Planning and Conducting a Prescribed Burn

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OUTLINE

Why

 Burning safety and smoke management

Planning and conducting

Purposes for Burning

- Fuel reduction
- Seedbed preparation
- Disease control
- Thinning
- Suppression of shrubs/trees
- Removal of litter
- Increased wildlife
- Increased herbage yields
- Increased availability of forage
- Improved grazing distribution
- Increased livestock gains



Burning considerations

Safety is always the first concern
safety for LIFE is first, property second
Effectiveness is next in importance

Safety is viewed in the following categories:

- Personal safety
- Public safety
- Weather safety
- Special situations

Personal Safety

 Health consideration: People with problems such as high blood pressure, heart conditions, certain allergies, and respiratory diseases should not participate.

Clothing: natural fibers should be worn to cover the arms, legs, hair, and body.



Personal safety: communications

Obtain emergency assistanceCommunicate between crews



Personal Safety

- Know basic fire fighting and prescribed burning techniques
- Equipment in working condition and operated by capable personnel

Public Safety - Notification

- Intent to burn
- As burn begins
- After the burn

Neighbors, fire department, and police department



Public Safety: Night Burning?

5 Station

- Can't see landmarks
- Can't judge distances
- Can't see to maneuver
- Unacceptable











Wind shift moves smoke plume direction.

Air Quality and Smoke

- Can impact public health
- **90%** of emissions are carbon dioxide and water
- Ozone
- Airborne particulates e.g. PM 2.5 microns
- Hydrocarbons
- Carbon monoxide
- Nitrogen oxides
- Smoke looks bad and obstructs visibility

Potential Impacts of Inhaling Ground-Level Ozone

- Induction of respiratory symptoms
 - coughing
 - throat irritation
 - pain, burning, or discomfort in the chest
 - wheezing or shortness of breath
- Decrements in lung function
- Inflammation of airways

Minimizing Concerns with Smoke

- Adhere to state guidelines
- Burn when conditions for smoke dispersal optimum (few clouds and inversions unlikely)
- Burn when wind conditions take smoke away from population centers
- Conduct burn in as short a time as safe
- Burn using safe weather conditions





Weather Forecasts

- Commercial Radio
- Local Television
- Weather Channel
- http://www.weather.com
- National Weather Service

https://www.weather.gov



KSZØ2Ø	-010900-				
Cloud-					
Includ:	ing the city o	f Concordia			
352 AM	CDT Wed Mar 3	1 2021			
		Today	Tonight	Thu	
			0		
CLOUD COVER		MSUNNY	CLEAR	SUNNY	
PRECIP TYPE		None	None	None	
CHANCE	PRECIP (%)	0	0	0	
TEMP		53	27	62	
RH %		18	66	25	
20FTWND (MPH)		N 5 G31	NW 12	E 5 G20	
PRECIP AMOUNT		0.00	0.00	0.00	
MIXING HGT(FT-AGL)		9195		5414	
TRANSPORT WND (MPH)		NW 29		S 14	
SMOKE DISPERSAL		EXCELLENT		EXCELLENT	
LAL	THORY	1	1	1	
HAINES	INDEX	S(MOD)	5(MOD)	4(LOW)	
REMARK	5				
	S	UPPLEMENTAL W	IND DATA (M	IPH)	
	10 AM	01 PM		04 PM	07 PM
TAID	10 40	NIL 120	24	MU 19021	NNU 10





Special situations (electric power lines)

- Smoke buildup
- Water streams
- Downed lines













Do your planning before you burn!



Planning a Prescribed Burn

- Use aerial photo or map
- Inventory ALL physical features as useful or hazards
- Identify features or areas to protect
- Identify barriers to movement
- Define sides best for fireguards
- Define sides best for head fires
- Define prescription















Review the Following

- Safety and Regulations
- Local permit needed?
- Available manpower and equipment
- Notification procedure
- Contingency plans

Safe Burn Conditions

Wind speed	5-15 mph		
Wind direction	Steady from one direction		
Cloud cover – maximum	70%		
- minimum	2,000 ft ceiling		
Temperature	55-80°F		
Relative humidity	40-70%		















Flank or Strip Headfire

Advantages

- Size of fire controlled
- Amount of smoke controlled
- Widens fire breaks rapidly
- High safety level

Disadvantages

- Time consuming
- High labor requirement



Ring Fire

- Advantages

- Smoke lifted from area

Disadvanta

- Burning embers may
- Extremely fast
- High heat produced
- Large smoke colum
- Violent









Burning Procedures



Light the headfires as rapidly as possible staying 30-40 feet from the edge of the area.



Burning Procedures



As soon as the ring is complete, begin mopping up the upwind side.

Continue mopup as fire burns out and until all fires, hot spots, and smoldering areas are out.

Post Burn Activities

- Clean up/repair equipment
- Post burn evaluation
- Did the burn go as planned?
- Where were problems encountered?
- Were there communication problems?

End-of-Season Evaluation

- Did the vegetation respond as expected?
- Were the burn goals met?
- When will the next burn be needed?
- Conducting a burn
- Plan future burning activities

Prescribed Burning

- Objective
- Plan well
- Conduct burn
- Evaluate results
- ksfire.orc



Contact Information

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