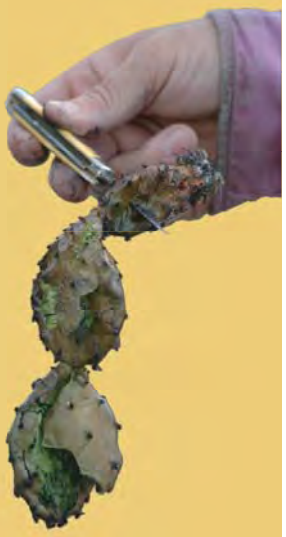
PRESCRIBED BURNING FOR LANDOWNERS

Success is in Planning

Prescribed burning is a very effective tool for improving rangeland productivity and overall health of the landscape.



Planning for a prescribed burn should begin at least a year before the first drip torch is lit and will include features that extend years beyond the fire. A sound grazing management program to produce adequate amounts of grass (fine fuel) is vital to having an effective prescribed burn. Grazing management following the burn is equally important to obtain desired results.

Before You Burn

Planning assistance for a prescribed burn can be obtained from the following sources:

- Natural Resources Conservation Service
- Texas Parks and Wildlife Department
- Texas AgriLife Extension
- Nature Conservancy
- Prescribed burn associations
- Neighbors with prescribed burn experience
- Certified prescribed burn managers

Prescribed burn plans should be developed using the following elements:

Burn Objectives

Stating clearly defined objectives is the first step in the development of a prescribed burn plan. Prescribed burn objectives could include, but are not limited to, the following:

- Control undesirable vegetation
- Improve forage quality
- Increase plant diversity
- Improve wildlife habitat
- Stimulate ecological succession

Grazing Management

The accumulation of adequate fuel loads is the key to having a successful prescribed burn. The land manager has control over the amount of forage that will be available for burning. Things to list in this section of the plan are:

- Pasture management pre-and post-prescribed burn.
- Quality management plan to reflect proper deferments of burned area and follow-up practices such as chemical and or land treatment of target species.
- Herd management to reflect proper stocking of land following a prescribed burn.

Map the Burn and Sensitive Areas

Define the location of the burn area, including a description and map. The map can simply be a line drawing but must contain sufficient information to clarify locations exactly. Be sure to include a north arrow. It is good to include gates, water sources, the location of bladed fireguards, and any roads that may possibly be affected by smoke.

On the locator map, give a brief description of any smoke sensitive areas and why they are sensitive to smoke. Texas Commission on Environmental Quality (TCEQ) outdoor burning regulations outline sensitive receptors, which include houses, barns with animals inside, and greenhouses with plants. Regulations prohibit burning within 300 feet downwind of a sensitive receptor that is on an adjacent property unless prior approval is obtained from the person(s) responsible for the property.

Determine Fine Fuel Load

Discuss these items with the person managing the burn, referred to as the “fire boss:”

- Pounds of fine fuel (i.e. grasses) per acre that will be needed to produce a fire of sufficient intensity to accomplish the objectives for burning.
- How continuous does the grass cover need to be? Rangeland with a contiguous grass cover will produce better results.
- What percent fine fuel moisture is needed? Grasses, such as buffalograss and sideoats grama, with fuel moisture of 12 percent will hardly burn. The same grasses with fuel moisture of 5 percent will burn very hot. A rule of thumb to use in determining fuel moisture is to divide on-site relative humidity by 5. The result will give you an estimate of fine fuel moisture.

Weather Conditions

Temperature and humidity are almost as important to the fire as fuel load. Temperature and humidity influence the moisture content of dry grass. Wind speed and direction are also very critical when burning.

As you develop your burn plan, you should describe the desired conditions for:

- Relative humidity
- Wind speed and direction
- Air temperature

During the burn, monitor weather conditions at least every 30 minutes. It is a good idea to attach a printed forecast for the day of the burn to the plan. Remember, weather conditions up to two days following the burn are just as important as the day of the burn.

Fireguards and Blacklines

Be able to answer the following questions:

- How, when and what type of fireguards will be installed?
- Will double fireguards be used on the downwind sides of the burn area?
- How will blacklines be installed?
- What type of sprayer support will be used when installing the backfires?
- Will brush piles be burned out prior to the installation of the blacklines?
- Show location of fireguards on prescribed burn map.

Firing Sequence and Method

In this section list how the actual fire will be carried out. Where will torches begin firing from and where will they end? Instead of using terms such as southeast to southwest, label points as A, B, C, etc. Some people have trouble with directions, but can easily understand the point system of naming. This is very important when communicating by radios.

Always begin with a small test fire in a safe area to study fire behavior. It is the responsibility of the fire boss to determine whether or not to proceed with the burn.

Equipment

Necessary equipment for all prescribed burns:

- 1 to 2 slide-in sprayers
- 2 to 4 four-wheelers with sprayers
- 3 to 5 drip torches
- Fire weather kit or self-contained fire weather monitoring equipment
- 4 two-way radios at a minimum (it is better if each person has a radio)
- Cell phone
- Drinking water
- Rakes, hoes, swatters, wire cutters
- All personnel wearing natural fiber clothing or Nomex
- Plenty of fuel for torches (60% diesel, 40% gas mixture) and slide-in sprayers
- Make sure all equipment works properly before the first torch is lit.
- Leather boots with thick soles are best

Personnel

This section is very important. Adequate staffing with experienced people is how safety is built into a prescribed burn. Inexperienced crew members should not be left to operate independently. They should be paired with an experienced person so they can learn more about the safe and effective application of prescribed burning. Crew assignments should be listed the day of the prescribed burn. Job responsibilities should be reviewed with all crew members before the burn begins. Do not be pressured into burning if there are not enough experienced crew members present. The fire boss needs to be very familiar with the crew and their limitations. He/she is the one who assigns duties, and is responsible for their actions.

Safety Considerations

Consider these questions relating to safety:

- Are crew members physically fit to do the job?
- Do all crew members know their duties and responsibilities pre and post burn as it relates to fire weather?
- How will the crew handle an escaped fire or an unexpected wind shift?
- What is the procedure that will be used if smoke crosses a public road? TCEQ burning regulations state that the person initiating the burn must post flag-persons on affected roads.
- What conditions will cause the fire boss to call the fire department?
- What procedures should be followed if county is under burn ban?

Notify Neighbors and Authorities

Develop a list of neighbors that need to be contacted prior to the burn. It is very important to contact area fire departments and sheriff offices. Remember the smoke plume can be seen from long distances. As rural areas gain in population, there is more chance that a neighbor will call to report a wildfire. It is also a good idea to contact utility companies (above and below ground) before the prescribed burn. It is advisable to call 1-800-DIGTESS to determine if you have underground utilities, especially before plowed firebreaks are installed.

Post-Burn Evaluation

Each prescribed burn is a learning experience. Evaluate the prescribed burn to see if it met the objectives. Note what went right and wrong. Use what is learned from each prescribed burn to improve the plan in the future. This is also a good time to determine the rate of chemical that is needed for controlling prickly pear or other plants not controlled by fire.

Post-Burn Mop Up

- Rangeland that has never been burned will have areas of accumulated woody fuels that can smolder for many days. List what will be done to mop-up and monitor the burned area. Responsibility to complete each item should be assigned to a specific individual.
- Maintain observation of the burn area until the fire is extinguished.
- Maintain contact with the weather station until fire is out.
- Assign someone to ensure safety should there be a dangerous change in the weather forecast. High winds and low relative humidity can move embers from a fire that occurred a week ago and turn them into a wildfire.
- Check the perimeter for potential sources for firebrands, which could spark another fire. This could be trees, posts, cow chips, logs, etc.
- As a general rule, the burn area should be checked by mid-morning each day until there is no smoke coming from the area. This level of monitoring may be needed for a week or more.

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