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# Prescribed Burn Requirements Report

Division of Forestry  
January 2017

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## Report Details

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Name of Legislative Report: Prescribed Burn Requirements Report

Minnesota Statute Referenced: *Minnesota Statutes*, section 88.01, subd. 28; *Minnesota Statutes*, section 88.22, subd. 1(b); Minnesota Laws 2016, chapter 189, section 46

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### Prescribed Burn Working Group & Report Costs

Description of Cost	Additional Information	Amount
Staff Time – salary & fringe	140 hours at \$50 per hour. Includes seven meetings with nongovernment prescribed burn practitioners and 40 hours of report preparation	\$7,000
<b>Total</b>		<b>\$7,000</b>

## Statute Language

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Minnesota Laws 2016, chapter 189, section 46. Prescribed Burn Requirements; Report.

The commissioner of natural resources, in conjunction with prescribed burning professionals, nongovernmental organizations and local and federal governments, must develop criteria for certifying an entity to conduct a prescribed burn under a general permit. The certification must include training, equipment and experience requirements and include an apprentice program to allow entities without experience to become certified. The commissioner must establish provisions for decertifying entities. The commissioner must not require additional certification or requirements for burns conducted as part of normal agricultural practices not currently subject to prescribed burn specifications. The commissioner must submit a report with recommendations and any legislative changes needed to the chairs and ranking minority members of the house of representatives and senate committees and divisions with jurisdiction over environment and natural resources by January 15, 2017.

The following bold italics words were added to *Minnesota Statutes*, section 88.22, subd. 1(b) in May 2016:

**Burning ban.** The Commissioner may also, upon such determination, by written order, suspend the issuance of permits for open fires *or prescribed burns*, revoke or suspend the operation of a permit previously issued and, to the extent the commissioner deems necessary, prohibit the building of all or some kinds of open fires *prescribed burns* in all or any part of a wildfire area regardless of whether a permit is otherwise required; and the commissioner also may, by written order, prohibit smoking except at places of habitation or automobiles or other enclosed vehicles properly equipped with an efficient ash tray.

The following definition was added to *Minnesota Statutes*, section 88.01, subd. 28 in May 2016:

**Prescribed burn.** “Prescribed burn” means a fire that is intentionally ignited, managed and controlled by an entity meeting certification requirements established by the commissioner for the purpose of managing vegetation. A prescribed burn that has exceeded its prescribed boundaries and requires suppression action is considered a wildfire.

## Executive Summary

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The Department of Natural Resources (MNDNR) is responsible for this report and associated work, including:

- Leading Prescribed Burn Work Group
- Developing criteria to certify an entity to conduct prescribed burns
- Establishing training, equipment, and experience requirements
- Identifying structure for an apprenticeship program
- Developing a decertification process

MNDNR Division of Forestry is responsible for wildfire protection statewide (with the exception of federal and tribal lands) and for regulating open burning. All open burning requires an open burning permit issued by MNDNR. This makes MNDNR the lead state agency in regulating open burning, including prescribed fire. See *Minnesota Statutes*, section 88.01, subd. 23 for a definition of open burning.

As required by Minnesota Laws 2016, chapter 189, section 46, the MNDNR worked with agency and non-agency prescribed burning professionals to develop the criteria and systems mentioned above. On July 14, 2016, representatives met to determine a process and tasks necessary to complete the project. Organizations represented were:

- MNDNR (with a representative from each division involved in prescribed burning)
- The Nature Conservancy
- Natural Resources Restorations Inc.

- Red Rock Fire
- Prairie Restorations
- Minnesota Native Landscapes
- Great River Greening
- Lake States Fire Science Consortium
- Minnesota Fire Chiefs Association
- Minnesota State Fire Marshal
- U.S. Fish and Wildlife Service
- Department of Military Affairs Camp Ripley Fire Chief

At the July meeting a variety of actions were outlined for the group to work on, including:

- forming the Minnesota Prescribed Fire Council
- developing a Minnesota Certified Prescribed Burner Short Course
- recognizing prior learning and experience for practitioners currently conducting prescribed burns
- allowing access to the electronic prescribed burn reporting system for non-agency Certified Prescriber Burners for low and moderate complexity prescribed burns
- making recommendations to the Minnesota Legislature related to current statutes and session law that would broaden the definition of prescribed burning and facilitate projects

Two subgroups were formed following the initial July meeting to develop a Minnesota prescribed burn certification program and to develop a prescribed fire complexity analysis for prescribed burning within the state. The subgroups have representation from the government agencies involved as well as the nongovernmental prescribed burn practitioners.

An estimate for funding needs to accomplish these tasks is also included in this report. Funding is needed to develop and establish a Minnesota Certified Prescribed Burner Short Course, allow non-agency Certified Prescribed Burners access to the prescribed burning reporting system so accomplishments can be tracked, and maintain the above systems and programs.

# Report

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## Minnesota Prescribed Burn Certification

A subcommittee of representatives from the agency and non-agency partners was formed to frame a system for the certification of non-agency prescribed burners within the state. Certification efforts will focus on non-agency prescribed burn practitioners since all state and federal agencies conducting prescribed burns already have a prescribed burner qualification system in place.

The committee identified experience and training parameters for the certification of prescribed burners at various levels of project complexity. The project complexity levels identified mirror the complexity levels currently used by the various government agencies for prescribed burning. The experience and training parameters identified for a Minnesota Certified Prescribed Burner are similar to, but not as stringent as, those currently utilized by government agencies. Relevant information from current agency courses for non-agency practitioners will be used to develop the Minnesota Certified Prescribed Burner Short Course.

Persons who have been convicted of arson will not be certified as a Minnesota Certified Prescribed Burner at any level.

There are two aspects of prescribed burn certification. One is the certification of an “entity” as outlined in Minnesota Laws 2016, chapter 189, section 46. The majority of these “entities” will be private companies who conduct prescribed burns on private and public lands within the state. Representatives from these companies were members of the certification subcommittee. These entities should be the holder of the “certification.” An entity will be considered a Minnesota Certified Prescribed Burner if it has at least one employee who is qualified at the level needed to conduct the planned prescribed burn.

The second aspect of certification is the qualification of the individual leading the prescribed burn operation. This individual must be qualified at a level of complexity equal to the complexity of the burn. Two levels of Minnesota Certified Prescribed Burn Boss have been proposed: Minnesota Certified Prescribed Burner 3 (MCPB3) and Minnesota Certified Prescribed Burner 2 (MCPB2). MCPB2 is capable of conducting higher complexity burns than a MCPB3.

Holding either MCPB2 or MCPB3 certification will mean the following:

- Minnesota Certified Prescribed Burners (MCPB3, MCPB2, or parent organization/company) will be allowed to conduct prescribed fires under an open burning permit as long as the DNR has been notified of daily burn activities. The MNDNR Electronic Burn Permit System should be upgraded to allow Certified Prescribed Burners direct access to enter the notification. Until then, notification will be to the local DNR Area Forestry Office, which will issue an open burning permit for low and

moderate complexity burns. Under rare circumstance like red flag conditions or periods of extreme wildfire activity, permits will be limited or not issued.

- Local government officials will recognize that the certification holder is trained and experienced in prescribed burn operations and may be allowed to conduct burns during periods when other open burning is restricted.
- Minnesota Certified Prescribed Burners will be allowed to bid and conduct prescribed burn projects on state property equal with their certification level.

## **Certification and Decertification**

An individual will be a Minnesota Certified Prescribed Burner for five years from the date they receive their certification. Certification will be maintained by conducting at least one prescribed burn at their certification level within that five-year time frame. The practitioner can apply for recertification if desired.

A process for decertification will be developed. It will be based on violations of the certification process or Minnesota law. A point system will be developed for decertification and points will be assessed based on law violations, prescribed burn protocol violations, or both. Examples include burning without an open burning permit, providing false information to obtain an open burning permit, conducting a prescribed burn outside of the prescribed area, or having an escaped prescribed fire cause property damage. A Minnesota Certified Prescribed Burner who exceeds a set amount of points over a two-year period will have their certification revoked.

Recertification of a Minnesota Certified Prescribed Burner who has been decertified or does not maintain certification will be allowed in most cases. Remedial training and experience will be required. A person convicted of arson will be immediately decertified and will not be allowed recertification.

## **Minnesota Prescribed Fire Council**

A Prescribed Fire Council should be established in Minnesota. Several other states, including Wisconsin and Michigan, have prescribed fire councils. These councils primarily function as a non-agency oversight group for prescribed burn practitioners within the state. They promote the use of prescribed fire as a land and habitat management tool. Membership on most prescribed fire councils is not limited, but each council usually has an executive board that can make collective decisions for the council within the scope of the council's charter. Minnesota Prescribed Fire Council membership will be open to all agency and non-agency prescribed burn practitioners within Minnesota. The work group members are initiating efforts to form a Minnesota Prescribed Fire Council. Council scope, charter and bylaws are yet to be established.

## Minnesota Prescribed Burner Short Course

Most states with prescribed burner certification require the completion of a two to three day training session related to local prescribed burning issues and procedures. This model should be used in Minnesota. This course will also meet some of the advanced level training that is required for DNR and other agency personnel who hold agency prescribed burn qualifications. The course would cover various topics, including:

- Minnesota legal and liability issues
- Open burn permitting
- Minnesota fuels, weather and fire behavior
- Prescribed burn plan elements
- Pre-burn considerations, complexity and risk analysis, and go or no-go factors
- Smoke management
- Contingency planning
- Public relations

## Recognition of Prior Learning and Experience

Several current prescribed burn practitioners within the state have been conducting prescribed burns in Minnesota for many years with excellent results and safety records. A system for recognizing prior learning and experience will be established so that these individuals can become Minnesota Certified Prescribed Burners without additional training. This recognition will be based on several factors, including:

- Previous training
- Number of burns conducted as a burn boss or ignition boss
- Number of burns conducted with multiple ignition teams and multiple holding or mop-up crews
- Number and type of burns conducted of various sizes and in various fuel types
- Complexity of burns conducted near urban interface areas or with smoke management considerations

A score sheet for evaluating the prior experience and training of a person wishing to be certified as a Minnesota Prescribed Burner was created. It outlines the factors above and applies a point system that will allow the assessor to gauge the training and experience of the applicant.

The National Wildfire Coordinating Group (NWCG) is a collection of national wildland and fire-fighting agencies that have established NWCG prescribed burn qualifications which are considered the gold standard for prescribed burn certification. The U.S. Forest Service, The Nature Conservancy and other organizations follow NWCG qualifications for prescribed burning. The MNDNR prescribed burn criteria follow NWCG qualifications. NWCG and MNDNR qualifications

exceed anticipated Minnesota Prescribed Burner Certification requirements. It is burdensome and duplicative to require those with NWCG and MNDNR qualification to also maintain Minnesota Prescribed Burner Certification. Agencies and individuals with NWCG and MNDNR prescribed burn qualifications will be recognized as meeting the Minnesota Prescribed Burner Certification requirements and will not need to take the Minnesota Prescribed Burner Short Course or take additional steps to obtain or maintain Minnesota Certified Prescribed Burner status.

## Prescribed Fire Complexity Analysis

A prescribed fire complexity analysis or “complexity rating process” provides management and implementation personnel a relative ranking as to the overall complexity of a specific prescribed fire project. It also provides a process that can be used to identify prescribed fire plan elements or characteristics that may pose special problems or concerns. The analysis also points to where prescribed fire plan changes may be needed to mitigate or eliminate these problems or concerns. A simplified questionnaire for an analysis was developed and reviewed by the working group.

The goal of the prescribed fire complexity analysis is to simplify the review process by the MNDNR and assure authorities in local government units that the complexity of a fire was evaluated. The Prescribed Fire Complexity Analysis will be used as a tool to inform the Prescribed Burn Plan and open communication between the practitioner and the local governmental unit. The responsibility for liability and safety on the project will continue to lie with the individual or entity that is implementing the prescribed burn. Prescribed burn projects rated at low or moderate, as assessed by a Minnesota Certified Prescribed Burner under the Prescribed Fire Complexity Analysis, will be issued a Minnesota Open Burning Permit without further review by MNDNR. A copy of the Prescribed Fire Complexity Analysis is included in Attachment A.

## Recommended Statutory Changes

### Modify Prescribe Burn Definition

The 2016 Legislature added a definition of prescribed burning to *Minnesota Statutes*, section 88.01, subd. 28. This wording defines a prescribed burn as a fire that is intentionally set for the purpose of managing vegetation. Prescribed burns are also conducted for wildlife habitat management. The definition should be amended to clarify that prescribed burns are done for vegetation and wildlife habitat management purposes.

Additionally, the language in the definition related to a prescribed burn that “exceeds its prescribed boundaries and requires suppression action is considered a wildfire” is too broad. Under this definition prescribed burns that exceed the boundaries by a few feet or can be readily



extinguished by the burn crew would be considered wildfires. The definition should identify prescribed burns that need organized wildfire suppression response from a local department as a wildfire. If a prescribed burn is declared a wildfire, the burner and/or landowner would be responsible for all costs associated with the suppression of the fire and possibly a fine.

Based on these considerations, the work group recommends the definition of prescribed burning in *Minnesota Statutes*, section 88.01, subd. 28 be amended to:

**Prescribed burn.** “Prescribed burn” means a fire that is intentionally ignited, managed and controlled for the purpose of managing forests, prairies, or wildlife habitats by an entity meeting certification requirements established by the commissioner ~~for the purpose of managing vegetation~~. A prescribed burn that has exceeded its prescribed boundaries and requires immediate suppression action by a local fire department or other agency with wildfire suppression responsibilities is considered a wildfire.

### **Organize Work under Open Burning Permits**

The first sentence of Minnesota Laws 2016, chapter 189, section 46, states the commissioner “...must develop criteria for certifying an entity to conduct a prescribed burn under a *general permit*.” The term “general permit” has a specific definition as outlined in *Minnesota Statutes*, section 88.17, subd. 1, that relates to permits allowed in “non-wildfire” parts of the state. The adoption of “general permit” for open burning requires an action by the county board. Only five of Minnesota’s 87 counties have adopted such an ordinance. Leaving this wording in the requirements for prescribed burning means the remaining 82 counties would need to adopt this type of ordinance. Replacing the term “general permit” with “open burning permit” (which is the prevalent type of burning permit issued across the state) would solve this problem and also allow MNDNR to address issues through policy changes and improvements. Minnesota Laws 2016, chapter 189, section 46 should be amended as follows:

The commissioner of natural resources, in conjunction with prescribed burning professionals, nongovernmental organizations and local and federal governments, must develop criteria for certifying an entity to conduct a prescribed burn under a ~~general permit~~ open burning permit. The certification must include training, equipment and experience requirements and include an apprentice program to allow entities without experience to become certified. The commissioner must establish provisions for decertifying entities. The commissioner must not require additional certification or requirements for burns conducted as part of normal agricultural practices not currently subject to prescribed burn specifications. The commissioner must submit a report with recommendations and any legislative changes needed to the chairs and ranking minority members of the house of

representatives and senate committees and divisions with jurisdiction over environment and natural resources by January 15, 2017.

## **Recommended Policy Changes to MNDNR**

The following recommendations can be accomplished through MNDNR changes to policy or practice within the agency.

Recommendations that need additional funding to be completed:

- Change DNR Forestry data systems to:
  - Provide easy access to open burning permits by Minnesota Certified Prescribed Burners through the Electronic Open Burning Permit System.
  - Allow access to the MNDNR prescribed burn reporting system by Certified Prescribed Burners to achieve more accurate reporting of overall prescribed burning accomplishments. This is expected to significantly reduce the number of burns needing DNR review. However, it will require major alterations to the current data system including programming work by Minnesota IT Services.
- Develop the Minnesota Certified Prescribed Burner Short Course by December 2017. The working group identified subject matter experts to establish and deliver the course.

Recommendations that could be accomplished within available agency resources:

- Establish the Minnesota Prescribed Fire Council as soon as possible. The non-agency members of the working group agreed to form the council with MNDNR. Suggested areas of focus for the council are:
  - Education and outreach
  - Training
  - Government relations
  - Liability
  - Implementation and standards
  - Tracking Minnesota Certified Prescribed Burners
- Promote Prescribed Burner Certification to local government units and Fire Departments. Information and trainings should emphasize the benefits of prescribed fire and explain how experience and training relate to certification of prescribed burners.
- Emphasize the importance of prescribed burn accomplishment reporting to all Certified Prescribed Burners.

- Recognize prescribed burners qualified through the MNDNR and National Wildfire Coordinating Group as having Minnesota Certified Prescribed Burner status.
- Maintain a complete list of Minnesota Certified Prescribed Burners.

## Anticipated Cost of Recommendations

### Cost of Report Recommendations Table

Description of Cost	Additional Information	Amount
Minnesota Certified Burner Short Course Establishment	Set up of course	\$50,000
Delivery of each Short Course	One course per year for two years at \$5,000 per course	\$10,000
Changes to MNDNR Electronic Open Burning Permit System	Analysis and determination of changes needed and computer programing to make changes	\$15,000
Training for Local Government Units (LGU) and Local Fire Departments (FD) related to recommended changes	Changes to current open burning permit methods and promotion of prescribed burning benefits.  100 LGU/FD at \$500 per unit	\$50,000
<b>Total Cost</b>		<b>\$125,000</b>

## ESCAPE-RISK ASSESSMENT







Relative Leveling Points	0	1	2	3	4	5	Total
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**A. SITE SPECIFICS**

Slope % (average)	<10	10-20	21-30	31-40	41-60	>60	
Aspect Inside Unit	-----	N	NE,NW	E,W,Flat	SE,SW	S	
Fuel Model Inside Unit	-----	8	1,5	9	2,11	3,4,10,12	

A. SUBTOTAL:

**B. CONTAINMENT FACTORS FOR ESCAPED RUNNING HEAD- FIRE**

Projected Flame Len. -ft.	<1.0	1.0-1.5	1.6-2.0	2.1-4.0	4.1-8.0	>8.0	
Projected R.O.S.- ch/hr.	-----	<2	2-4	5-7	8-10	>10	
Line Product Rate- ch/hr.	>20	19-20	16-18	13-15	10-12	<10	
Fireline Width-ft.	Island	>16	13-16	9-12	3-8	<3	
Fuel Model- Outside Unit (most prevalent)	-----	8	1,5	9	2,11	3,10,12	
Position on Slope	-----	Top,Flat	upper1/3	middle 1/3	lower 1/3	bottom	
Unit Configuration							
Unit Size - Acres	-----	<10.0	10.1-20.0	20.1-30.0	30.1-40.0	>40.0	
% Continuity of Fuel Adjacent to Burn Unit	<15	15-25	26-35	36-50	50-75	>75	
Time of Ignition	21-0600	06-0800	08-1000	10-1200	1200-1400	14-1600	

B. SUBTOTAL:

**C. PRESCRIPTION PARAMETERS**

Mid-Flame WS - mph	-----	3-4	5-6	7-8	9-15	<3 or >15	
1 hr. Fuel Moisture-% Fuel Model 1 or 2 Only	≥12	11	10	9	8	<8	
1 hr. Fuel Moisture-% Fuel Model 3 Only	>25	22-25	18-21	14-17	10-13	<10	
1 hr. Fuel Moisture-% Timber/Slash Group Only	>20	19-20	16-18	13-15	10-12	<10	
Relative Humidity-%	>75%	56-75%	46-55%	36-45%	25-35%	<25%	
Live Fuel Moisture-%	>300	201-300	151-200	101-150	50-100	<50	
Drought Index (KBDI)	<100	101-200	201-300	301-400	401-500	>500	

C. SUBTOTAL:

<p><b>RATIONALE:</b></p>	<p>&lt;45 = LOW RISK    <b>TOTAL POINTS (A.+B.+C.)</b> _____</p> <p>45-75= MODERATE RISK</p> <p>&gt;75= HIGH RISK</p> <p style="text-align: center;"><b>FINAL ESCAPE-RISK RATING</b> _____</p>
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