Winberg WPA

Prescribed Burn Plan

US Fish & Wildlife Service Region 6

North Dakota Fire Zone

Arrowwood Complex

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Element 1: Signature Page

PRESCRIBED FIRE PLAN

ADMINISTRATIVE UNIT NAME(S): Chase Lake WMD Stutsman County

PRESCRIBED FIRE NAME:

Prescribed Fire Unit (Ignition Unit): Winberg WPA

PREPARED BY:

Name (print): Terry Gwilliams Qualification/Currency: RXB2

Signature:_____ Date:_____

TECHNICAL REVIEW BY: *See Appendix B: Technical Reviewer Checklist*

Name (print):_____ Qualification/Currency:_____

Signature:_____ Date:_____

COMPLEXITY RATING: Moderate

MINIMUM BURN BOSS QUALIFICATION: RXB2

APPROVED BY:

Name – US FWS Agency Administrator (print):_____

Signature – Agency Administrator:_____ Date:_____

Element 2A: Agency Administrator Ignition Authorization

See IAP

Element 2B: Prescribed Fire Go/No-Go Checklist

See IAP

Element 3: Complexity Analysis Summary

See Appendix: C Complexity Analysis for complete Complexity Analysis.

Element 4: Description of Prescribed Fire Area

A. Physical Description:

The WPA is 4 miles east, 1 mile north of Woodworth in Stutsman Co. The entire WPA is fenced and there are cross fences. (See attached maps). Gravels roads are located on the west and north side of the unit. Cropland and pasture are located on the east and south.

See IAP (ICS 204)

B. Vegetation/Fuels Description:

1. On-site fuels data:
The unit consists of tame and native grasses with areas of Canada Thistle. The majority of the unit would be classified as (FM1) but there are stands of Big Blue Stem (FM3) and areas around the wetlands that are (FM3) are also strongly represented.

2. Adjacent fuels data:
Adjacent fuels are similar within the WPA and primarily private crop and CRP around the WPA.

3. Percent of vegetative type and fuels model(s):

Vegetation Type	Fuel Model	Acres	%
Native/Tame Mix	1	394	85
Tame	1	0	0
Crop	1	0	0
Wetland	3	64	15
Road	N/A		
Total Acres		458	100

C. Description of Unique Features, Natural Resources, Values:

There are no T&E or cultural resource concerns on this unit. Values at risk include boundary and interior fences.

Any threatened or endangered species potentially affected by the prescribed burn will be addressed by a Section 7 consultation. Section 7 will be completed by Chase Lake WMD staff. Cultural Resource Compliance will be submitted by fire staff and be on file.

Maps - Attachments in Appendix A

1. Vicinity (Required)
2. Project/Ignition Unit(s) (Required)
3. Contingency (R6 FWS): ☒ Included ☐ Not Included
4. Ignition Sequence (R6 FWS): ☒ Included ☐ Not Included
5. Smoke Trajectory (R6 FWS): ☒ Included ☐ Not Included
6. Topo: ☐ Included ☒ Not Included

Element 5: Objectives

A. Resource objectives:

See LAP(ICS 202)

B. Prescribed fire objectives:

See LAP(ICS 202)

Element 6: Funding

A. Cost:

Fish and wildlife service agency administrator and FMO will coordinate any/all costs associated to the burn prior to ignition, including - not limited to, travel, OT, fuel and mechanical repairs.

B. Funding source:

Fish and wildlife service agency administrator and FMO will coordinate any/all funding sources associated with completion of the plan prior to ignition.

Element 7: Prescription

A. Prescription Narrative:

1. Describe how fire behavior will meet objectives:
Prescribed fire is used as a management tool to mimic natural wildfires that developed the prairie as it is today. Fire will remove the litter and allow native warm season grasses & forbs to grow in areas heavily dominated by exotic invaders. FM's 1 & 3 are light and flashy fuels primarily wind driven. Fire behavior parameters are listed below. Values will vary with lower end found on the backing and flanking fires and high end on the head fires. Similar fire behavior will be found outside of the unit.

B. Prescription Parameters:

1. Environmental or fire behavior (or both)
See LAP
2. Fire Modeling or empirical documentation (or both)
See Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation for Behave Plus Runs and NRCS Potential for Damage by Fire Map.

Fire behavior outside the unit would be similar to that inside the unit with the exception of cured crops. The BTU's that cured crops put out will be too much that direct attack will not work.

Element 8: Scheduling

A. Implementation Schedule:

1. Ignition Time Frames or Season(s) (or both)
   Implementation schedule is determined by the agency administrator and is not limited to any day of the year provided that the prescription parameters are met and the Agency Administrator Ignition Authorization has been signed approving such actions. Ignition may be implemented any time of the day provided all attempts are made to extinguish smoke before night time conditions fall out of prescription.

B. Projected Duration:

Project will take one operational period to complete during normal working hours. This does not include site prep which will be completed prior to ignition date. Mop-up and/or patrol activities may occur on the following day.

C. Constraints:

Burning may only be conducted during preparedness level 4 or 5 with approval from the National office provided approval included feedback from the Geographic Area MAC group (see Interagency Standards for Fire and Aviation Operations, NFES 2724, Chapter 18). Controlled burning may not be conducted during Red Flag Warning Days or when the Rangeland Fire Danger Index is in the Extreme category.

Element 9: Pre-burn Considerations and Weather

A. Considerations:

1. On-site
   a. A mowed fire break (10' min. - raked in high fuel loading areas) will be established along areas of the burn unit that do not have natural barriers. Sprinkler lines or wet-lines may be substituted for mowed fire breaks where practical or where terrain does not lend itself to mowing (too steep, rocky areas, etc…). Pre-established black lines at least 10 feet wide may also be substituted for mowed fire breaks. Black lines may be established around values at risk including, but not limited to, power pole locations and wood sign locations. *See Appendix A. Maps for locations of mowed fire breaks and further details of physical site preparations.*
   b. Section 7 consultations were completed for the Chase Lake WMD as part of CCP process for North Dakota Wetland Management Districts CCP (2008). The CCP states that management actions within the CCP should not adversely affect Threatened and Endangered Species or their habitats. These Section 7 Intra-Service consultations are an appendix to the CCP and are on file at the Refuge. The agency administrators are responsible for determining the need for additional consultation on an annual basis: 1) whether any new ESA listings or designations of critical habitat have occurred for species in the vicinity; 2) whether any new T&E surveys have revealed species locations in or near proposed projects; and 3) whether the projects conducted the previous year had the intended effects on T&E species and habitat. Prescribed burning in areas where threatened and endangered species exist will not be conducted if the prescribed fire will be detrimental to the species or any adverse impacts cannot be mitigated. *See Appendix G: Clearances and Permits.*
   c. Cultural resources are scattered throughout the Complex as the area was heavily used by Native Americans, but is a relatively un-researched archeological area. Cultural resource records are maintained at Audubon Complex. Archeological clearance for prescribed burning will be obtained from the regional archeologist. All restrictions and recommendations will be adhered to. *See Appendix G: Clearances and Permits.*
2. Off-site
   None.

B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s):

See LAP

C. Notifications/Permits:

All necessary permits will be obtained by the FMO or designee prior to the start of a project.

See Appendix A. Maps for Notification Map and contacts.

Element 10: Briefing

A. Briefing Checklist; including, but not limited to: (additional items may be added)

See IAP

Element 11: Organization and Equipment

A. Positions:

Burn boss will determine if additional positions are required based on current weather, fire danger, fuel conditions and experience of crew. *See IAP (ICS 204).*

B. Equipment:

5 UTV's with 70-100 gal tanks. *See IAP (ICS 204).*

1 Type 6 engine

C. Supplies:

Drip torches, torch fuel, hand tools & portable pump - equipment is readily available on engines.

Element 12: Communication

Burn Boss will identify radio frequencies and communication procedures *See IAP.*

Element 13: Public and Personnel Safety, Medical

A. Safety Hazards:

See IAP (ICS 202), Appendix D: Job Hazard Analysis for additional safety hazards and mitigation.

B. Mitigation: Measures Taken to Reduce the Hazards:

All crew members will wear proper PPE and adhere to the Ten Standard Fire Orders at all times. All crew members will be briefed on LCES, potential Watch Out Situations, hazards and mitigation measures prior to ignition. Caution signs will be placed on the road to warn public. *See Appendix D: Job Hazard Analysis for mitigation of safety hazards.*

C. Emergency Medical Procedures:

On scene personnel will follow the IAP (ICS 206) Medical Plan. Further guidance on emergency procedures can be found in the Incident Response Pocket Guide (NFES 1077) and Chapter 1 on the Fireline Handbook (NFES 0065).

D. Emergency Evacuation Methods:

See IAP (ICS 206) Medical Plan.

E. Emergency Facilities:

See IAP (ICS 206) Medical Plan.

Element 14: Test Fire

A. Planned Location:

A test fire will be ignited in a representative fuel type, in an area that can be easily controlled prior to the start of ignition operations. This area will generally be on the downwind side of the unit and adjacent to an established control line or natural barrier. Analysis of the initial ignitions may provide adequate test fire results.

B. Test Fire Documentation:

1. Weather conditions on site - Current weather conditions will be documented in Element 20: On-Site WX & Fire Behavior Obs. Table.
2. Test fire results - Burn Boss will verify that the prescribed fire behavior characteristics will meet management objectives and smoke dispersion is favorable before ignition may continue as planned. If test fire results are unfavorable, the test fire will be extinguished and the prescribed fire will not continue until conditions are favorable. Test fire results will be documented in Element 20: Unit Log Table.

Element 15: Ignition Plan

A. Firing Methods:

1. Techniques – Strip and Spot fires to ignite backing, flanking, and head fires utilizing hand-held firing devices by personnel on foot or ATV mounted firing devices.
2. **Sequences -** Exact ignition sequences to be used will be determined and approved by the Burn Boss prior to ignition of the unit. Local factors may influence on-site weather conditions, therefore the ignition sequence will not be determined until all resources arrive on site at which time the planned ignition sequence will be provided during the operational briefing.
3. Patterns – Working towards the upwind side, a backing fire along the downwind side, followed by flanking fires with interior chevron or strip fires would be typical patterns for a unit of this size to manage fire behavior and smoke. A solid strip head fire would be used on the upwind side to complete the burn.

B. Devices:

Drip torches, ATV drip torch, fusees and flare pistols. ATV ignitions will be performed in accordance with National and Regional Fish and Wildlife Service guidelines with a properly qualified operator.

C. Minimum Ignition Staffing:

Ignition staffing typically requires 1-3 personnel coordinated by the Burn Boss or assigned personnel on their side of the unit. Interior ignitions will be coordinated through the Burn Boss.

Element 16: Holding Plan

A. General Procedures for Holding:

The burn boss may elect to have a portable pump set up at a convenient location for engines to fill. Locations of re-fill sites will vary depending upon the season of the burn and water levels in nearby wetlands. *See Appendix A. Maps for locations of potential refill sites.*

Wet-lines will be established immediately prior to any ignition along established control lines, unless a natural or manmade control line provides a barrier to fire spread such as a gravel road, disked fire break or harvested crop

field that has been worked. At least one holding resource such as an engine, UTV, or firefighter will follow up each ignition to monitor for creeping or spotting of fire outside of control lines. Additional resources, typically an UTV, will continually patrol all lines of the unit extinguishing all smokes within 10 ft. of the line or until otherwise directed by the burn boss.

After ignition is completed, crews will immediately begin mop-up actions. Burn boss will establish mop-up standards based on adjacent fuels and expected weather conditions. At a minimum, control lines adjacent to readily available fuels will be cold–trailed and extinguished a minimum of 50 ft. in from the edge. The burn boss will decide whether or not a unit needs subsequent monitoring based on current and expected weather. This unit will be completed within one operational period. Fuel types and burning conditions outlined within this plan will generally not support fire activity overnight.

B. Critical Holding Points and Actions:

Critical holding areas will typically be the mowed fire break lines, especially downwind lines. A type 6 engine or ATV/UTV will be assigned to these lines for constant patrol until line is secure to ensure there is no possibility of fire creeping outside the unit. Timing and speed of ignition will depend on ability of holding resources and good communications between the two. *See IAP (ICS 204) for detailed Critical Holding Points and Actions.*

C. Minimum Organization or Capabilities Needed:

Ignition crew may be used as needed for holding as they complete their ignition operation. *See IAP (ICS 204).*

Element 17: Contingency Plan

A. Management Action Points or Limits:

1. Project objectives are not being met:
   This situation is typically the result of inadequate burning conditions. If it appears that project objectives are not being met the Burn Boss will immediately evaluate current environmental and fire behavior conditions and determine if they are within prescription.
2. Prescription Parameters:
   One or more environmental or fire behavior prescription parameters are exceeded due to unexpected changes in weather or other factors.
3. Smoke Impacts:
   Changes in weather, burning conditions or other factors occur that cause imminent smoke problems such as poor visibility on public roadways, significant impacts to the general public, residences or communities, or smoke that may have significant negative impacts to firefighters on the line.
4. Minimum Implementation Organization:
   Implementation organization falls below minimum requirements due to injury, illness or any other factor.
5. Unit Boundary:
   The fire exceeds the unit boundaries as defined on unit maps within this plan.
6. Contingency Resources:
   Contingency resources as identified in this plan are not available prior to the start of ignition operations, or identified contingency resources become unavailable after ignition operations have commenced.

B. Actions Needed:

1. Project Objectives are not being met:
   If current conditions are within prescription parameters the Burn Boss will evaluate expected environmental conditions for later in the operational period. If environmental conditions are expected to improve the Burn Boss may elect to temporarily suspend further ignition operations and hold resources until conditions improve or cancel any further ignition operations for the operational period and begin with control and mop-up of the unit.

If environmental conditions are not expected to improve ignition operations will be cancelled and control and mop-up of the unit will begin immediately.

2. Prescription Parameters:

All resources will work at keeping active fire contained within the unit boundaries. The Burn Boss will continue to direct resources as long as active fire remains within the unit. If environmental and/or fire behavior conditions are expected to fall back within acceptable parameters the Burn Boss may elect to continue with ignition operations later in the operational period when prescription parameters can be met. If environmental and/or fire behavior conditions are not expected to fall back within acceptable parameters resources will work at control and mop-up of unit and no further ignition operations will commence unless deemed necessary for control of the unit by the Burn Boss.

3. Smoke Impacts:

If changes in weather conditions or other factors occur that cause imminent smoke problems, the following plan will be initiated:

a. All attempts will be made to reduce smoke emissions from the burn as quickly as possible. This may include immediate shut down of the burn and suppression of any portion of the unit still on fire. Mop-up will also be initiated in an attempt to reduce smoke production to the furthest possible extent.
b. If additional resources are required to extinguish the burn and eliminate further smoke production, they will be requested through State Radio and may include local fire departments, personnel from other refuges or other state and federal agencies in the area.
c. Smoke signs will be placed on impacted roads, traffic control will be initiated and the county sheriff or other law enforcement personnel may be called in through State Radio to assist with local traffic control, including temporary closure of area roads if deemed necessary. Locations and assignments of any traffic control personnel will be determined by the Burn Boss and law enforcement personnel immediately prior to assignment. Weather variables may exist during any potential smoke problem that would prevent one from predicting the best location for traffic control measures prior to the event itself.
d. If it appears that smoke from the burn will impact local communities or other smoke sensitive locations all efforts will be made to identify the potential problem areas and inform the public so that local actions to reduce impacts such as closing up buildings and moving smoke sensitive individuals away from the impacted areas can occur.
e. The burn boss will remain on scene until smoke problems are resolved or until relieved by an individual appointed by the line officer.

4. Minimum Implementation Organization:

The Burn Boss will temporarily halt ignition operations and evaluate the potential for successful completion of the burn with the current organization. At a minimum, the Burn Boss will consider current and expected fire behavior and weather, condition of downwind control lines, adjacent fuels, experience level of current organization, and capability of on-site equipment. If the Burn Boss feels that the burn can continue safely and successfully he/she may elect to continue with operations. If a determination is made that problems may arise with continuation then operations on the unit will shift to control and mop-up. At no time may ignition operations continue if organization or equipment levels fall below 80% of the minimum requirements.

5. Unit boundaries:

Minor escapes if readily controlled by on-site resources will be extinguished and ignition activities may resume. If a significant escape occurs and has significant spread potential, holding forces will take immediate suppression actions while ignition crews will hold up and perform holding duties on the current prescribed fire. The controlled burn may be extinguished and all resources moved to suppression responsibilities at the discretion of the Burn Boss. If fire burns onto adjacent private lands and the Burn Boss determines the fire will not be contained with on-site resources the Burn Boss will contact State Radio and request contingency resources. At this time the Burn Boss, or highest qualified individual on scene, will assume the duties of incident commander.

6. Contingency Resources:

If contingency resources as identified in this plan are not available ignition operations may not commence. If identified contingency resources become unavailable after commencement of ignition operations the Burn Boss may choose to secure the unit until alternate contingency resources can be identified and their availability confirmed or may choose to finish ignition operations if that is the prudent decision to be made.

C. Minimum Contingency Resources and Maximum Response Time(s):

Two wildland capable engines (equivalent to a Type 7 or larger) with a staff of two will be the minimum required available contingency resource. If the incident commander determines that structures are threatened as a result of the escaped fire, a minimum order of one structure engine with crew per threatened structure will be ordered. It can generally be assumed that if a local fire department is not currently involved in any suppression efforts that at least two engines with a minimum of two personnel can be ordered and on scene within 30 min.

Element 18: Wildfire Declaration

A. Wildfire Declared By:

The Burn Boss is responsible for determining if an escape has become a wildfire. An escaped fire will be declared a wildfire if:

1. If a slop over, spot fire, or multiple spot fires occur and it is immediately obvious that the fire will not be able to be controlled with on-site resources.
2. If lives are threatened, private property, resources, or other structures are threatened, regardless of pre-determined time frames for control determination.
3. If a slop-over or multiple slop-overs occur on private lands outside the burn unit greater than 1 acre in size.
4. If a slop over/spot fire or multiple slop overs/spot fires occur in areas outside the burn unit on U.S. Fish and Wildlife Service Lands and are not able to be contained within 30 minutes with an appropriate management response from on-site resources.

B. IC Assignment:

The Incident Commander will be determined during the operational briefing. The Incident Commander will be at least ICT4 qualified. The Burn Boss will assume the duties of Incident Commander unless an alternate or trainee is identified during the operational briefing. IC will announce wildfire declaration over radio and instruct all resources to convert over to State Fire channel for communications.

C. Notifications:

Upon declaration of a wildfire the Burn Boss, or someone designated by the Burn Boss, will notify State Radio and request additional resources as needed. The Burn Boss or designated individual will also contact the North Dakota Dispatch Center and the Audubon Complex Project Leader.

D. Extended Attack Actions and Opportunities to Aid in Fire Suppression (Optional):

Extended attack is very unlikely in this project area due to the nature of the fuels involved (1 hour time lag). If extended attack is necessary all resource orders will be placed through the North Dakota Dispatch Center. If containment operations are expected to extend into the next operational (burning) period a fully qualified Type 3 Incident Commander (ICT3) will be requested.

Element 19: Smoke Management and Air Quality

A. Compliance:

All burning will be done in compliance within guidelines established by the North Dakota Department of Health. No burning will be done on days when smoke dispersal is forecasted to be poor for the entire day.

B. Permits to be Obtained:

A permit to conduct open burning is required from the North Dakota State Department of Health, Environmental Health Section. The appropriate permit will be requested from the state, and required conditions adhered to. The

request will be made prior to the prescribed fire season. *See Appendix G. Clearances and Permits.*

C. Smoke-Sensitive Receptors:

See See IAP (ICS 204) and Appendix A. Maps for location of smoke sensitive areas/receptors. See Appendix F. Smoke Management Plan.

D. Potential Impacted Areas:

Adjacent roads may have short term visibility issues. Fire crew or additional traffic control personnel will control any traffic until visibility clears up. Burn boss will coordinate ignition and utilize favorable combination of prescription parameters to minimize any impact to residence.

E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:

Burns will be conducted within acceptable prescription parameters including wind speed and direction, dispersion and atmospheric stability. Burning will not be conducted when an inversion is in place and is not predicted to break by early afternoon. Burns will be conducted as quickly as possible, while adhering to unit objectives and safety guidelines. This burning technique typically produces a convective column that will move smoke off the ground and into the atmosphere where it is dispersed by transport winds further limiting smoke concerns in the area. Fire crew personnel will be rotated out of heavy impact areas as needed. Mop-up will be conducted by Holding and Ignition personnel immediately after ignition operations are concluded. Mop-up will continue until all smokes are extinguished or until the possibility of escape or smoke management problems are eliminated.

Element 20: Monitoring

A. Fuels Information Required and Procedures:

One hour fuels are the sole carriers of fire throughout the project area. One hour fuel moistures may be calculated to predict conditions based on weather observations and forecasts with the use of tables such as those found in Appendix B of the NWCG Fireline Handbook. *See Element 7: Prescription, B. Prescription Parameters.*

B. Weather Monitoring (Forecasted and Observed) Required and Procedures:

Environmental prescription parameters including temperature, relative humidity, and winds will be monitored prior to initiating any burn. Weather conditions will continue to be monitored throughout the burn as often as deemed necessary by the Burn Boss. Weather observations will typically be taken on site with a standard belt weather kit or a kestrel. The day's observations can be compared to those taken by the remote automated weather stations in the area. Unit Log (ICS 214) with On-Site WX & Fire Behavior Observations is located in the IAP.

C. Fire Behavior Monitoring Required and Procedures:

Fire behavior will be monitored visually by the Burn Boss or other designee. Observations will typically focus on flame lengths. Unit Log (ICS 214) with On-Site WX & Fire Behavior Observations is located in the IAP.

D. Monitoring Required to Ensure that Prescribed Fire Plan Objectives are Met:

First order fire effects will be monitored and documented in the On-Site WX & Fire Behavior Obs. to determine results of the burn. This monitoring will predominately involve ocular observations to determine if fuels are being consumed in a manner that meets objectives in section 5 of this plan. Long term monitoring will not be possible on all units but representative plots may be established on random units to determine long term fire effects. Long term monitoring will be the responsibility of the refuge biologist. Unit Log (ICS 214) with On-Site WX & Fire Behavior Observations is located in the IAP.

E. Smoke Dispersal Monitoring Required and Procedures:

Smoke dispersal will be monitored by the Bun Boss or other person designated to do so. Smoke dispersal will be evaluated to determine its impacts on nearby roadways, residences and general public. Unit Log (ICS 214) with On-Site WX & Fire Behavior Observations is located in the IAP.

Element 21: Post-burn Activities

A. Post-Burn Activities that must be Completed:

Mop-up will be conducted by Holding and Ignition personnel immediately after ignition operations are concluded. Mop-up will continue until all smokes are extinguished or until the possibility of escape or smoke management problems are eliminated. A minimum 100 foot wide perimeter will be used for mop-up standards with further evaluation by the Burn Boss upon completion. Burning materials within this area will be extinguished with water and hand tools. Traffic control operations will conclude as soon as mop-up is completed and all smoke concerns to roadways have been eliminated. Caution Smoke signs may be left overnight if Burn Boss deems necessary.

No rehabilitation to the burn unit should be necessary. Soft soils may become significantly rutted due to equipment travel. Fence posts and wire may also need repairs. Any equipment rehabilitation needs will be addressed during the AAR and completed on scene if possible.

An After Action Review (AAR) should be conducted after every operational period. This may not be possible until the next day. Guidelines for an effective AAR can be found in the Incident Response Pocket Guide.

The Burn Boss will be responsible for immediately notifying local dispatch of fire status and briefing agency administrator as soon as practical. Burn boss will monitor and declare the fire out 24 hours after last smoke is sited. Burn boss may select a crew member to monitor and declare fire out if burn boss is absent.

Prescribed Fire Plan Appendices

Appendix A: Maps:

- Vicinity,
- Project,
- Contingency,
- Ignition Sequence,
- Smoke Trajectory,
- Notifications Map

Appendix B: Technical Reviewer Checklist

Appendix C: Complexity Analysis

Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment

Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation

Appendix F: Smoke Management Plan and Smoke Modeling Documentation (Optional)

Appendix G: Clearances and Permits

Appendix H: IAP, Communication & Medical Plans