

Range Management Prescribed Burning

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What

Prescribed burning is a technique used to improve grasslands. It suppresses certain undesirable plants, and improves the environment for the better plants.

A prescribed burn uses skillfully applies fire to remove fuels of a forest, prairie or pasture. It is done for a specific purpose, under predetermined weather conditions.

Why

Chemical and mechanical brush control is expensive. Under certain conditions, prescribed burning is a more economical, viable and effective brush control alternative. Prescribed burning is also an effective method to improve distribution of livestock. It removes old growth from plants and , reduces the animals' preference for certain plants through proper timing and intensity. Prescribed burning also can stimulate growth by reducing competition and removing excessive plant residue. When done properly, control burning produces a "cool" fire that suppresses many undesirable plants through proper timing and intensity of the burn.

When

Fire intensity and intervals are important. Controlled burning is done at the end of the dormant season or just as desirable grasses are beginning spring growth. Native warm-season grasses should be burned when their spring growth is one-to three inches tall.

Fine fuel is dormant grasses, forbs and other plants that will carry the fire. Before burning, most grassland needs to be deferred during the previous growing season long enough to produce sufficient, evenly distributed fine fuel.

How

Prescribed burning is done with a combination of head fires, firebreaks, fireguards, flank fires and back fires and controlled with a well planned system of firebreaks. A **head fire** burns with the wind, **flank fires** burn crosswind, and **back fires** burn into the wind.

A **firebreak** is a strip of land where the vegetation has been removed by scraping, close mowing, burning, disking or treating with a fire retardant. Firebreak width depends on the height and amount of the adjacent fuel. Firebreaks for use with backfires should be at least twice as wide as the vegetation.

A pre-burned firebreak on the downwind sided of an area to be burned should be at least 100 feet wide. It can be created by burning between two fireguards, or by using backfires and flank fires during the prescribed burn.

Natural barriers, such as streams, roads, etc., should be used whenever possible, and should be considered for back up of secondary fire breaks.

Burning should be prescribed for each situation based on objectives and need. Generally, this is when wind speeds are 4-16 miles per hour, the relative humidity is 25-70 percent. When humidity is low burn only at the lower wind speeds. If humidity is high it may be necessary to have high wind speed to conduct the burn.

Safety

Prescribed burns should be directed away from highways, populated areas, homes or other places where smoke would be a hazard. Burn toward a plowed field or your own land instead of toward a neighbor's property.

Concerns

Topography should be considered when designing a burn because fuel will burn rapidly uphill. A slope can turn backfires into head fires, and can turn head fires into flank fires or backfires.

When using prescribed burning on land with a lot of cedar or other plants high in oil, dry brush piles and large green trees near fireguards first should be removed. Other wise, they can explode, producing firebrands that can travel several hundred feet and ignite fuel out side of the planned site.

When prescribed burning is not done properly, fire can escape to adjoining property. If smoke crosses highways, it can cause traffic accidents. If weather conditions are not as prescribed in the burning plan, the practice should not be carried out.

In a typical prescribed burn, firebreaks are created before the fire is started. The backfire is allowed to burn against the wind creating a burned firebreak sufficient to control the flank and head fire.

Fire Plan

A fire plan should always be worked up before the burn is begun. Factors to consider include the amount and distribution of fine fuel, desired weather conditions, preferred wind velocities, direction to burn and the location of highways and building.

An actual prescription of wind speed and direction, relative humidity and air temperature should be designed for each burn. Fireguards and firebreaks then are planned, and a lighting sequence is developed.

For each prescribed burn, the landowner or someone with burning experience should serve as the fire boss. The boss coordinates the burn and tells others when to set backfires, flank fires, and head fires.

Equipment

To plan and carry out a safe burn, include at least one drip torch, a relative humidity gauge, a wind meter, spray equipment and wet feed sack. In some cases, it is wise to enlist the help of well equipped rural volunteer firefighters.

Follow-up

After the burn, the pasture should be deferred for awhile, depending on range conditions and the producer's goals for improvement.

Where to Get Help

For more information on rangeland management, contact the local office of the U.S. Department of Agriculture's Natural Resources Conservation Service. NRCS personnel give technical assistance to landowners and operators through local natural resource districts.