 15).

Scientists, as trained observers, can provide valuable information and insights on managing the site. Data gathered from scientific studies are also important for monitoring the site. Thus all scientists using the site will be annually contacted and consulted about their studies, data, and conclusions. Researchers should also be consulted about natural changes and human impacts they discover while on the tract, and be encouraged to offer input into managing the tract. Finally, research information should be accumulated, stored in a site file, and shared with interested parties.

Action 23. Periodically inspect the site (TNC guidelines 1, 2, 3, 4, 7 and 8; SNA policies 1, 2, 3, 5, 6(C), 7, 11, 16, and 23).

The site shall be thoroughly inspected at least once per month for human impacts (e.g., vandalism, unauthorized trails, trampling of plants, littering, the disturbance of sensitive resources), signs of violations in rules and regulations (e.g., hunting, snowmobiling, horseback riding), and natural changes in the tract (e.g., insect infestations). If urgent action is required on the site TNC should be contacted immediately. Otherwise, records should be kept of observations for the annual status report.

The inspections are also an opportunity to gather feedback from users in the area concerning the site and management actions. Visitors observed violating rules and regulations should be tactfully asked to correct their behavior, e.g., remove rubbish dumped on the site. Serious problems requiring immediate attention should be referred to the DNR conservation officer or county sheriff. A report should be submitted to TNC if further action is advisable.

Action 24.

Develop and implement a vegetation monitoring program (TNC guidelines 1, 2, 3, and 4; SNA policies 1, 2, 3, and 5).

Changes in vegetation can significantly affect all the other features of a natural area. Thus a monitoring program is necessary to keep track of vegetative changes occurring on the tract. The releve plots and photopoints set up in the 1979 SNA inventory should be periodically sampled every year. Color IR aerial photographs should be taken of the site once every five years. Additional monitoring programs may be developed to further record changes in the vegetation.

Action 25. Develop and implement monitoring programs for <u>Cypripedium candidum</u> (White Lady-Slipper) and <u>Penstemon pallidus</u> (Beard's-tongue) (TNC guidelines 1 and 4; SNA policies 2, 3, and 5).

These plants were identified on the site by the 1979 SNA inventory team. They have been listed as elements of potential state significance, according to the Minnesota Heritage Program, and therefore warrant special attention. An annual record should be kept of two species' populations, consisting of: stem counts; counts of plants which flower or fruit; map showing the plants' locations; and any trends which are identified. Mark Heitlinger and other botanists will provide information on exactly what techniques and procedures to follow on the tract.

Action 26.

Develop and implement monitoring programs for the Dakota Skipper, Uhler's Arctic, Assiniboia Skipper, Greater Prairie Chicken, Marbled Godwit, Sprague's Pipit, Baird's Sparrow, Chestnut-collared Longspur and Prairie Vole (TNC guidelines 1 and 4; SNA policies 2, 3, and 5). These species have been identified on, adjacent to, or in the vicinity of the tract by the 1979 SNA inventory team or by others within the last two years. They have been listed by the Minnesota Heritage Program as elements of potential state significance, and therefore warrant special attention.

A site record will be kept, and periodically updated, on each species' population. The record should include information on population abundance (estimates or counts), breeding status, site location, and trends.

The DNR regional wildlife manager, Carrol Henderson (DNR Supervisor of Non-game Wildlife), Dr. Dan Svedarsky (University of Minnesota, Crookston) and other experts (e.g., Robert Dana on the Dakota Skipper) will be asked to provide detailed information on what monitoring techniques and procedures to use on Blazing Star Prairie.

Action 27. Develop and implement a water table monitoring program (TNC guideline 4; SNA policies 1, 2, 3, and 5).

Presently there is no information on the tract's water table. Changes in the water table may adversely affect the tract's biota. Therefore the

1. See Kenneth F. Higgins et al, Construction and operation of cablechain drag for nest searches, Wildlife Leaflet 512 (Washington, DC: U.S. Fish & Wildlife Service, 1977). depth of the groundwater should be measured annually using the method described by Turnock & Lawrence.<sup>1</sup> Analysis of this data will show if any changes are occurring, the magnitude of the changes, and possibly provide clues on the cause of the change (e.g., climate, irrigation).

Action 28.

1.

Submit an annual written report to TNC and the SNA Program (if appropriate (TNC guidelines 1, 2, 3, and 4; SNA policies 1, 2, 3 and 5).

The annual report shall note completed management actions, progress made in implementing other actions, number of users and violations (compared against preceding years), solicited and unsolicited comments regarding management, research proposals and studies underway, changes in the resources, problems identified by managers, local residents and researchers, and recommendations for changes in the management plan.

William Turnock & Donald B. Lawrence, Measurement of the level of groundwater at the Cedar Creek Forest (Mimeo, 1953). For more information contact the Sherburne National Wildlife Refuge where this method was also used.

#### III. REVIEW OF THE PLAN

The actions outlined in this plan must be considered provisional, not definitive, and should be reviewed periodically to see that they are still relevant in light of current conditions. Changes in the site's resources, users, and other management considerations are bound to occur. If warranted, the plan's management actions can and should be modified so that they more effectively and/or efficiently implement TNC guidelines and SNA policies. All proposed actions should be primarily directed at protecting and preserving elements which are a significant part of Minnesota's natural diversity. In any event the plan should be thoroughly reviewed and updated at a minimum of every ten years.





