

# PRESCRIBED BURN PLAN

## IRVINE PRAIRIE 2021

**SITE/TRACT:** Irvine Prairie- West Hilltop

**LANDOWNER/OPERATOR:** Tallgrass Prairie Center, University of Northern Iowa

**ADDRESS:** 1173 55<sup>th</sup> St, Dysart, IA 52224

**ACRES TO BURN:** 9

**TOWNSHIP:** Bruce, T86NR12W    **SECTION:** 32

**PLANNED DATE FOR BURN:** 4-20-21

**EXPIRATION DATE:** 5-20-21

### Notification of units of government:

**Local Fire Dept.:** Dysart Fire Department\* (City of Dysart)

**Phone:** 319-476-5690

**Sheriff/County Dispatch:** Benton County Sheriff Office

**Phone:** 319-472-2337

**Other:** Tama County Sheriff Office

**Phone:** 641-484-3760

### Notification of neighbors (in advance and day of):

**Name:** Cathy Irvine (north)

**Phone:** 319-640-5919 (cell)

**Name:** Larry Fleschner (northeast)

**Phone:** 319-342-2729 (landline)

**Name:** Duane Christian (southeast)

**Phone:** 319-476-3829 (landline)

## A. DESCRIPTION OF BURN AREA:    Program/Land use: NA

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

None

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

Tallgrass prairie vegetation throughout, approximately 5ft vegetation height. Dense warm season grasses, with switchgrass dominant.

### A3) Fuel Load:

Fine fuel (grass/forbs)	Tons/acre	%Volatile Fuels
Predominant fuel ht. 2-6 ft	~ 2	None

A4) Soil Types:	Slope%	Aspect:	%Area
Dinsdale silty clay loam	2-5%	S	75
Dinsdale silty clay loam	5-9%	NW	25

## B. OBJECTIVE AND TIMING OF BURN

General objective is to remove accumulated dead biomass to promote native prairie growth. Other objectives include suppressing non-native cool season grass, perennial noxious weeds, and trees/shrubs.

## C. SPECIFIED CONDITIONS FOR DAY OF BURN

Condition	Preferred:	Lowest Acceptable:	Highest Acceptable:
Air temperature	50-65 F	40 F	75 F
Relative humidity	40-50%	30%	60%
Wind speed	10-15 mph	7 mph	20 mph
Wind direction	N, NNW, NW, WNW, W, WSW, SW		

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

- Firebreak Construction: (type of fire line, width in feet. Also indicate on burn plan map.)**  
East, south, west breaks 20ft wide. N break appx. 50ft wide to road. Mowed breaks into existing prairie, stubble height 2in, thatch thrown out of breaks. Mowed breaks raked of all thatch prior to burn. Intensity reduction line (10ft width) installed on east and south edge.
- Existing firebreaks: (streams, roads, tilled field, etc. Show on burn plan map)**  
Road to north provides primary existing fire break.
- Items to address: (protection of power line poles, signs, cable/phone junction boxes, dead tree removal, etc.)**  
Visitor sign-in box at NE corner should be protected.
- Potential Hazardous Area within Burn Area: (power lines, snags, structure, obstacles to vehicle access, plastic drain tile, under-ground utilities, etc.)**  
None.

## E. ADJACENT AREAS

### 1. **Vegetation and Fuels Description:**

The field bordering the west boundary is corn stubble with a green broadleaf forb cover crop. The field bordering the south boundary is mostly untilled soybean stubble with appx. 20 ft tilled strip adjacent to Irvine Prairie. The field bordering the east boundary (2021 planting area) is untilled soybean stubble. The farm to the north consists of mixed mowed cool season grass, cool-season ornamental forbs, shrubs 15-30 ft tall, and trees 30-60 ft tall. The field bordering the north boundary is untilled soybean stubble.

### 2. **Special Precaution Areas: (also drawn on attached burn plan map)**

The primary special precaution area is Irvine Farm, north of the road. Other special precaution areas include adjacent fields of cover cropped corn stubble (south and east) and an unmanaged brome stand adjacent to the southwest corner of the property.

### 3. **Smoke Management Plan:**

Avoid sending smoke to the north. Irvine residence is appx. 200 ft. to the north of the burn area and gravel road is appx. 50 ft. to the north. Flaggers and signage should be assigned to 55<sup>th</sup> St. on the east and west boundaries of Irvine Prairie if smoke is expected to cross the road (southerly winds). If smoke is on the road, flaggers will direct traffic.

## F. TOOLS/EQUIPMENT NEEDED:

*Include type and number of rakes, swatters, drip torches, backpack pump, other*

### **F1) Equipment Checklist**

2 Pumper Vehicles (Polaris Ranger w/ 50 gal tank, Chevy Silverado w/ 225 gal tank)

2 Drip torch (Igniters must wear all-leather boots)

1 Personal weather station (burn boss)

5 Two-way radios

5 gal Drip torch fuel (40 gas:60 diesel)

4 Flappers

5 gal Drinking water (or 2 case bottled water)

5 gal pumper engine fuel (unleaded gas)

4 Rakes

4 Lighters (line leaders and igniters)

4 Backpack sprayers

12 NOMEX coveralls

1 Fencing tool

## G. PERSONNEL REQUIRED FOR BURN

*Include number of people and their role. It's recommended that burning be done by certified personnel.*

<b>Position</b>	<b>Name</b>
Fire Boss	Justin Meissen (FFT2 Coursework)
A Team Line Leader/Driver	Laura Walter
B Team Line Leader/Driver	Aaron Sanderson (FFT2 Coursework)
A Team Igniter	DJ Brooks or volunteer, must wear all-leather boots
B Team Igniter	Andy Olson or volunteer, must wear all-leather boots
A Team Pumper	Ethan Evans or volunteer
B Team Pumper	Alec Glidden or volunteer
A Team Mop/Spotter	TBD volunteer
B Team Mop/Spotter	TBD volunteer

## H. SPECIAL CONSIDERATIONS

### **Precautions to prevent fire escape**

Wide burn breaks make escape unlikely, but airborne embers may cause spot fires in heavy fuels. Look-outs will be assigned to watch and extinguish spot fires downwind from airborne embers.

## I. SUPPRESSION PLAN IF FIRE ESCAPES

*Note any contingency plans, i.e. secondary firebreaks: creeks, roads, disked breaks, authorities to contact. Provide burn map to fire dept. noting field access, hazards, etc.*

Secondary fire breaks exist surrounding the perimeter of the property. These are 10ft mowed breaks with appx. 5 ft strip of cool season grasses and mowed trail. Roads exist along the entire north and east edges of the property. A creek and cool season waterway runs northwest to southeast in the adjacent southern property. If fire escapes to the west or south and cannot be suppressed at escape location safely from the flanks, crews should follow the east burn break north to follow a mowed trail and cool season waterway to access the fields to the west and south. Engine crews should be prepared to suppress spot fires in the adjacent fields. Call 911 if fire in fields cannot be suppressed. If fire escapes to the east and cannot be suppressed at escape location safely from the flanks, crews should move to the area to the east of the mowed cool season water way and prepare to suppress fire that moves into this break or spot fires into the bean stubble to the east.

## J. PATROL AND MOP UP PLAN

Look-outs should be assigned to periodically watch for spot fires downwind from airborne embers. Crew may be dismissed 30 min. after no-smokes. Burn boss will remain on site for 1 hr 30 min after crew dismissed to ensure no flare ups.

## **K. IGNITION PLAN (See attached burn plan map)**

### **1. Ignition Time:**

1pm

### **2. Method of Firing/Firing Sequence:**

For west and southwest winds (W, WSW, SW) (Map A): Begin with backing fires ignited in the middle of the east line to create sufficiently wide black line along the east and north line. Team A moves southwest, Team B northeast (A1, B1-B2). Extinguish fires as crew creates black line. Once black lines have been established, B Team igniter should light strip head fires approximately 10-20 ft wide running perpendicular to wind direction (N to S) to blacken the northeast corner (B3), stopping at DP2. Once corner is blackened, an igniter should continue strip head fires of reasonable size until unit is burned.

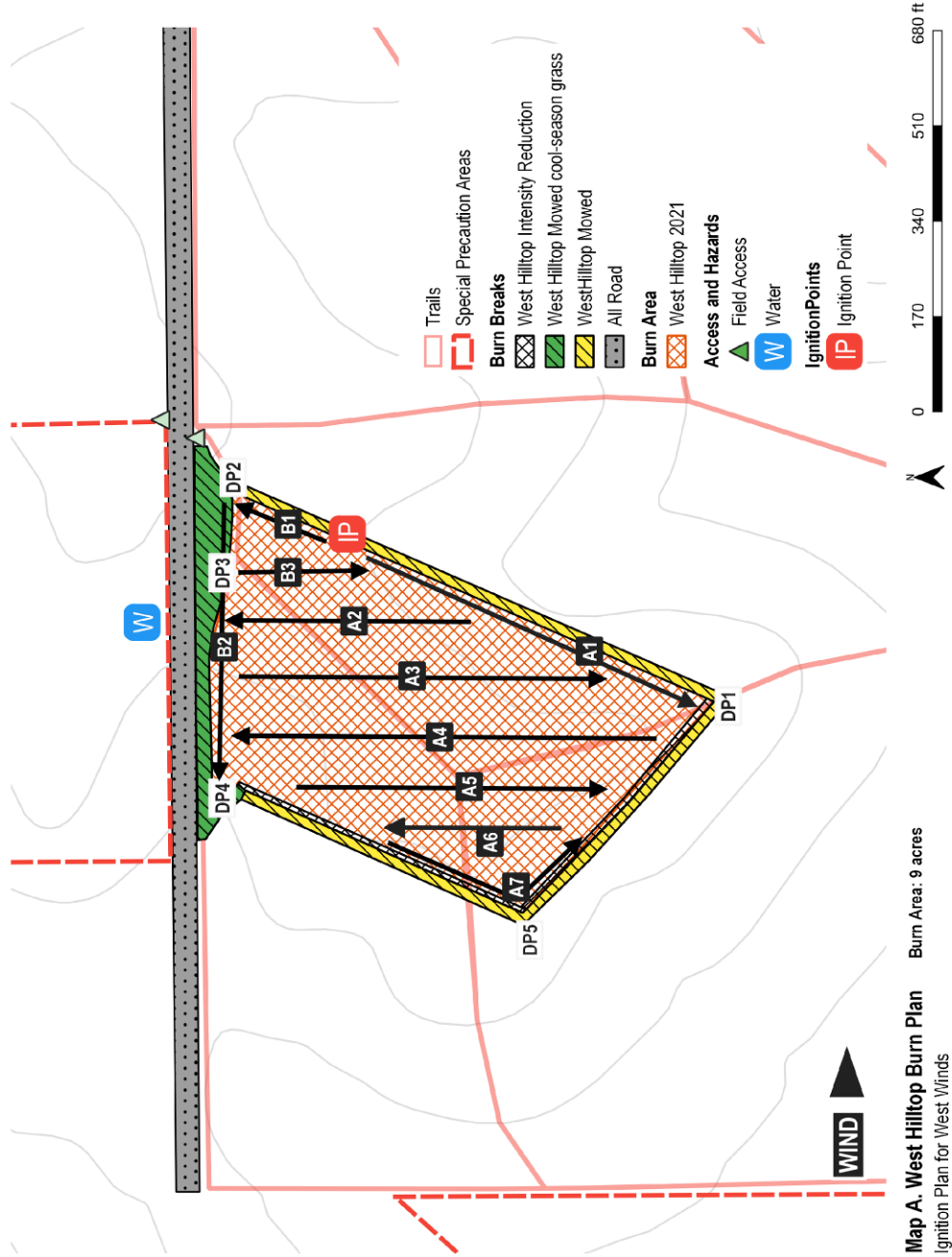
For northwest winds (NW, WNW) (Map B): Begin with backing fires ignited in the middle of the east line to create sufficiently wide black line along the east line. Team A moves southwest, Team B northeast (A1, B1). Once Team A reaches appx 50 ft from DP1, Team A igniter should light the last of the east line before reaching DP1 (corner and trail intersection), then continue ignition on the east side of the trail appx 50ft to the north, then extinguish igniter (A2). As southeast corner burns, Team B can ignite the north line to DP3, the trail intersection (B2). Once the southeast corner has blackened, Team A igniter should ignite the south line appx 50 ft to the west, then turn to the east and continue ignition to the trail (A3). Once this portion of the corner has blackened, and east blackline is >50ft wide, Team A can ignite flanking fire on the south line (A4). Once south blackline is ~50ft wide, Team B can begin slowly lighting flanking/head fire on the north line (B3). Light a head fire to ignite the remaining fuels between the flanking fires (B4). Team A should watch for spot fires from DP5.

For north winds (N,NNW) (Map C): Ignite in the southeast corner and start back firing the south and east line to create sufficiently wide black line. Team A and B should move approximately the same speed toward DP3 and DP1 respectively. Both Teams should hold at DP1, DP3 until black lines >50 ft wide (A1,B1). Team B should then continue backfiring along the east line until reaching DP2, while Team A continues to hold at DP3 (B2). Team A can then begin flank firing along the west line (A2) ensuring corner is well blackened and widened before continuing toward DP4. Once Team A has reached DP4, Team B can light final head fire along north line (B3).

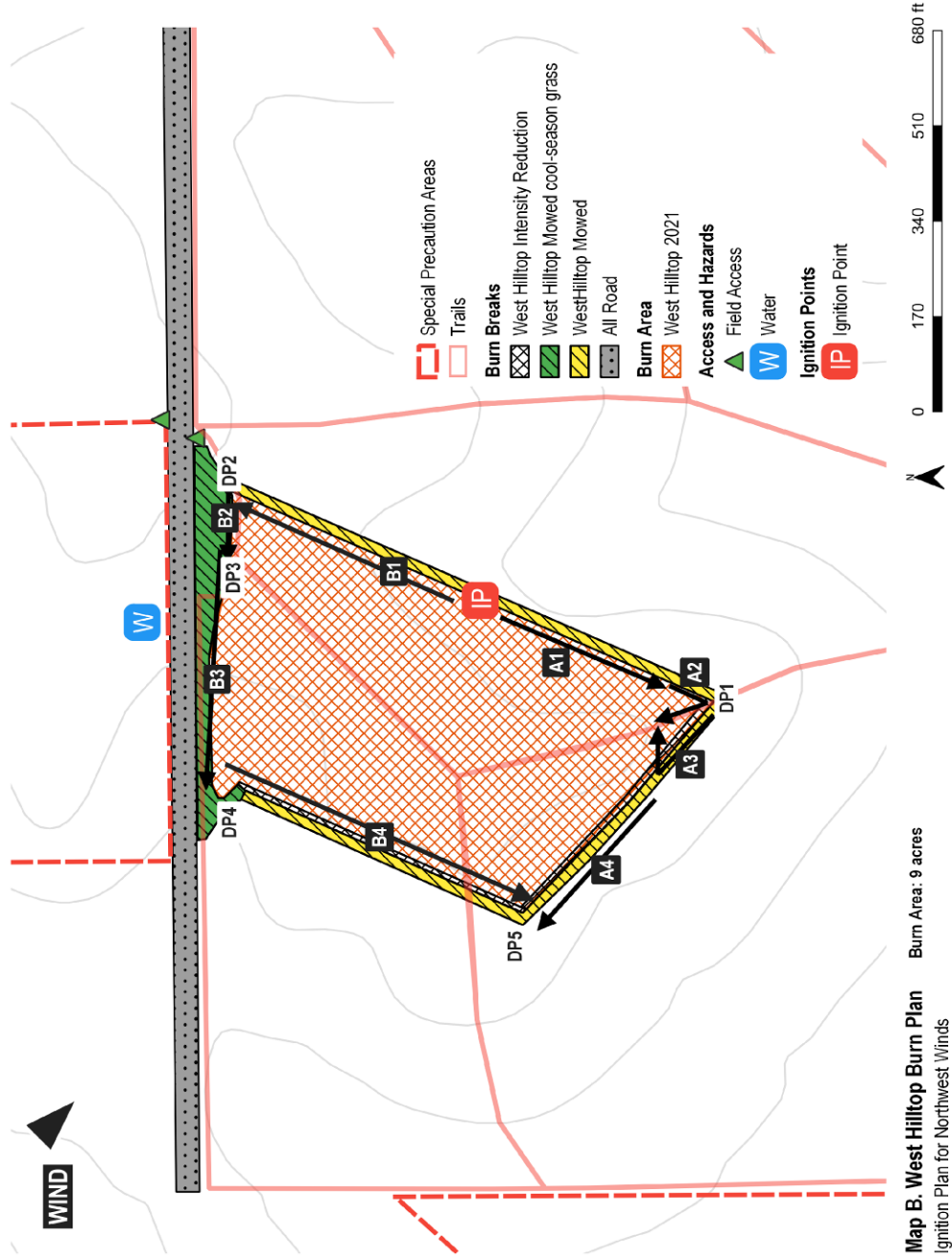
### **Plan Prepared By:**

Justin Meissen

Research and Restoration Program Manager, Tallgrass Prairie Center, University of Northern Iowa



**Map A. West Hilltop Burn Plan** Burn Area: 9 acres  
 Ignition Plan for West Winds





Map C. West Hilltop Burn Plan Ignition Plan for North Winds  
 Burn Area: 9 acres



# PRESCRIBED BURN CHECKLIST

For review and completion day of burn

## A. Pre-burn Checklist:

- |  |     |    |
|--|-----|----|
| 1. Weather forecast favorable                | YES | NO |
| 2. Necessary firebreaks constructed          | YES | NO |
| 3. Potential hazards accounted for           | YES | NO |
| 4. Special precaution areas noted            | YES | NO |
| 5. Safety equipment adequate                 | YES | NO |
| 6. Tools/equipment on-site                   | YES | NO |
| 7. Personnel needed available                | YES | NO |
| 8. Special considerations reviewed with crew | YES | NO |

## B. IF ANY OF ABOVE ARE ANSWERED "NO", DO NOT BURN

### 1. Actual weather at burn

- |  |              |           |                |
|--|--------------|-----------|----------------|
| i. Acceptable Conditions:                  | Preferred:   | Actual:   | Time Recorded: |
| ii. Air temperature (40-75 F)              | 60 F         | _____ F   | _____          |
| iii. Relative humidity (30-60 %)           | 40%          | _____ %   | _____          |
| iv. Soil damp to touch                     |              | _____     | _____          |
| v. Wind speed (7-20 mph)                   | 12 mph       | _____ mph | _____          |
| vi. Acceptable wind direction steady from: | N, NW, W, SW |           | YES NO         |
| vii. Preferred wind direction steady from: | N, NW        |           | YES NO         |
| viii. Actual wind direction:               | _____        |           |                |

2. Fronts or changes expected? YES NO

### 3. Notification of units of government made:

- |                             |       |              |
|-----------------------------|-------|--------------|
| i. Local Fire Department    | _____ | phone: _____ |
| ii. Sheriff/County Dispatch | _____ | phone: _____ |
| iii. Other                  | _____ | phone: _____ |

### 4. Notification of neighbors

- |                  |              |
|------------------|--------------|
| i. Name: _____   | phone: _____ |
| ii. Name: _____  | phone: _____ |
| iii. Name: _____ | phone: _____ |
| iv. Name: _____  | phone: _____ |

5. Necessary permits obtained (if any): YES NO NA

Checklist completed by: \_\_\_\_\_

Date: \_\_\_\_\_

**A. Post-burn Evaluation:**

1. **Burning method used** \_\_\_\_\_

2. **Start of burn** Beginning time: \_\_\_\_\_

**Mop-up completed** Ending time: \_\_\_\_\_

3. **Observed change in weather conditions during burn:**

\_\_\_\_\_

\_\_\_\_\_

4. **Fire behavior:**

- |                          |    |     |      |
|--------------------------|----|-----|------|
| i. Spotting              | NO | FEW | MANY |
| ii. Difficult to control | NO | YES |      |
| iii. Convection column   | NO | YES |      |
| iv. Fire whirls          | NO | YES |      |

5. **Objective of burn met:** NO YES

6. **Post-burn management plan (if needed):**

\_\_\_\_\_

\_\_\_\_\_

7. **Other comments:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Evaluation Completed by:**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_