Volunteer Fire Departments Using Prescribed Fire

By Agren, Inc.

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"Resource Enhancement and Protection program (REAP): Invest in Iowa, our outdoors, our heritage, our people. REAP is supported by the state of Iowa, providing funding to public and private partners for natural and cultural resource projects, including water quality, wildlife habitat, soil conservation, parks, trails, historic preservation and more."

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Why Develop a Prescribed Fire Service?

There are many reasons why volunteer fire departments choose to make prescribed fire available to their communities as a service. Some advantages relate directly to the department itself – safety, fundraising, convenience and planning. Other benefits are specific to the natural resources in your area. Those who have already created prescribed fire services are the best sources of information as you develop your own service.

1. Safety

The first and foremost reason to promote prescribed fire is safety. Creating your own burn service puts you – the fire department – in charge of when and where controlled burns are held. All departments have had the experience of being called out when a fire "escapes" from a well-intentioned but untrained landowner. By the time the fire department arrives, the fire may have caused considerable damage and may be threatening to burn structures or areas that weren't intended to burn. This can put both the landowner and firefighters in danger.

2. Raise funds for the department

Flipping pancakes and sponsoring community dances can be good fundraisers. But operating a burn service in your local community may be a better way to raise money for your department. For the past 10 years, the Smithland Volunteer Fire Department in Woodbury County has raised funds and awareness by planning and conducting prescribed fires as a service. While they still host other types of fundraisers during the year, prescribed fire has evolved as their main source of outside revenue.

Volunteer fire departments may not charge for their services, but they may accept donations. It is not uncommon for a landowner to make a donation to the local VFD for helping with a burn. If a landowner is receiving federal or state cost-share funds for doing a burn, all or part of those funds may be donated to the department for their services.

3. Convenience for your department

By establishing your own prescribed fire service, you control when and where fires are set. Your firefighters can schedule their time to assist with the fire, when possible. You will greatly reduce, if not eliminate, inconvenient calls to put out fires that get away from landowners who try to do their own burning.

4. Conserve natural resources

Prescribed fire is recognized as an appropriate tool for managing grassland and forest habitats. It is promoted by conservation agencies to manage ground enrolled in the Conservation Reserve Program (CRP) and Wetlands Reserve Program (WPR). Specific goals for each fire should be defined. Weather conditions and the timing of the burn play a big role in meeting specific goals. *(Information about when to burn for specific objectives is discussed in greater detail in Chapter 2.)*

How Prescribed Fire Benefits Natural Resources

1. Restores the ecosystem

Fire was once a natural occurrence on Iowa's grasslands and forested areas. Tree ring samples show that fire occurred naturally in regular intervals. Historic accounts from early settlers and native inhabitants relate the presence of fire on the Iowa prairie.

Much of the natural occurrence of fire was halted by settlers as they moved west. Fire was perceived as a threat to newly-built homes and communities, and to efforts to make a living from the land.

Prescribed burns are meant to mimic nature's historic pattern and bring balance back to the land. Unlike wildfires, prescribed burns are conducted during appropriate weather conditions so they can be controlled. Well-planned and implemented burns help to control the invasion of unwanted plant species. Fire encourages the growth of native plants and eliminates old, dead plant material that accumulates over years.

2. Creates biodiversity

Fire was here long before we were. It has played a productive role in the natural systems of the Midwest for centuries, revitalizing the landscape.

Along with grazing animals like bison and elk, fire kept the tall-grass prairie in present-day Minnesota, Wisconsin, Iowa, Illinois and Missouri healthy. It's estimated that before European settlement, the prairie burned naturally every four or five years. Fire removed dead vegetation and returned nutrients to the soil, nurturing native grasses and wildflowers. It kept shrubs and trees from invading the open grasslands. Quite simply, it kept the prairie, prairie.

Where the prairie met the woodlands, oak savannas supported a variety of plants and wildlife. These open woodlands scattered with occasional oak trees allowed sunlight to reach the ground, where prairie grasses and wildflowers flourished. Savannas relied on periodic fires to keep their understory open, while fast-moving wildfires left the thick-barked oak trees unharmed.

3. Improves forage quantity and quality

Making prescribed fire part of a pasture management strategy will create a high-functioning grazing system, bringing greater returns to livestock operators.

By using fire as a management tool, livestock grazing operations have reported increased weight gain, improved forage quantity and quality, better grazing distribution, and improved control of parasites and diseases.

Grass quality, palatability and availability are improved because fire removes dead plant material and improves access to new growth. After a fire, digestibility and protein content of ingested forage is higher. If soil moisture is adequate, grass yields increase after a fire because exposing and darkening the ground allows it to warm more quickly and stimulate early plant growth.

In addition some troublesome pests, such as ticks and disease-causing fungi, can be controlled by fire, even if only during the growing season after the fire.

4. Enhances wildlife habitat

Habitat requirements for wildlife species are highly variable. Fire may be beneficial or detrimental to wildlife habitat, depending on many factors such as timing, season, size of the burn and species of wildlife. In general, prescribed fire does not directly kill wildlife; animals usually escape by running or flying away, going below ground, or moving to unburned islands of vegetation.

A misconception exists among some that trees are necessary for wildlife habitat. This isn't necessarily so. Many wildlife species do not require trees and are adversely affected by their presence. For example, wildlife species that are native to prairie and shrubland vegetation do not require trees and in fact are precluded from their habitat if trees are allowed to invade or are planted. Fire can be an easy, inexpensive and natural tool for eliminating unwanted trees.

Popular game species such as bobwhite quail, white-tailed deer and wild turkeys benefit from the effects of fire to maintain a high-quality habitat. Some wetland habitats also benefit from periodic fire to maintain desirable conditions. Fire can improve forage quantity and quality. It also will reduce internal and external parasites on wildlife.

Conducting Prescribed Fire . . . An Overview

As your department begins to conduct prescribed burns, keep in mind that advanced planning is the Number 1 key to success. Other sections of this notebook go into detail about both the benefits of prescribed fire and steps leading up to a burn. This overview briefly covers the three components of all controlled burns – advance planning, preparation and evaluation.

Planning

- Define your objectives – why are you burning?
- Develop a prescribed burn plan & burn prescription *(A sample burn plan can be found in Chapter 6 of this guide.)*
  - Define unit to be burned.
  - Identify parties to be notified of the upcoming burn.
  - Prepare maps of burn site.
  - Define burn goals and objectives.
  - Define conditions necessary to accomplish objectives.
  - Explain equipment to be used.
  - Outline procedures to be followed.
  - Spell out contingency plan(s).
- Understand legal considerations.
- Understand situations that may pose special hazards such as roads, abandoned wells, power lines, junk piles, toxic substances, etc.
- Confirm mutual aid assistance with neighboring departments.

Prescribed Burn Checklist:

- √ **Complete prescribed burn plan**
- √ **Construct fire breaks**
- √ **Assemble equipment and trained crew**
- √ **Complete go/no-go checklist**
- √ **Conduct burn with constant supervision**
- √ **Secure perimeter of the burn**
- √ **Monitor until fire is completely out**

Preparation

- Train and inform crew of safety measures and proper prescribed fire management.
- Prepare equipment.
- Prepare fire breaks.
- Manipulate fuels if necessary.
- *Determine if weather conditions are within acceptable limits *(see chart below)*.

Evaluation

- Post-fire evaluation
  - Were the goals and objectives of the fire accomplished?
  - Was the fire conducted safely and according to plan?
- Refine the plan.
- Schedule the next burn.

* Determine if weather conditions are within acceptable limits, both at the time of ignition as well as the forecast for the burn period. Burning outside of these ranges may be done if you have specific goals in mind and understand the hazards.

Weather Factor	**Preferred Range**	**Limit**
Wind speed	5-15 mph	20 mph
Wind direction	Steady, from one direction	
Relative humidity	40-70%	>30%
Temperature	55^{o} – 80^{o}F	50^{o} – 85^{o}F
Cloud cover	Clear – 70% cover	
Ceiling	2,000 ft- unlimited	

Training and Safety Guidelines

Prescribed fire can be a valuable land management tool, but it carries inherent risks. Poorly managed burns or ignorance of safety measures can lead to property damage or even injury or death. Even in well-managed burns, accidents can occur. Before, during and after every burn, safety should be the primary concern.

Many of the following recommendations and guidelines are adapted from Iowa Prescribed Fire Guidelines *(August 2004 draft)*. The complete guidelines can be found on the Iowa Department of Natural Resources website:
http://www.iowadnr.com/forestry/pdf/guidelines.pdf

Training Recommendations

Levels of training

In general, there are three levels of training for persons who want to conduct prescribed fire. Departments that are just introducing this service should consider having at least one or two members with the NWCG (National Wildfire Coordinating Group) level training, while other department members may have a minimal level as explained below.

1. **Minimal basic prescribed fire and/or wildland fire trainings**

   These trainings are usually hosted by the state Department of Natural Resources (DNR) or a local conservation group or agency. They typically last no more than one day and may include a demonstration burn. The goal is to teach the basics of safe burning and to promote the use of burning for ecologically-important objectives.

   Iowa DNR has developed three eight-hour courses specifically for volunteer firemen and landowners:

   1) Basic Wildland Fire
   2) Basic Engine Operation
   3) Iowa Prescribed Fire Class

   These courses can be scheduled for your area as long as enough people attend and DNR has sufficient lead time. For more information, call the DNR Wildland Fire Program Headquarters in Ames at 515-233-1161.

2. **College and university wildfire/prescribed fire trainings**

   This training can vary widely in intensity and time commitments. Institutions may offer NWCG courses and/or their own custom-built courses. In Iowa, prescribed fire courses are offered at Kirkwood Community College in Cedar Rapids, Iowa Western Community College in Council Bluffs, and Western Iowa Tech Community College in Sioux City. Other colleges and universities also may offer training. Check with them individually to learn about their course offerings.

3. **National Wildland Coordinating Group (NWCG) level training**

   The most intensive and time-consuming group of trainings, this is geared toward wildfire suppression, not necessarily prescribed burning as a management practice.

a. s130/190 is a course for beginners that requires 40 hours of coursework. Passing an optional pack test qualifies persons for a red card which makes them eligible as an entry-level wildland firefighter with federal agencies. Once a firefighter earns a red card by taking the s130/190 course and passing a pack test, they must attend yearly one-day refresher courses to maintain their red card.

b. "Crosswalk" is a new group of trainings designed to provide critical wildland fire training to structural firefighters who already have structural fire training (e.g. Firefighter 1). Various levels of training are available through Crosswalk. For example, taking the relevant Crosswalk for Firefighter 1 would provide training equivalent to s130/190. Contact DNR at 515-233-1161 for more information.

State guidelines

State of Iowa Prescribed Fire Guidelines strongly recommend that NWCG standards be followed for prescribed fires in Iowa. Their website is included in the reference section of this binder. The NWCG defines a large variety of positions within an "incident command system" for firefighting situations. They compose task books and coursework to train individuals interested in being certified for the various positions.

Iowa guidelines state that it is preferable to have highly trained firefighters working on a prescribed fire, for both safety and liability reasons. Based on the complexity and risk factors associated with each burn, burn bosses should have completed the appropriate advanced level of fire training. Crew firefighters on both simple and complex prescribed fires should have completed NWCG s130/s190 or be paired with someone who has completed those courses.

It should be noted that most federal agencies require more stringent levels of accreditation for their fire crews. Individuals wishing to participate on burns conducted by these agencies will be required to have completed s130/190 and the pack test at a minimum.

There are refresher courses for some NWCG levels. To maintain a red card, individuals need to complete the s130/s190 courses (once), pass at least a moderate level pack test (carry 25 pounds two miles in 30 minutes), and attend a yearly one-day refresher course. Refresher courses for other NWCG positions vary. In some cases refresher courses are not offered; certification is maintained by performing in the credentialed capacity (or higher) on a fire assignment at least once per year.

Equipment Recommendations

Personal Protective Equipment

It is recommended that all fire personnel wear Nomex clothing (shirt and pants), high-top leather boots, leather gloves, fire-rated hardhat, eye/ear protection, and all underclothing be of natural fiber. Nylon and polyester clothing MUST BE AVOIDED as they can melt and cause severe burns. Roadside visibility materials are essential if the fire is near a roadway.

Ideally, personnel also should carry a fire shelter (for protection from flames and superheated gasses in the event of entrapment) and fussees (as a means to light a separate fire in order to burn out a safety zone ahead of a threatening fire front). A fussee should not be considered an alternative to a fire shelter; in some conditions a fire shelter will be critically needed but a fussee will be useless.

Recommended Tools

The tools needed for a safe prescribed fire will vary with each fire and should be specified in the burn plan. A drip torch, pre-tested 2-way radios, cell phone, flappers, rakes, backpack pumps, weather kit, and a first aid kit will be needed for most fires. Additional commonly used items include a stop/go paddle if the fire is near a roadway, chain saws, mechanized water transport, leaf blower, and a portable fire weather radio.

Other Safety Recommendations

- Those assisting with the burn must be familiar with basic prescribed burning and fire fighting techniques.
- Personnel with known health conditions such as high blood pressure, heart conditions and respiratory diseases must not participate.
- Make sure that all of the fire equipment is in good working condition and that those using the gear are familiar with its use.
- Notify neighbors, 911 dispatcher and local law officials of your plans to burn.
- Prior to ignition, review burn plan with the crew, designate individual responsibilities, and brief everyone on communication procedures for notifying emergency personnel.
- Plan for easy communication with burn crew members. Use two-way radios or cell phones.
- Be aware of possible emergency situations.
- Observe any changes in the weather and stay updated on forecasts.

Essential Components of a Burn Plan

A prescribed burn is a carefully planned and executed event. Long before a match is struck, crew members complete a site-specific Prescribed Burn Plan that outlines the tracts of land to be managed. Managers carefully determine weather conditions that will help control the flames while still allowing an effective burn. Air temperature, humidity, wind speed and direction, and vegetation moisture all need to be monitored and kept "within prescription" when burning.

On the day of the burn, local emergency personnel and residents next to the burn site are notified. Equipment and trained personnel are assembled at the site. After confirming that weather conditions meet the requirements, the "burn boss," an experienced fire manager, gives the okay and oversees the burn. The burn is monitored constantly. Flames and embers are carefully extinguished before the crew leaves the site.

Because of the large degree of variation in the complexity of prescribed burns, there are no standardized burn plans. A burn plan can be short or long, depending on the complexity of the proposed burn and the desires of the burn boss.

All burn plans should include the following sections:

1. Site information
2. Burn site specific information
3. Objectives & goals
4. Site preparation
5. Organization: personnel & equipment
6. Prescription: weather, fire behavior, smoke management
7. Ignition & holding plan (with map)
8. Contingency plan (wildfire response plan)
9. Mop-up
10. Post-burn evaluation

For each section below, there are numerous sub-headings that may or may not be included in a specific burn plan. Whether or not a sub-heading is included in a specific burn plan is determined by the site and the preferences of the burn boss. Each section and potential headings are discussed below.

1. Site Information

This section contains contact information for the site to be burned.

Potential headings:

a. Owner name, home phone & cell phone
b. Property name & address
c. Location
    - Section
    - Township
    - Range
    - 911 address
    - GPS coordinates
d. Contact information
    - Local dispatch center
    - Fire department
    - Public Safety Communication Center
    - Medical emergency
    - Other
e. Courtesy notifications to neighbors & organizations

2. Burn Site - Specific Information

This section includes information specific to the burn being planned.

Potential headings:

a. Range of target dates
b. Permits needed (check all appropriate)
    - ☐ Air quality
    - ☐ City ordinance
    - ☐ Fire chief
    - ☐ None
c. Estimated size of burn
d. Description of burn site
    - Attach drawing or photo of site, indicate N and other pertinent landmarks
    - Overstory (percent canopy, basal area, height)
    - Understory (percent, height)
        - Warm season grasses
        - Cool season grasses
        - Forbs
        - Shrubs or brush
    - Fuel type
    - Site topography (slope, aspect, etc.)
    - Area of contiguous fuels
    - Firebreaks present (indicate on map)
    - Backup firebreaks present (indicate on map)
    - Closest water source (type and distance)
    - Other water source(s)

e. Previous burn management (dates, results, wildfire or prescribed, etc.)
f. Description of adjacent area (if significantly different in fuels, topography, etc.)
g. Special considerations (flora, fauna, safety, public not in agreement, etc.)
h. Smoke-sensitive areas within 3 miles (people with asthma, buildings, roads)
i. Hazards (power lines, gas lines, wells, etc.)

3. Objectives & Goals

This section contains information about the reason(s) the burn is being planned.

Potential headings:

a. Management objective
    - Wildland Urban Interface (WUI) considerations (hazardous fuel reduction)
    - Hazard reduction
    - Ecological
    - Training
b. Resource objective (be specific, for example "increase forb component by 20%"):
    - Stimulate warm season grass
    - Stimulate cool season grass
    - Reduce cool season grass
    - Stimulate forbs
    - Manipulate grazing
    - Control invasive plants
    - Improve habitat
    - Remove litter

4. Site Preparation

This section details work that needs to be done prior to the planned burn.

Potential headings:

a. Firebreaks needed
    - Type (dozer line, hand line, mowed, other)
    - Length
    - Width
b. Identification and location of natural firebreaks
    - Roads
    - Crop fields
    - Waterways (note material composition and width)

5. Organization – Personnel Equipment

This section outlines the organizational and equipment needs of the planned burn.

Potential headings:

a. Firing crew
b. Holding crew
c. Traffic control crew
d. Equipment
e. Other

6. Prescription

This section covers data to be collected immediately before ignition of the planned burn. Some items must fall within a previously determined range or the burn will be cancelled.

Weather*:* acceptable burning parameters (indicate minimum/maximum or circle all appropriate)

- Type of firing method
  - Backing, flank, ring, strip head, head
- Allowable rate of spread (specify ft./min. or chains/hr.)
- Allowable flame length (feet)
- Allowable mid-flame wind speed (mph)
- Allowable wind direction
  - N, NE, E, SE, S, SW, W, NW
- Relative humidity (percent)
- Temperature (Fahrenheit)
- Time of year
  - Spring
  - Summer
  - Dormant
- Fuel Moisture
  - 4-8 , 1-hr. , TLF3 7-12 , 10-hr. TLFM (fuel sticks)
- Days since last rain

Fire behavior

What makes some fires burn so hot and others not? What makes fires spread fast one day and slow on another day? A fire behaves according to the environment in which it is burning. This environment consists of various elements of fuels, topography and weather. These elements and their reactions with one another - and the fire itself - determine the behavior of the fire.

Smoke management

Visibility is a major consideration in smoke management. Your planning for prescribed fire must include the potential for hazardous situations, including impaired visibility created by smoke both on and off our lands.

7. Ignition & holding plan with map

This section contains the protocol to be followed immediately before ignition of the burn. Some headings are to be filled in at that time.

Pre-Burn Contacts	**When**	**Who Will Do Contact?**
Weather service	Day before	
Fire departments	Day before	
Conservation officer	Day before	
County sheriff	Day before	
County health department	Day before	
Local residents	ASAP and day before	
Burn Day Contacts	**When**	**Who Will Do Contact?**
Weather service	Morning of burn	
All cooperators	Morning of burn	
Local residents	Morning of burn	
Fire headquarters	Morning of burn	

Potential Headings:

a. Map of burn site (may be included w/site description)
b. Weather data *(circle source)*
    - NOAA
    - Internet media (specify)
    - NWS
    - Other (specify)
c. Other weather data details *(On-site weather data collection is needed before and during a burn.)*
    - Sky
    - Precipitation
    - Cold fronts
    - LASI
    - Wind direction
    - Highest temperature
    - Lowest relative humidity
    - Atmospheric stability
    - Wind speed
    - Mixing height
d. Firing technique: this is often not decided until the day of the burn

Go – No-Go List		
If all 13 Go – No-Go questions are answered "Yes," you may proceed with the test fire.		
Yes	**No**	**Question**
		1. Are all fire prescription specifications met?
		2. Is the weather forecast favorable now and throughout the burn?
		3. Are all necessary fire breaks constructed and checked?
		4. Are all personnel required in the plan on-site?
		5. Have all personnel been briefed on the prescribed burn plan?
		6. Have all personnel been briefed on safety hazards, escape routes and safety zones?
		7. Do all personnel have the required PPE with them?
		8. Is all required equipment in place and in working order?
		9. Do you have needed direct communications established?
		10. Do you have access to adequate water?
		11. Do you have all keys and gate access?
		12. Have you made all notifications?
		13. In your opinion, can the burn be carried out according to the plan and will it meet the planned resource management objectives?

8. Contingency Plan: Wildfire Response Plan

This is the back-up plan in case the fire does not go as planned or if it escapes. A contingency plan should be in place and ready to use should a controlled fire escape.

9. Mop-up

Mop-up is the process of checking the entire perimeter of the burn area to ensure all fires or smoldering materials are out. This could include cow chips, logs, dead trees and small areas still burning.

10. Post-burn evaluation

a. Operational data
b. Weather data after burn
c. Vegetation status after burn (Pre- and post-burn photographs are both ideal and simple to collect, and can be compared to photos taken months later.)
d. Prescribed fire summary
e. Recommendations for future management

The Best Times to Burn for Specific Objectives

The timing of your prescribed burn is crucial to chances for success. Following are many of the most common reasons to conduct controlled fire, and the best times to schedule the burn to achieve specific objectives.

Tree and brush control

- Late spring and summer fires work best. Fall burns are not as effective.
- Repeated fires over the course of several years are needed to control re-sprouting of brush.
- Combine fire with mechanical removal for maximum effect.

Maintenance of native plant communities

- Late spring fires encourage warm season native grasses.
- Summer and fall fires encourage native wildflowers.

Improvement of wildlife habitat

- It may be necessary to vary burning practices to improve habitat. Early spring, late spring, summer and fall fires all affect wildlife habitat differently. Varying fire treatments from year to year will maximize wildlife habitat and food availability.

Eradication of Eastern Red Cedar

- Fall or spring fires provide the best control because Eastern Red Cedar foliage is drier and more flammable after the fall freeze and before spring growth begins.
- Use of the warmest, driest conditions consistent with safety and fire control will improve effectiveness. This is especially important in grazed pastures where fuel loads are low.

Sumac control

- Cut repeatedly in July or August.
- Fire alone is ineffective because while aerial stems may be top-killed, the plant will re-sprout from root buds. However, fire can reduce canopy height and ease herbicide application. Summer fires have the greatest impact on reducing sumac canopy.

Leafy spurge control

- Burning actually stimulates growth.
- Apply chemicals or introduce beetles for best control. Fire application after releasing beetles is beneficial. To avoid damage to the beetle population, avoid burning in late spring or early summer. August through March or April are good times to burn.
- Uniform regrowth after a fire may allow easier herbicide control.

Sweet clover control

- Reacts best to back-to-back burns. A first burn in fall or spring causes an increase in seed germination. Following the first burn with a second in late spring of the following year prevents flowering in that second year.

Musk thistle control
- Burn as late as possible in the spring to control flowering.

Canada thistle control
- Late spring burns in May-June are most effective.
- Early spring burns can increase sprouting and reproduction.
- Thistles may increase the first year following a May burn but will decline with two growing seasons. Immediate reductions in thistles occur following a June burn.
- Burn every year for three years.

Smooth brome control
- Burn at time of tiller elongation to reduce tiller density and biomass. This is typically late spring (early May).

Reed canary grass control
- Burn in late fall or early spring for five to six consecutive years.
- Burning during growing season may reduce vigor and help control spread.

Kentucky bluegrass control
- Burn in late spring.

Crown vetch control
- Late spring burns control seedlings, but adult plants will re-sprout.
- Follow burning with herbicide treatment on regrowth.

Where to Go for More Information

Planning resources

- Tall Timbers Fire Ecology Database: *http://www.talltimbers.org/research/fireeco.htm*
- National Fire Danger Rating System (NFDRS): *http://www.fs.fed.us/raws/standards.shtml*
- Incident Command System (ICS) forms: *http://www.nwcg.gov/pms/forms/icsforms.htm*
- Florida Division of Forestry: *http://www.fl-dof.com/wildfire/index.html*
- Riverside Fire Lab: *http://www.fs.fed.us/psw/rfl/*
- National Climate Data Center: *http://lwf.ncdc.noaa.gov/oa/ncdc.html*
- NPS fire monitoring handbook: *http://www.nps.gov/fire/fire/fir_eco_mon_fmh.cfm*
- Fire Effects Information System: *http://www.fs.fed.us/database/feis/*
- Fire Behavior Prediction programs: *www.fire.org*

Weather resources

- Weather Underground: *http://www.wunderground.com/*
- Accuweather: *http://www.accuweather.com*
- Lightning detection: *http://www.lightningstorm.com*
- Satellite images of the Plains: *http://www.osei.noaa.gov/Events/Fires/US_Plains/*
- U.S. Fire Service Wildland Fire Assessment System: *http://www.wfas.net/*
- Drought Monitor: *http://drought.unl.edu/dm/*

Other helpful sites

- National Wildfire Coordinating Group: *http://www.nwcg.gov/*
- Wildland Fire: *http://www.wildlandfire.com/*
- Cerro Grande Report: *http://www.nps.gov/cerrogrande/Board_report-feb26final.pdf*
- GeoMAC Wildland Fire Support: *http://geomac.usgs.gov/*
- The Nature Conservancy Fire Management: *www.tncfire.org*
- National Interagency Prescribed Fire Training Center: *http://fire.r9.fws.gov/pftc*
- U.S. Fish and Wildlife Service (FWS) Prescribed Fire Burn Boss 3 (RxB3) task book: *http://fire.fws.gov/fm/docs/RXB3_PTB.pdf*
- National Interagency Fire Center: *www.nifc.gov*
- Tall Timbers: *http://www.ttrs.org*

Sample burn plans

- Iowa NRCS: *ftp://ftp-fc.sc.egov.usda.gov/IA/news/PrescribedBurning.pdf*
  (See Chapter 5 in this binder.)
- Missouri NRCS:
  http://www.mo.nrcs.usda.gov/technical/forms/out/agronomy/JSAgron18rev10_06.pdf
- The Nature Conservancy: *http://prrcd.org/inl/TNC%20burn%20plan.pdf*

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Fire Works!! A step-by-step photo guide.

1. Define your objectives . . . why do you want to burn? Include objectives when preparing burn plan.

2. Inform crew of safety measures and proper prescribed fire management.

3. Check weather conditions to ensure they are within acceptable limits.

4. Prepare fire breaks prior to ignition.

5. Ignite the fire according to techniques outlined in the burn plan.

6. Maintain fire lines during the burn.

7. Mop-up by removing burning material along or near control lines. Monitor hot spots after fire is completed.

8. Evaluate whether goals and objectives were accomplished and if the burn plan was followed.

1. **Local minimalist prescribed fire and wildland fire trainings**
   These trainings are usually hosted by the state Department of Natural Resources (DNR) or a local conservation group or agency. They usually last no more than one day and may include a demonstration burn. The goal is to teach the basics of safe burning and to promote the use of burning for ecologically-important objectives. Iowa DNR has developed an eight-hour course specifically for volunteer firemen and landowners. This course can be scheduled for your area as long as enough people attend and DNR has sufficient lead time.
2. **College and university wildfire/prescribed fire trainings**
   This training can vary widely in intensity and time commitments. Institutions may offer NWCG courses and/or their own custom-built courses.
3. **National Wildland Coordinating Group (NWCG) level training**
   The most intensive and time consuming group of trainings, this is geared toward wildfire suppression, not necessarily prescribed burning as a management practice.
   a. s130/190 for beginners with 40 hours of coursework. Passing an optional pack test qualifies you for a red card which makes you eligible as an entry-level wildland firefighter with federal agencies.
   b. Crosswalk is a new group of trainings designed to provide critical wildland fire training to structural firefighters who already have structural fire training (e.g. Firefighter 1).

Working with Landowners

Many approaches have been tried to increase the number of acres in Iowa that benefit from prescribed burning. One very successful method has been using volunteer fire departments to promote and conduct controlled fires in their area. As your department begins a prescribed fire service, you'll want to discuss how you plan to work with landowners – how to reach them and explain what you're doing, preparing the burn plan with their assistance, presenting cost-share information to them, etc.

The volunteer fire department in Smithland in northwest Iowa has been conducting prescribed burns in their area for several years. Many of the suggestions in this chapter come from the firefighters in Smithland who've learned to use prescribed fire as a successful community service.

Finding landowners who want to burn *(most will find you!)*

Conservation-minded landowners may already have an interest in using fire as one of the management tools on their land, but they might not know how to go about getting the project started. If you've done a good job spreading the word about your prescribed fire service, and if conservation agencies in your area are aware of your services, many landowners will seek you out.

But it will be important that as you're getting started, you take a proactive approach to publicizing your service and partnering with local groups and agencies to help promote it. Several ideas for promoting your prescribed fire service are included in Chapter 5 of this binder.

After you've done a few burns, word-of-mouth will become your best advertisement. Smithland reports that they are asked to do more burns than they can handle and have learned to prioritize their time to do burns that will be most beneficial.

Landowner participation and liability

Expect that one of the first questions to arise in talking with landowners about prescribed fire is "who's responsible in case something goes wrong?" Work with landowners to understand their liability when conducting a burn, as well as what their role will be the day of the burn. They may want to take an active role in the project, or they might prefer to leave it all up to you, the professionals.

The best advice regarding insurance and prescribed fire is to have both the VFD and the landowner call their local insurance agent, and perhaps an attorney, to ask about liability. If the landowner actively participates in the burn, liability issues are different than if the fire department conducts the burn without the landowner.

While it's true that accidents happen, liability concerns are greatly reduced for a fire department whose members are trained and experienced in the use of prescribed fire.

Allowing sufficient time for planning & notifications

You know how long it takes to plan a fire and make all the necessary notifications to neighbors, law enforcement, and others. But landowners aren't going to be as aware of the time needed. It's to your benefit to make it very clear to landowners that planning fire takes time, and there are steps that must be taken to do it right.

Also make them aware that if conditions aren't right at the scheduled time or day of the burn, you won't hesitate to postpone it. Safety comes first.

Cost-share options for landowners

Federal and state cost-share options are often available to landowners to help pay for a prescribed burn. You'll do them a valuable service by making them aware of available financing opportunities, if any.

The best source of information about cost-share opportunities is the local USDA Natural Resources Conservation Service (NRCS). There are criteria that must be met in order to qualify for cost-share funds, but it can be an incentive to landowners to burn. NRCS personnel also may be able to tell you of other potential sources of funding for prescribed fire.

Volunteer fire departments cannot charge for their services, but they may accept donations. In Smithland's case, landowners often donate the cost-share money they receive to the department for their efforts.

Prescribed Fire as a Service . . . the Details and How Smithland VFD Does It

Starting a new service always takes time, and you can expect a few "bugs" along the way. This chapter is designed to help as you prepare to do more burning in your area and develop your own prescribed fire service. It also includes suggestions and tips from the Smithland volunteers on how they operate their prescribed fire service.

Why Smithland uses prescribed fire

During the years they've been doing prescribed burns, the volunteers at Smithland VFD have come up with a list of benefits:

- "We get to light fires."
- We can offer better training opportunities to our new members.
- We make money for the department.
- We have more experience with obtaining grants.
- We can afford better equipment for the department.
- We help landowners.
- We help the land.

Training requirements

It is highly recommended that at least one or two members of your department have National Wildfire Coordinating Group (NWCG) training, or specifically their s130/190 certification. Other members should have at least minimal training in prescribed fire and/or wildland fire. See Chapter 2 of this binder for details about training levels and recommendations.

How Smithland does it: Smithland suggests that at least one or two members have their s130/190 training and others have basic wildland fire training.

Necessary equipment

In addition to standard firefighting equipment, expect to create a collection of other useful tools and equipment specifically for prescribed fires.

How Smithland does it: The Smithland VFD has found the following equipment list helpful. They've acquired much of this through grants and funds raised from their prescribed fire service.

- Garden tiller pulled behind lawn tractor (to create fire breaks)
- Mower
- Weed eater
- Leaf blower
- Chain saw
- ATV
- Forestry nozzles

- Smoke masks
- Headlamps
- Backpacks & hand-held tools (for working in difficult terrain)

Appropriate personnel

One or two members should be designated to do preliminary planning for each prescribed fire, which includes scouting the property with the landowner and preparing a burn plan.

On the day of the fire, be sure you have enough volunteers to adequately secure the perimeters of the burn area. If a call comes to another fire while a prescribed fire is in progress, send a percentage of your volunteers to the call while the remainder contain the prescribed fire. You also may call upon mutual aid from neighboring departments when a burn is planned.

How Smithland does it: Departments should designate volunteers to scout the property with the landowner, write burn plan and complete other prep work. Schedule enough volunteers on the day of the burn to light fires, monitor the perimeters and mop up. Smithland schedules most of their prescribed fires at night in part because more members are available to help in the evening.

Insurance

Before you begin doing prescribed fires as a service, contact your local insurance agent and attorney to discuss liability issues. You and the landowner both want to know who will be responsible in the unlikely occurrence of an escape.

How Smithland does it: Insurance and liability vary greatly depending on how the department is owned and managed. For example, the Smithland VFD is privately owned and operated by a board of trustees. Other departments may be owned by the city or other government entity. Check with your agent to determine your liability and insurance needs.

Mutual aid agreements

Let your neighboring departments know that you're operating a prescribed fire service. They may be interested in assisting when time allows, and they also may be called upon to help with a structural fire when your department is working at a planned burn.

How Smithland does it: Smithland enjoys the cooperation of several neighboring districts when they conduct fires. In the case of an emergency fire call coming in during a prescribed burn, Smithland sends a portion of their members to the call while the others remain to contain the controlled burn. After the call is completed, all members return to the prescribed burn.

Promoting your prescribed fire service

Eventually, word-of-mouth will be your best advertisement. But as you're getting started, let the community and landowners know that you're available to plan and conduct burns. You may have to educate people about what prescribed fire is and

how it is beneficial. Use local newspapers and radio, community and civic groups, newsletters, and any other available means to get the word out. Several suggestions for promoting a fire service can be found in Chapter 5.

How Smithland does it: The volunteers at Smithland report that they don't have to advertise the fact that they do prescribed fire. Word-of-mouth brings them more requests for planned burns than they can accommodate. They prioritize their time and do burns that will have the most overall benefit.

Raising money through your prescribed fire service

Volunteer fire departments may not charge for their services, but they may accept donations. It is not uncommon for a landowner to make a donation to the local VFD for helping them with a burn. If a landowner is receiving federal or state cost-share funds for doing a burn, all or part of these funds may be donated to the department for their work.

How Smithland does it: Smithland has had great success in raising funds through their prescribed fire service. Between 2004 and 2007, the department received more than $13,000 in donations from landowners whose land they burned. Some landowners who were eligible for federal and state cost-share funds for conducting burns donated that money to the VFD.

Grant funding

Don't be intimidated by the idea of applying for grant funds to buy wildland fire equipment or personal safety gear for your department. Grant funding is available, and the application process is not that difficult.

The best place to explore grant opportunities is with the Iowa Department of Natural Resources (IDNR) Forestry Bureau. This website includes a listing of grant opportunities, rules and application forms: *http://www.iowadnr.gov/forestry/fire.html*

At the end of this chapter you'll find a list of IDNR Forestry Bureau Fire Program Opportunities, plus contact information for the department. Also included is a blank grant application form and one completed by the Smithland department. It gives you an idea of what types of information you'll need as you prepare a grant application.

How Smithland does it: Since they've started their prescribed fire service, the Smithland VFD has received numerous grants to upgrade their equipment.

Prepare a burn plan.

Burn plans are all about safety. Keep them simple but complete. One or two members may be designated to work with landowners on burn plans. The written plan is important in the planning and evaluation of a burn. But during the actual fire, members carry only a copy of the aerial map of the burn site. Fence posts with numbers placed prior to the burn help everyone coordinate locations.

Note that if the landowner is receiving NRCS cost-share for the burn, a burn plan must be filed with that office no later than 24 hours prior to the burn.

How Smithland does it: Smithland emphasizes the importance of preparing a burn plan, both for safety and as a way to think through all the details of an upcoming burn. However, on the day of the burn, the only paper firefighters carry with them is an aerial map of the burn site. Smithland gets their maps on-line at Google Earth and uses the Microsoft Paint program to draw boundaries and other important landmarks. A sample of one of Smithland's burn maps is included in Chapter 6.

Make necessary notifications.

Smithland recommends that the local department be responsible for official notifications to the local Comm Center and law enforcement of an upcoming burn. They suggest that landowners inform their neighbors that a burn is planned.

Wait for conditions…and be patient.

Be patient and wait for the right conditions for the burn, specifically wind, temperature and humidity. If conditions aren't right, postpone the burn.

How Smithland does it: Smithland stresses that they track weather conditions not only on the day of the burn, but for several days afterwards to avoid late flare-ups. They also prefer to burn in the evening when winds are more predictable and humidity levels are rising.

Iowa DNR Forestry Bureau

Fire Program Opportunities

The IDNR Forestry Bureau, in cooperation with the USDA Forest Service, State and Private Forestry and other federal, state and local partners, work to provide assistance to the rural volunteer fire departments through a variety of programs and activities in an effort to provide quality fire protection to the state's natural resources.

Programs:

State Fire Assistance (SFA) –Works to protect natural resources from fire on state and private lands through: fire prevention, suppression and fuels management education; training and outreach opportunities.

Wildland Fire Prevention Educational and Program Materials: The IDNR Forestry Bureau, Fire Program is Iowa's source of SMOKEY BEAR materials. SMOKEY BEAR costumes are available for loan. We support a wide range of SMOKEY BEAR promotional items appropriate for Wildfire Prevention Program audiences of all ages. (Examples of items available: coloring pages, activity books, rulers, balloons, stickers, tattoos, posters, pencils, pens, label pins, lesson plans, etc.)

Wildland Fire and Prescribed Fire Training: The IDNR Forestry Bureau – Fire Program staff work to provide wildland fire and prescribed fire training to Natural Resource Managers and Volunteer Fire Department personnel. The following 8 hour courses are available:

IDNR-VFD Wildland Fire Operations;
IDNR-VFD Wildland Fire Engine Operations & Tactics;
IDNR – Prescribed Fire

For additional information, contact Ryan Schlater, Cooperative Fire Specialist at 515-233-1161 or email him at Ryan.Schlater@dnr.iowa.gov.

Wildland-Urban Interface Fire Prevention and Awareness: The IDNR Forestry Bureau, the US Forest Service and a wide range of other federal, state, and local partners are working to encourage homeowners and communities to be proactive in identifying and mitigating situations that may prevent effective fire protection in the rural and wildland-urban interface locations.

Volunteer Fire Assistance (VFA) – Improves the capability of Iowa's rural volunteer fire departments to protect lives, structures, and natural resources in rural and wildland/urban interface areas.

VFA Grants work to offset the costs of wildland fire equipment and personal safety gear preparedness to existing fire departments and to support the organization of new fire departments in unprotected communities (Grants are 50-50 cost-share – maximum allocation per department is $3500/year). Grant applications are available at www.iowadnr.com/forestry/fire/.

GSA Federal Supply Service Access: The General Services Administration (GSA) – Federal Supply Service offers wildfire protection equipment and supplies to federal, state and municipal fire agencies and other organizations who operate under formal agreements with the US Forest Service. GSA's objectives are to:

- Provide opportunities for advanced procurement
- Assist in the standardization of wildfire protection equipment and supplies
- Effect savings through consolidated purchasing
- Provide for the direct distribution of items to field units

The IDNR Forestry Bureau as an affiliate of the US Forest Service, through the initiation of a formal memorandum of agreement can assist fire departments with purchases of fire fighting equipment and gear from the GSA Federal Supply Service. Visit their website at www.GSAAdvantage.gov.

Contact Gail Kantak (515-233-1161; Gail.Kantak@dnr.iowa.gov) for assistance with ordering.

You may also request a "Wildfire Protection Equipment and Supplies" catalog by e-mailing your mailing info to gsa.advantage@gsa.gov, by calling Gail Kantak at 515-233-1161 or by contacting GSA directly at 703-305-7359.

Federal Excess Personal Property (FEPP) – Federal excess property is acquired on behalf of the US Forest Service and loaned to state forestry agencies and their cooperators (volunteer fire departments) for their use in providing wildland and rural community fire protection. To obtain available equipment, Fire Departments must enter into a formal Cooperative Agreement with the IDNR Forestry Bureau and the USFS.

Once fire departments obtain the equipment they are encouraged to paint it and modify it to best fit their needs, in accordance with safety guidelines. Fire departments bear the cost of transportation, conversion, painting, storage and maintenance. The equipment usually requires some conversion, but the cost is much less than purchase of comparable equipment.

Fire Departments are responsible for making conversions in a safe and timely manner; protecting the equipment from theft, vandalism and weather; painting vehicles in fire service colors; maintaining appropriate liability insurance and returning the equipment, less any added equipment, to the IDNR Forestry Bureau when no longer needed.

Requests for potential pieces of equipment can be made via phone, mail, e-mail or fax. Materials screening is dependent upon materials that have been requested and availability. When making **"WISH LIST"** requests please provide as much detail as possible along with contact person and telephone number(s), mailing address, and e-mail address if available.

Realize that equipment distribution is completely dependent upon availability!

Contact

Gail Kantak, Fire Supervisor
IDNR Forestry Bureau
2404 South Duff Ave.
Ames, IA 50010
phone: 515/233-1161
cell: 515/689-0083
fax: 515/233-1131
e-mail: Gail.Kantak@dnr.iowa.gov

FEPP Equipment Assistant – Karl Harris
phone: 515/233-1161
cell: 515-290-9381
e-mail: Karl.Harris@dnr.iowa.gov

Cooperative Fire Specialist – Ryan Schlater
phone: 515/233-1161
cell: 515-979-8739
e-mail: Ryan.Schlater@dnr.iowa.gov

USFS FEDERAL FINANCIAL ASSISTANCE

Provided through the VOLUNTEER FIRE ASSISTANCE (VFA) PROGRAM COOPERATIVE FORESTRY ASSISTANCE ACT OF 1978. Distributed through agreement with the State Forester of the Iowa DNR Forestry Bureau.

Volunteer Fire Assistance (VFA) APPLICATION - 2008

Application Deadline: OCTOBER 15, 2008

1. **Applicant:** **FEDERAL TAX ID #** _____

   Name of City/Township of Agency: _____

   Name of Fire Department: _____

   Mailing Address: _____

   City: _____ State: _____ ZIP: _____

2. **Estimated TOTAL project cost:** _____

3. **Date of Application:** (Month/Day/Year): _____ County: _____

4.	Is the requesting community under 10,000 population? (circle one)	**Yes**	**No**
5.	Is the local 50% cost share available? (circle one)	**Yes**	**No**
6.	How many acres of state owned land are you protecting?	_____acres	
7.	Is the local agency registered with the State Fire Marshal's office?	**Yes**	**No**
8.	Does the local agency provide timely, required incident reports?	**Yes**	**No**
9.	Has the local agency provided Iowa Wildland Fire Reports during 2008?	**Yes**	**No**
10.	**Is the W-9 Federal Tax ID form attached?**	**Yes**	**No**
11.	Please list the communities that this department has Mutual Aid agreements with	_____	

_____

_____

The applicant certifies, as a condition of this grant application, that no one within their organization will engage in the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in conducting any activity with this grant.

The applicant further certifies that to the best of his/her knowledge and belief, the information in this application is true and correct and that he/she will comply with the Cooperative Forestry Assistance Act of 1978 and its administration guidelines if the grant is received.

Head of Local Government:

Name (please type): _____

Title: _____

Signature: _____

Day and Evening Phone: _____

e-mail Address: _____

Fire Chief:

Name (please type): _____

Signature: _____

Day and Evening Phone: _____

e-mail Address: _____

OVER ☞

Volunteer Fire Assistance Program — FY2008

All INVOICES must be dated between October 1, 2007 and June 30, 2009.
All BILLING CLAIMS must be received by July 31, 2009

Eligible Cost-Share Items $3500 maximum VFA cost-share	Quantity	Unit Cost	TOTAL	Official Use
Wildfire Hand and Line Tools				
5 gal. Backpack Bladder Bags	_____	_____		
Fire Rake / Collapsible Fire Rake	_____	_____	$_____	
Fire swatter, Brush hook, Fire broom	_____	_____		
Shovel, McLeod, Pulaski tool	_____	_____		
Leaf Blowers / Mist Blowers	_____	_____		
Fire weather kit / Kestrel Weather Meters	_____	_____		
Fusees / Drip torch	_____	_____		
GPS Units	_____	_____		
Wildland Fire Protective Clothing				
Shirts/Pants/Coveralls/Brush Coats, Nomex	_____	_____	$_____	
Neck Shrouds, Nomex	_____	_____		
Goggles, fire safe	_____	_____		
Gloves, fire safe	_____	_____		
Hardhats, fire safe	_____	_____		
Fire Packs / Radio Harness / Web Gear	_____	_____		
Fire Shelters	_____	_____		
Communications Equipment				
Base Radios	_____	_____	$_____	
Hand-held / Programmable Radios	_____	_____		
Mobile Radios	_____	_____		
Pagers	_____	_____		
Wildland -Water Handling Equipment				
Slide-In Units	_____	_____	$_____	
Foam Units, Foam mixers and/or Foam	_____	_____		
Portable Tanks	_____	_____		
Portable Pumps	_____	_____		
Hoses (¾", 1", 1½")	_____	_____		
Nozzles and Fittings	_____	_____		

(may attach an additional sheet)

Consideration of Special Request: **(No buildings, vehicles, trailers or ATV's)- Dry Hydrants are eligible.**

How does it apply to Wildland Fire?

TOTAL REQUESTED
$_____

Return Completed Application to: Gail Kantak, IDNR Fire Supervisor — phone: 515/233-1161
DNR FORESTRY BUREAU 2404 South Duff Ave. — fax: 515/233-1131
By October 15, 2008 Ames, IA 50010-8093 — Gail.Kantak@dnr.iowa.gov

Promoting Your Prescribed Fire Service

After you've planned and ignited a few prescribed fires in your area, word of mouth will be your best form of advertising. In fact, once the word gets out, you may have to prioritize your time and select only those fires that provide the most benefit and fit into your schedule.

Until that time, however, you need to promote the fact that your department is available to plan and conduct prescribed fire. You will want to educate area residents about what a prescribed fire is, what benefits to expect, and how the local VFD can help.

This chapter gives a few suggestions for promoting your fire service. Also included are reproducible documents to use locally – a press release, radio spots, newsletter article, PowerPoint, signs to post at the actual burn site, and others.

1. Talk to the editor of your local newspaper. Provide him or her with the **sample press release** provided in this chapter. And suggest that your next prescribed fire will provide a great photo opportunity for the paper.

2. Contact the radio station that your area residents listen to. Suggest that they use the 15- or 30-second **radio spots** included here. Or volunteer to be interviewed for a program that highlights community services and organizations.

3. Many agencies and organizations publish **periodic newsletters** for landowners and farmers. Submit the sample newsletter article included in this chapter to local groups such as NRCS, Farm Bureau, SWCD, Pheasants Forever, Wild Turkey Federation, and others that serve your area.

4. Make local **civic and community groups** aware that someone from your department would like to meet with them to give a brief presentation on your prescribed fire service. The PowerPoint included in this chapter can serve as a starting point for your talk. Groups that might be interested include the county board of supervisors, Rotary Club, Kiwanis, Lions Club, school or church organizations, and others.

5. Look into the purchase of bright orange "Prescribed Fire Ahead" **warning signs**. Information on where to find that is included in this chapter. These signs are posted on the perimeter of your fire the day of the burn. Not only will they increase safety, but they advertise the fact that this is a planned, controlled fire.

6. The local NRCS office keeps a **list of businesses and agencies** that can help landowners with prescribed fire. Be sure your department is on that list! The list is given to landowners when they inquire at the NRCS about fire, and to landowners who are required to use prescribed fire as part of their maintenance agreement for government programs.

** For Immediate Release **

Date:
Contact name:
Contact phone or e-mail:

Contact Local Fire Department To Plan & Conduct Prescribed Fires

The term "prescribed fire" may be new to some, but the concept is as old as the hills. Members of the *(insert your department name)* Volunteer Fire Department recently completed training to help area residents plan and conduct prescribed, or controlled burns, on pastures and prairie lands.

A prescribed fire is one that is deliberately planned and set to accomplish a specific goal. In most cases, those goals are related to weed control, controlling unwanted trees or shrubs, and enhancing wildlife habitat.

Before settlers came to the area, Iowa's prairies were regularly burned by fires set by lightning or by Native Americans who understood fire's benefits. But settlers often saw fire as a threat to their attempts to develop homes and businesses.

In recent years, however, many conservation-minded individuals and agencies are again realizing the many benefits that fire brings to the land. That's why the *(insert department name)* has trained to work with landowners to plan and conduct prescribed fires.

Members of the fire department will work directly with landowners to talk about what land they might want burned, their reasons for burning, and the steps involved before a burn can be done. The department will prepare a burn plan and help landowners to notify their neighbors and law enforcement officials when a burn is scheduled. If all conditions are right on the scheduled day, the department will ignite the prescribed fire and stay with it until it is completely extinguished.

The fire department decided to provide this service to our community for several reasons, most importantly to help landowners who want to burn but don't have the necessary equipment or expertise, and to encourage others to see the benefits of controlled fires. The department's prescribed fire service also will help raise funds for equipment purchases and normal operating expenses.

Anyone interested in learning more about the *(insert name here)* department's new prescribed fire service is encouraged to contact Chief *(insert name & contact information)*.

-30-

Sample Radio Scripts for Volunteer Fire Departments Using Prescribed Fire

15-second spots (50-55 words)**:**

Do you need to burn off that weedy back pasture or get rid of unwanted Red Cedar trees, but don't know where to start? Get in touch with the *(insert name)* Volunteer Fire Department. We're trained and ready to help you plan and conduct a controlled, prescribed fire on your land. Call *(insert contact information here)* to get started.

OR

The *(insert name)* Fire Department wants to start a fire! Rather than be called out to put out an escaped fire, our local firefighters are trained and ready to plan and conduct controlled, prescribed fire on land in our area. Prescribed fire not only helps you control unwanted weeds, trees and shrubs, but it's a great way to improve wildlife habitat. To learn more, just call *(insert contact information here)*.

30-second spots (90-95 words)**:**

The *(insert name)* Fire Department wants to start a fire! Rather than be called out to put out an escaped fire, our local firefighters are trained and ready to plan and conduct controlled, prescribed fire on land in our area. Volunteers from our fire department will talk with you about preparing a prescribed fire and conducting it safely. Fire can be used to control unwanted weeds, trees and shrubs. It's also a great way to improve wildlife habitat. To learn more, just call *(insert contact information here)*. He'll be glad to meet with you to talk about how prescribed fire can help you and your land.

Submit this brief article to local agencies for publication in their newsletters – NRCS, Soil & Water Conservation District, Extension, Farm Bureau, Pheasants Forever, Wild Turkey Federation, etc.

Using Prescribed Fire as a Land Management Tool

In the days before settlement, fire periodically swept across the prairie, destroying unwanted vegetation, enhancing wildlife habitat and improving grazing lands. Today, the same benefits can be achieved through the use of prescribed fire.

Prescribed fire is defined as the planned and deliberate application of fire as a management tool for land stewardship. Unlike wildfires, prescribed burns are conducted under strict conditions for maximum safety and environmental benefit. Prescribed fire can be used on pastures and grazing lands, CRP acres, woodlands and any other area that would benefit from burning off unwanted plants and underbrush.

To learn more about scheduling a prescribed fire on your property, contact your local volunteer fire department *(insert phone number)* or the local office of the Natural Resources Conservation Service (NRCS) *(insert phone number).*

-30-

** For Immediate Release **

Date:
Contact name:
Contact phone or e-mail:

Contact Local Fire Department To Plan & Conduct Prescribed Fires

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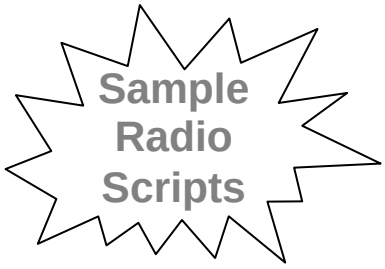
-30-

Sample Radio Scripts for Volunteer Fire Departments Using Prescribed Fire



15-second spots (50-55 words)

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Preparing a Burn Plan

Writing a burn plan is an essential step in the process of planning and conducting prescribed fire. Because of the great variation in the size and complexity of burns, there are no standardized burn plans. Many sample plans are available on-line.

On the following pages, you'll find two examples of burn plans used in Iowa:

1. The first example is a completed burn plan used by the Smithland, IA, VFD for a recent fire. It concludes with an aerial photo of the burn site, which is an essential component of any complete burn plan.
2. The second example is the plan designed by the Iowa Natural Resources Conservation Service (NRCS). It may be used as is, or modified to suit the individual burn you are planning.

Prescribed Burning

Iowa NRCS Natural Resources Conservation Service

October 2006

Prescribed burning is a conservation practice where fire is applied to a predetermined area within a prescribed set of conditions, dates and with appropriate safety precautions to achieve specific purposes.

Prescribed burning can be applied to forest land, native pasture, pasture land, wildlife land, hayland and other land as appropriate.

Prescribed burns serve many purposes. They include:

- controlling undesirable vegetation
- preparing sites for harvesting, planting or seeding
- controlling plant disease
- reducing wildfire hazards
- improving wildlife habitat
- improving plant production quantity and/or quality
- removing debris
- enhancing seed production
- facilitating the distribution of grazing and browsing animals
- restoring and maintaining ecological sites
- managing native plant diversity/composition

What's Ahead?

This fact sheet discusses considerations and background information when planning a prescribed burn. It describes burn terminology, how to prepare for a burn, the appropriate season to burn and where to go to for assistance in completing a prescribed burn. To help you better prepare, a four-page Prescribed Burn Plan form is also included.

Pre-Burn Considerations

Prescribed burning is not meant to be an annual management practice. Burn only to meet a specific management objective. Generally, it is not necessary to burn more than **once every 3-7+ years** (i.e. dry sites –longer interval than mesic sites) . One

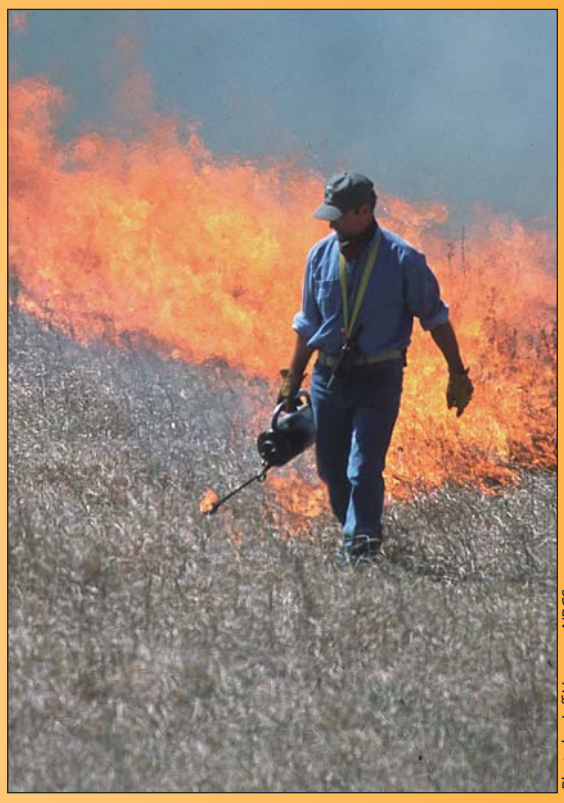


Photo by Jeff Vanuga, NRCS

exception is woody vegetation. It may be necessary to burn two or more consecutive years to control undesirable sprouting woody vegetation. Other considerations:

- Burning should be managed with regard for **wildlife needs**, such as nesting, feeding and cover. Large plots of land should usually not be burned at one time.
- **Existing barriers**, such as lakes, streams, wetlands, roads and constructed firebreaks are used in the burn.
- **Cultural resources,** and **threatened or endangered plants and animals**.
- **Smoke** impacts during and after the burn.
- **Weather conditions** are generally more favorable for burning following the passage of a weather front. Good burning conditions are frequently present 1-3 days following a rain.

Burn Terminology

Backfire: A fire set to spread against the wind to burn more slowly and remove more vegetation and litter. Backfires are often used to create a black line for additional safety when a head fire is used on the same burn area.

Fire Boss: A person who supervises all phases of the application of a prescribed burn.

Firebreak*: A space clear of flammable materials to stop fire from moving out of the burn area. It also serves as a line from which to work and facilitate the movement of personnel and equipment.

Flankfire: A fire burning across the prevailing wind direction.

Headfire: A fire set to spread with the wind. Headfires are the fastest and hardest to control. They are used to manage taller shrubs and trees, leaving the most litter unburned.

Mop Up: The process of checking the entire perimeter of the burn area to ensure all fires or smoldering materials are out. This could include cow chips, logs, dead trees and small areas still burning.

Ring Fire: A common technique that starts with a back fire, then a flank fire is lit after a safe black line is established. This is followed by the headfire, creating a fire around the entire perimeter of the burn area.

Strip Headfire: A technique that requires setting a line or series of lines upward from a firebreak so no single line can develop enough heat or convection to escape or cross the firebreak.

High Volatile Fuels: Fuels with large amounts of compounds, such as fats, waxes or oils, that are highly flammable and can produce firebrands or wind-borne flaming debris. One example is the Eastern Red Cedar. High volatile fuels can be burned with proper precautions.

Low Volatile Fuels: Fuels with small amounts of highly flammable compounds, including most grasses and hardwood trees. These fuels can burn safely within a wider range of environmental conditions than high volatile fuels.

*Types of Firebreaks

Natural firebreaks are the most secure of all firebreaks, followed by permanent roads, bare soils and mowed firebreaks. All firebreaks should be checked by the burn boss prior to each burn. Firebreaks must be at least 15 feet in width or 4 times the fuel height, whichever is most.

- **Natural Firebreaks** - primarily lakes, rivers and larger streams; usually interconnected with other types of firebreaks.
- **Permanent Roads** - roads create a fuel free width of 15 to 20 feet. Permanent road firebreaks require no special burn day treatments, and allow rapid, safe ignition with routine ignition and holding forces.
- **Bare Soil Firebreaks** - firebreaks are tilled to bury almost all vegetation within a week of the burn date. Bare soil firebreaks should be reseeded quickly with legume species and some grasses to prevent excessive erosion risk. Bare soil firebreaks are not recommended on steep, erosive slopes or on prairie remnants or sites established to native prairie vegetation.
- **Mow-wetlined Firebreaks** - prepared by mowing as close to the ground as possible with rotary or sickle mowers beginning one year in advance to encourage enough green growth and reduce litter buildup to stop the fire.

Recommendations for Prescribed Burning

Purpose: To improve quality of wildlife habitat

Vegetative Type	*Season to Burn*	*Frequency of Burn*
Warm Season Native Grass	April 1-May 15 (when natives have 1/2 to 3 inches new growth, less than 1 inch preferred)	3-5 years for Mesic* sites > 5 years for Xeric** sites
Forbs	September 1-February 1	3-5 years
Cool Season Grass	March 1-April 15 (when cool season grasses have 2 inches or less new growth)	3-5 years
Native Prairie Remnants (depends on management objectives and commnity needs)	Depends on composition and objective	Depends on composition and objective

Note: Burn only 1/3 to 1/4 of site per year to provide more diversity, structure and duff.

* Mesic is characterized by a moderately moist hydrology.

** Xeric is characterized by a dry to very dry hydrology.

Purpose: To improve forage quality for grazing, haying and biomass production

Vegetative Type	*Season to Burn*	*Frequency of Burn*
Warm Season Native Grass	April 1-May 15 (when natives have 1/2 to 3 inches new growth, less than 1 inch preferred)	3-5 years
Cool Season Grass	April 1-May 15 (<2 inches of new growth; less than 1 inch preferred)	2-4 years
Mixed Warm and Cool Season Grasses	Use above date to promote growth of declining group	2-5 years

Purpose: To control undesirable vegetation

Vegetative Type	*Season to Burn*	*Frequency of Burn*
Cedar Trees	September 1-May 20	3-5 years (effective <5 feet tall)
Deciduous Trees and Shrubs Buck Bush Osage Orange Autumn Olive, Dogwood Sumac, Locust Others …	April 1-May 15 (when buds start to swell)	2 consecutive years, then every 3-5 years as needed (combine with mechanical/chemical controls)
Introduced Grasses	April 20-May 20 (when introduced grasses have 5-10 inches new growth)	3-5 years (may combine with mechanical controls)
Reduce Noxious Weeds (Perennials)	Before Flowering	As Needed
Other Undesirable Plants	Varied–for specific species; seek expert advice	Varied–for specific species; seek expert advice

To stimulate growth of grass species, the best time to burn is just as the desired species starts to break dormancy in the spring. A good rule of thumb is to burn when the desired species–warm or cool season grass–has one inch of new growth.

To stimulate forb components of prairie plantings, fall burns should be used. This would normally be from September to late winter.

Photo by Jeff Vanuga, NRCS

Pre-Burn Timetable

12 Months Prior to Burn

- Develop Prescribed Burn Plan
- Mow firebreaks bi-monthly during growing season before burn
- Remove dead trees and brush piles that are within 20 feet of firebreaks
- Scout for any safety concerns to burn crew, such as poison ivy or old fence wire

3 Months Prior to Burn

- Notify adjacent landowners/neighbors of intent to conduct a prescribed burn. Ask if residents have medical conditions that would worsen if there is smoke
- Arrange for crew and equipment needed

1 Month Prior to Burn

- Obtain necessary permits
- Clear vegetation around access points for vehicle entry to burn area

1-2 Days Prior to Burn

- Check weather forecast for day of burn
- Notify adjacent landowners/neighbors of intent to conduct prescribed burn
- Drive around site to check firebreaks and access points
- Test to insure that all burn equipment is functioning properly

Day of Burn

- Check weather forecast
- Review pre-burn checklist prior to ignition
- Ensure remnant livestock, equipment, pets are removed if needed
- Notify fire department/sheriff, etc …
- Be sure burn crew understands the implementation plan

Prescribed Burn Plan

Burn plans should be planned and implemented by trained personnel. Information about burn plans is available at your local NRCS office. For assistance, you may also contact:

- your local fire department
- Pheasants Forever
- The Nature Conservancy
- Technical Service Provider (TSP)
- Department of Natural Resources (DNR)
- local county conservation board

The remainder of this brochure is a sample burn plan to be used as background information. The sample plan will allow you to be better prepared for a burn, and it will answer many in-depth questions you may still have about a prescribed burn.

Helpful Websites

More information about Prescribed Burn Plans is available on the following websites:

- www.netexpress.net/~okeefe/ (Iowa Burn Weather Forecast)
- www.fire.org/
- www.oznet.ksu.edu/library/crpsl2/
- prrcd.org/inl/prescribed_fire.htm
- www.tncfire.org
- www.iowadnr.com
- www.ecity.net/iacb/

NRCS Natural Resources Conservation Service

Helping People Help the Land

PRESCRIBED BURN PLAN

DATE: _____ SITE/TRACT: _____

LANDOWNER/OPERATOR: _____

ADDRESS: _____

ACRES TO BURN: _____

TOWNSHIP: _____ RANGE: _____ SECTION: _____

Burn Class: 1 2 3 4

PLANNED DATE FOR BURN: _____ EXPIRATION DATE: _____

Notification of units of government:

Local Fire Dept.(Name) _____ (phone) _____

Sheriff/County Dispatch _____ (phone) _____

Notification of Neighbors (a month in advance plus the day before the burn)

Name: _____ (phone) _____

Name: _____ (phone) _____

Name: _____ (phone) _____

Name: _____ (phone) _____

A. DESCRIPTION OF BURN AREA: Program/Land use: _____

A1) Woody Plant Species (list species, size, and plants/acres):

A2) Herbaceous Plant Species (list species, height and condition):

A3) Fuel Load :

Fine fuel (grass/forbs) _____ Tons/Acre % Volatile Fuels _____

Predominant fuel ht. _____ Feet

A4) Soil Types:

	Slope %:	Aspect:	% Area

B. OBJECTIVE AND TIMING OF BURN: (Rank if more than one)

____	Reduce deciduous trees/shrubs (April 1–May 15)	____	Reduce cedar trees (Sept 1–May 20)
____	Increase warm-season grasses (April 1–May 15)	____	Reduce cool season grass (April 20–May 20)
____	Reduce noxious perennial weeds (before flowering)	____	Improve wildlife habitat (Only burn 1/3 of site)
____	Distribute grazing (when warm season grasses are 1-3")	____	Increase forbs/diversity (Sept 1–February 1)
		____	Remove litter

Give details below if needed:

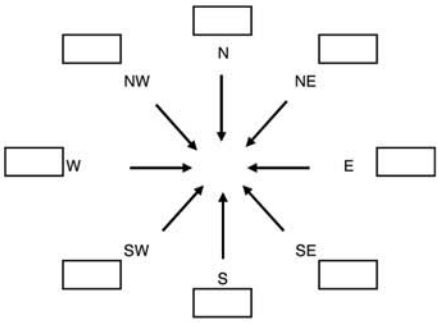
C. SPECIFIED CONDITIONS FOR DAY OF BURN: (NOTE - All factors have to be within prescription!)

(burn forecast is available at: http://www.netexpress.net/~okeefe/)

Preferred:	Acceptable Conditions:
____ F	1. Air Temperature 40 - 70 degrees F.
____ %	2. Relative Humidity 30% - 60%.
	3. Soil Damp to Touch at Time of Burn.
____ mph	4. Wind Speed 5 - 15 mph
____	5. Preferred Wind Direction steady from:

6. (Acceptable Wind Direction-must enter in box; may also indicate on diagram at right with an X)

_____



D. PREPARATION OF AREA FOR BURNING (see attached burn plan map):

*Firebreaks must be at least 15 feet in width or 4 times the fuel height, whichever is greater.

*Plowed, disked and burned firebreaks, being essentially devoid of fuel, provide least danger of fire escape.

*Frequently mowed breaks (at least bi-monthly entire growing season before burn) provide good access and facilitate control

*Mowed and cool-season grass firebreaks have fuel available that can provide an avenue for fire escape. Smoke from green growth reduces visibility, inhibiting control line monitoring.

*Regardless of firebreak used, thatch/litter accumulation of any kind can allow fire to creep out of burn unit, rake clean to reduce risk.

*Heavy fuels loads: High Mowed fire intensity reduction lines (12" stubble), will be installed if fine fuel exceeds 1.5 ton/acre. Fuel reduction line width will be at least 10 feet@1.5 T/A and 20 feet @ >3T/A.

1. Firebreak Construction: (type of fireline, width in feet. Also indicate on burn plan map.)

2. Existing firebreaks: (streams, roads, tilled fields, etc. Show on burn plan map)

3. Items to address: (protection of powerline poles, signs, cable/phone junction boxes, dead tree removal, etc.)

4. Potential Hazardous Areas within Burn Area: (power lines, snags, structures, obstacles to vehicle access, plastic drain tile, underground utilities, etc.)

E. ADJACENT AREAS: (Outside of Burn Area)

1. Special Precaution Areas (also drawn on attached burn plan map):

* leaf litter, dry grass, roads, structures, smoke dispersion, etc.

Precautions needed: (Include backup or secondary firebreaks if necessary)

2. Smoke Management Plan

* Include smoke sensitive areas, i.e. avoid sending smoke into residential areas, neighbors, airports, hospitals, busy roadways, powerlines, etc.

* Note wind directions which would be unacceptable for burning for each specific hazard

F. TOOLS/EQUIPMENT NEEDED: (include type and number of rakes, swatters, drip torches, backpack pump, other)

F1. Equipment checklist

____ 1. Pumper truck
____ 2. Drip torch(s)
____ 3. Fire weather kit
____ 4. Tractor/Maintainer
____ 5. Two-way Radios
____ 6. Gas (40%)
Diesel (60%)
____ 7. Chain Saw
____ 8. Flappers
____ 9. Drinking Water
____ 10. Livestock sprayers
____ 11. Sprayer Fuel
____ 12. Rake(s)
____ 13. Flagmen
____ 14. Flags for flagmen
____ 15. NOAA radio
____ 16. Matches or lighter
____ 17. Backpack Sprayers
____ 18. All cotton clothing/NOMEX®
____ 19. Shovel(s), pliers
____ 20. Cellular phone

F2. Preburn protection needs

____ 1. Remnant Livestock
____ 2. Feeders
____ 3. Pens and Barns
____ 4. Utility Poles
____ 5. Oil/gas/pipelines
____ 6. Fences
____ 7. Hunting Facilities
____ 8. Headquarters
____ 9. Desirable wooded areas
____ 10. Windmills
____ 11. Water Storage Facilities
____ 12. Special habitat areas
____ 13. Haystacks
____ 14. Equipment
____ 15. Liability Insurance
____ 16. Critically eroding areas
____ 16. Tile Intakes
____ 17. Livestock working facl.
____ 18. Vehicles
____ 19. Inspection of fireguards
____ 20. _____

Additional equipment or considerations

G. PERSONNEL REQUIRED FOR BURN: (Include number of people and their role. It's recommended that burning be done by certified personnel.)

Position	Name
Fire Boss	
Ignitor	
Ignitor	
Pumper/Sprayer	
Pumper/Sprayer	
Pumper/Sprayer	
Suppression Crew	
Suppression Crew	
Suppression Crew	
Weather/ Communications	

H. SPECIAL CONSIDERATIONS:

Precautions to prevent fire escape:

I. SUPPRESSION PLAN IF FIRE ESCAPES: (NOTE any contigency plans, i.e. secondary firebreaks; creeks, roads, disked breaks, authorities to contact. Provide burn map to fire dept. noting field access, hazards, etc.)

J. PATROL AND MOP-UP PLAN:

* Patrol entire perimeter of burned area, put out all flames and smoke within 20 feet of burn line
* Pay special attention to smoldering leaf/litter, dung pats, course woody debris, corn cobs or other coarse fuels.

K. IGNITION PLAN: (see attached burn plan map)

1) Ignition Time (avoid variable winds, usually occur late morning):

2) Method of Firing/Firing Sequence (describe below): (backing fire, flank fire, head fire, strip head, etc. also indicate on map)

PRESCRIBED BURN PLAN MAP

(attach aerial photos, topographic map or line-drawing if scale is appropriate)

Suggested legends for indicating pertinent information on aerial photo or topo map.

Approximate Scale:		Legend	
	inches per	mile:	
or:	inches per	feet:	

B-B-B-B-B-B-B-	Burned Firebreak	IP	Ignition point
P-D-P-D-P-D-P	Tilled/Mowed Firebreak	W	Water Source
CS-CS-CS-CS	Cool Season Grass Firebreak	A,B, etc	Firing Crews
HM-HM-HM-	High Mowed fuel intensity reduction line	1,2,etc	Firing Sequence
		(A1) >>>	Firing Direction
		WIND --->	Wind Direction

Other legend information

Plan Prepared by (name and organization):

Date:

Documentation of Qualification

Signature:

Date:

Plan Reviewed by:

Signature:

Date:

Plan Approved by:

Signature:

Date:

IF BURN PLAN EXPIRED BEFORE IMPLEMENTATION, PLAN HAS BEEN REVIEWED AND RECERTIFIED BY:

Signature:

Date:

Landowner acknowledgement and acceptance of burn plan preparation and liability

I, _____ have requested the preparation of this prescribed burn plan; my signature establishes my acceptance of full liability resulting from the implementation of this plan.

PRESCRIBED BURN CHECKLIST

(To be reviewed and filled out DAY OF BURN)

NOTE: Parties igniting a prescribed burn may be liable for damages resulting from the fire and control cost, should fire escape the designated area.

A. Preburn Checklist: (Day of Burn)

1. Weather forecast favorable:http://www.netexpress.net/~okeefe/) YES _____ NO _____
2. Necessary firebreaks constructed YES _____ NO _____
3. Potential hazards accounted for YES _____ NO _____
4. Special precaution areas noted YES _____ NO _____
5. Backup/secondary firebreak locations noted YES _____ NO _____
6. Safety equipment adequate YES _____ NO _____
7. Tools/equipment on-site YES _____ NO _____
8. Personnel needed available YES _____ NO _____
9. Special considerations reviewed with crew YES _____ NO _____

IF ANY OF THE ABOVE ARE ANSWERED "NO," DO NOT BURN

10. Actual weather at burn:

Acceptable Conditions:		Preferred:	Actual:	Time Recorded:
1. Air Temperature 40 - 70 degrees F.	F	0		
2. Relative Humidity 30% - 60%.	%RH	0		
3. Soil Damp to Touch at Time of Burn.				
4. Wind Speed 5 - 15 mph	mph	0		
5. Acceptable Wind Direction steady from:				YES _____ NO _____
6. Preferred Wind Direction steady from:		0		YES _____ NO _____
7. Actual wind direction:				

11. Fronts or changes expected? YES _____ NO _____
12. Notification of units of government made:

Local Fire Dept.(Name) _____ (phone) _____
Sheriff/County Dispatch _____ (phone) _____

13. Notification of Neighbors

Name: _____ (phone) _____
Name: _____ (phone) _____
Name: _____ (phone) _____
Name: _____ (phone) _____

14. Necessary permits obtained (if any): YES _____ NO _____

Additional Comments: _____

Checklist Completed by: _____ DATE: _____

B. Post Burn Evaluation (Day of Burn):

1. Burning method used:
2. Start of burn — Beginning Time: _____ a.m. (_____) p.m.(_____)
   Mop Up Completed — Ending Time: _____ a.m. (_____) p.m.(_____)
3. Observed change in weather conditions during the burn: _____
4. Fire behavior: (check one)

a. Spotting	none (_____)	few(_____)	many(_____)
b. Difficult to control		yes(_____)	no(_____)
c. Convection column		yes(_____)	no(_____)
d. Fire whirls		yes(_____)	no(_____)

5. Objective of burn met: yes(_____) no(_____)
6. Post-burn management plan (additional treatments needed): _____
7. Future burn needed: Yes (_____) No (_____)
8. Other comments: _____

Evaluation Completed by:

Signature: _____ Date: _____

SMITHLAND FIRE DEPARTMENT

PRESCRIBED BURN PLAN

SAMPLE
BURN PLAN

LANDOWNER/OPERATOR –Allen VanVoorst DATE 3/4/06

TRACT NO. ACRES TO BURN 40

PLANNED DATE FOR BURN 4/02/06 Township Name Grant

LOCATION: TOWNSHIP Grant RANGE 44W-85N SECTION 9 FIELD NO.

A. DESCRIPTION OF BURN AREA: LAND USE - Conservation

1. PRESENT PLANT COVER

WOODY PLANTS:

SPECIES	SIZE	PLANTS/ACRE
Eastern Red Cedar	Variable	Variable
Grey Dogwood	Variable	Variable
Elm		
Smooth Sumac	Variable	Variable

HERBACEOUS PLANTS:

SPECIES	SIZE	PLANTS/ACRE
Typical Loess Hills Prairie	1-3 ft. vegetation (10 years growth W/O grazing)	

2. Slope -1/2 variable Aspect - North /South Soil Type - Loess

B. OBJECTIVE AND TIME OF BURN:

Control Woody Plants	X (Full Leaf)	Improve Wildlife Habitat	X (1-3"WSG)
Stimulate WS Grass	X (1-3"WSG)	Remove Litter	X (1-3"WSG)
Reduce CS Grass	(1-3"WSG)	Stimulate Forbs	X (Before Forbs Grow)
Distribute Grazing	X (1-3"WSG)	Reduce Wildfire Hazard	X (1-3"WSG)

C. SPECIFIED CONDITIONS FOR DAY OF BURN:

1. Air Temperature 40 to 70 °F
2. Relative Humidity 25 to 60 %
3. Wind - Direction E/NE/SE Speed 5 to 15 mph.
4. Soil Damp to touch at Time of Burn
5. Ignition Plan (see burn Map).

A. Start Time 8:00 AM (Avoid mid-day burns)

B. Method(s) of Fire: Drip Torch

Parties initiating prescribed burns may be liable for damages resulting from the fire and cost of suppression by others, should the fire escape from the designated area.

D. PREPARATION OF AREA FOR BURNING

1. Firebreak Construction: (Show on Burn Plan Map)

	Width	Length	Date		Width	Length	Date
Plowed				Cool Season Grass			
Disked	20 ft.	2800 ft.	3/4/06	Burned			
Mowed	15 ft.	800 ft.	3/4/06				

2. Existing Firebreaks: (Show on Burn Plan Map)

   Describe:
   Dirt Road 450 ft . used as west fire break

3. Snag Felling Necessary: (Show on Burn Plan Map) done

4. Potential Hazardous Areas: (Show on Map) (Show Protection Plan) #17 A fence dividing properties

E. ADJACENT AREAS:

Special Precaution Areas: (Show on Map)
Occupied Residence south of burn and another to the southwest.

F. TOOLS/EQUIPMENT NEEDED: .
2 tankers, 3 pickup grass rigs, 1
ATV, 10 backpack pumpers, 1 leaf blower, 2 fire rakes, 1 chain saw, 1 weed eater, 2 drip torches,
3 hand-held radios, 10 gallons diesel fuel, 5 gallons gasoline, chain saw fuel

G. MANPOWER NEEDS:
1 fire boss, 2- 4 man crews, 2 tanker tenders

H. SPECIAL PRECAUTIONS TO PREVENT FIRE ESCAPE: Check fire behavior (test fire) and weather prior to initiating the burn.

I. SUPRESSION PLAN IF FIRE ESCAPES: Cease ignition! One four man crew stays with control burn, and the other concentrates on the escape. Call the local fire department if necessary

J. PATROL AND MOP UP PLAN: Wait 60 minutes on site after burning ceases, all people mop up any burning emberswithin20 ft. of fire breaks. A member of a burn crew or the land manager may have to remain on site to ensure embers are contained in black area/burn area.

K. PRE-BURN CHECKLIST:

1. Weather Forecast Favorable Yes
   Check fire forecast on the internet at: http://www.crh.noaa.gov/fsd/firewx.htm

2. Necessary Firebreaks Constructed Yes

3. Tools/Equipment/Manpower Ready Yes

4. Notifications:
   All people who live within a mile This was done by the operator

   Adjacent Landowners - yes

   Local Fire Department (Phone ( ) - 911)

   Fire Department did the burn

   Sheriff (Phone (___) ____-____) Woodbury Dispatch__

   Others (Phone)

5. Necessary Permits Obtained - None needed

Prepared by: Don Haahr Date: 3/4/06

Checked by: Date:

I, Allen VanVoorst, have request the preparation of this prescribed burn plan and my signature and date indicated by acceptance of full responsibility for any liability occurring from the implementation of this plan.

____Allen VanVoorst_____
Landowner/Operator

_____
Date Mgmt. Plan Delivered

_____
By:

_____
Agency

PRESCRIBED BURN PLAN MAP

Attached Separately

LEGEND

———————	Burned Firebreak	Ŵ	Water Source
┼┼┼┼┼┼┼	Plowed Disked Firebreak	(1)	Firing Sequence
__/__/___/__/__	Cool Season Grass Firebreak	(2)→→→→	Firing Direction
OTHER		**W**	Wind Direction

(Use Standard Map Legends for Other Features)

Approximate Scale: 660 8 inches per 1 mile

Prepared by: Date:

POST BURN EVALUATION

LANDOWNER – Allen VanVoorst DATE OF BURN -4-2-06

ACRES BURNED 40 LOCATION: T Grant N, R 44W-85N, SECTION 9 FIELD NO.

EVALUATION – DAY OF BURN

1. WEATHER FORCAST:

2. ACTUAL WEATHER DURING BURN:

3. BURNING METHOD: Drip Torches- Circle Pattern – Back burn

4. FIRE BEHAVIOR: (Circle One)
   a. Spotting (none/few/many)- c. Convention Column (yes/no -
   b. Difficulty in Control (yes/no)-. d. Fire Whirls (yes/no)-
   Comments – All cedar trees should have been removed within 30 ft. of the control lines.

5. OBJECTIVE ACCOMPLISHMENT: (Explain).

6. POST BURN MANAGEMENT PLAN: LAND USE
   Planned Treatment: grazing / cedar control
   Estimated Need for Future Burn: UNK

7. REMARKS:

   EVALUATION BY:

   DATE:

FOLLOW-UP EVALUATION
(60-90 days after burn)

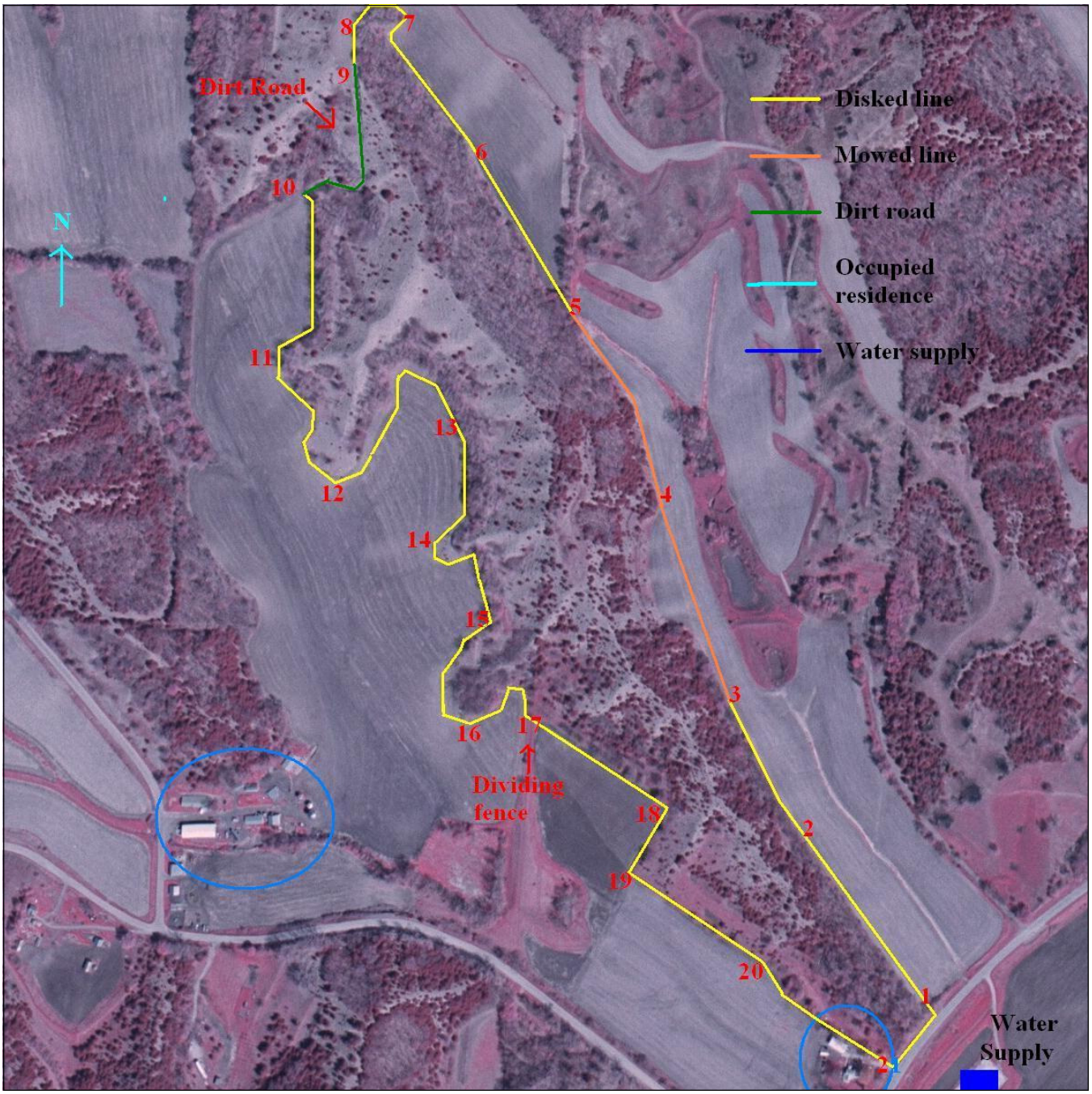
1. OBJECTIVE ACCOMPLISHMENT:

2. POST BURN MANAGEMENT PLAN: LAND USE
   Planned Treatment:
   Estimated Need for Future Burn:

3. REMARKS:

   EVALUATION BY:

   DATE:



Sample Burn Map

(Allen VanVoorst prescribed burn)