



Incident Action Plan

Arapaho Rx ~ 10/16/2015

A. Physical Description

Arapaho

Legal description:	T: 9N	R: 79W	S: 33
Latitude:	40°42' 40.85"	Longitude:	106° 16' 35.317"
	40° 42.694		106° 16.577
UTM	13T 392194.05		4507527.4
Project Acres:	211	County:	Jackson
Primary Unit Acres:		Drainage:	
Low elevation:	8077	Average aspect:	SE
High elevation:	8077	Average slope:	SE

Project Boundary

Comments:

Project boundary: The boundary of the Arapaho Unit consists of mowed lines on the south and north ends of the unit. The east flank of the unit is at the bottom of the hill below Highway 14, while the west flank is a railroad grade/two track road. The Illinois River bisects the burn unit.

A. Vegetation and Fuels: On site fuels are irrigated meadows, perennial grasses and sedges (Fuel Model 1). Fuels north and south of the unit are the same as the the burn unit (Fuel Model 1). Fuels to the east and west of the unit are sage steppe with sparse fuels and grasses (Fuel Model 6).

B. Unique Features: Arapaho National Wildlife Refuge is located immediately south of the town of Walden, CO. There are numerous private residences located near the north boundary of the refuge. The headquarters area of the refuge is located near the center of the refuge and consists of various buildings including staff residences. There are a number of other buildings located on the refuge in various locations, and will be identified in Appendix I as critical holding points.

There are a few other features that are found randomly across the refuge. One is a "Soaphole". This feature is identified by a bare earth surface in the meadows and riparian areas. These areas have very soft soil and will entrap vehicles and foot travelers alike. Another is organic soils which will sustain fire under the surface of the ground. Both of these features will be identified and communicated to the burn crew via the pre-burn briefing. Other features to note would be the fences and irrigation ditches. These will also be identified and communicated to burn crew personnel during the pre-burn briefing.

ELEMENT 5: GOALS AND OBJECTIVES

A. Goals:

Reduce hazardous fuels in grassland fuel type and improve wildlife habitat

B. Objectives:

1. Resource Objectives:

Rejuvenate grasses to improve forage and cover
 Improve habitat conditions for nesting waterfowl, foraging sage grouse broods, and other wildlife by removing decadent grass cover around the Hampton ponds

2. Prescribed Fire Objectives:

Removal of litter layer- reduction of hazardous fuels accumulation in meadow
 Keep within designated boundaries.
 Acceptable range of results:
 Remove 80 to 100% of litter on 75 to 100% of the area
 Keep slop-over's and spot fires within thresholds described in contingency plan

ELEMENT 7: PRESCRIPTION

A. Environmental Prescription:	Acceptable Prescription Range			Outside area at critical holding point
	Low Fire Intensity	Desired Fire Intensity	High Fire Intensity	
Temperature (°F)	30	60	89	minimum acceptable moisture
Relative humidity (%)	59	20	15	
Mid-flame wind speed	1	7	15	
Wind direction (azimuth°)	315 -any	315-any	315-any	
1-hr fuel moisture (%)	11	5	3	3
10-hr fuel moisture (%)	12	7	4	n/a
100-hr fuel moisture (%)	n/a	n/a	n/a	n/a
1000-hr fuel moisture %	n/a	n/a	n/a	n/a
Live fuel moisture (%)	300	120	50	n/a
Duff moisture (%)	n/a	n/a	n/a	n/a
Soil moisture (%)	n/a	n/a	n/a	n/a
Additional Information				
1 hour fuels will be measured the traditional way via the Fire Line Handbook or Fire behavior Field Reference guide based on Temperature, Relative Humidity, Time of day, Month, Percent Slope, & aspect. Aspect will be considered South for all Arapaho units				

B. Fire Behavior Prescription:	Acceptable Fire Behavior Range			Outside area at critical holding points
	<u>Backing</u> Fire Intensity	<u>Flanking</u> Fire Intensity	<u>Head</u> Fire Intensity	
Fuel model(s)	1	1	1	SH1
Rate of spread - chains/hour	2.2 - 10.1	3.9 - 19.7	15.2 - 446.5	0.5 – 1.3
Flame length (in feet)	1.7	1.0 - 2.4	1.9 - 10.0	0.4 – 0.6
Fireline Intensity (Btu/ft/sec)	3 - 19	6 - 37	23 - 844	1 - 2
Probability of ignition - %	41 - 84	41 - 84	41 - 84	41-84
Spotting distance (in miles)	n/a	n/a	0.1 - 0.7	0 – 0.1
<p>Fuel Model 1 makes up the majority of the area to be burned and is considered the main source for continuous fire. There are pockets of FM 3 in most units that will display greater values in all categories. Please see BEHAVE runs for specifics.</p> <p>Prescription is defined as the measurable criteria that define a range of conditions during which a prescribed fire may be ignited and held as a prescribed fire. The plan prescription will describe a range of low (Backing/Flanking) to high (Head) limits for the environmental (weather, fuels, etc.) and fire behavior (flame lengths, rate of spread, spotting distance, etc.) parameters required to meet Prescribed Fire Plan objectives while meeting smoke management and control objectives. Parameters are quantitative variables expressed as a range that result in acceptable fire behavior and smoke management.</p>				

ELEMENT 12: COMMUNICATION

A. Radio Frequencies

Channel	RX	TX	TX Tone		Remarks
COMMAND					
Owl Mtn	172.3750	164.8750	146.2		Primary
Independence	169.6250	163.5750	162.2		Secondary
TACTICAL					
Fire Tac 7	169.2875	169.2875			Primary/Ignitions
Fire Tac 8	172.5875	172.5875			Secondary/Holding
AIR OPERATIONS					
A/G 7	166.8500				Air Ops as needed
OTHER					
REMARKS					
<p>*Frequencies have been assigned by Craig Interagency Fire Center.</p> <p>*In the event of air-medivac via local lifeflight/airmed, the incoming aircraft will meet us on A/G 7 for commo.</p>					

ELEMENT 13: PUBLIC AND PERSONNEL SAFETY AND MEDICAL

A. Safety Hazards:

Firefighter
See JHA for specific hazardous and mitigations: All fire personnel will wear mandatory PPE (Nomex, 8" leather boots, hardhat, leather gloves, eye protection), will possess a fire shelter at all times and will have communications with direct supervisors. ATV's & UTV's may be used. ATV/UTV operators must be certified to operate the vehicles by their employing agencies policy. Operating wildland fire engines on Refuge property is inherently dangerous due to the large amount of wet, soft grounds.
Public
. Public safety issues may be in the form of visibility on public roads within and surrounding the Refuge and Burn area. Roads within the Refuge will be patrolled by refuge staff

B. Emergency Medical Procedures:

In the event of serious accidents or injuries, the burn boss shall be notified immediately. Individuals with medical qualifications (i.e. First Responder, EMT, Paramedic) and helitack qualified should be identified at the pre-burn briefing. The burn boss will initiate on-site response (if not already in progress) and coordinate additional response needs (listed below) through:
Brief Description: In an emergency contact the Burn Boss. The Burn Boss will contact the appropriate facility and request they dispatch an ambulance or medical flight. If air medivac is used, a temporary helipad will be located adjacent to the prescribed burn. Local personnel and/or EMT's present will stabilize the victim. The Burn Boss will: <ul style="list-style-type: none">• Utilize appropriate frequencies to coordinate a response.• Obtain and facilitate nearest EMT's to scene, request a medical unit response.• Convey the nature of the problem, number injured, conditions, location, etc...• Keep log of entire incident.

MEDICAL PLAN

MEDICAL EMERGENCY PROCEDURES
Brief Description: In an emergency contact the Burn Boss. The Burn Boss will contact the appropriate facility and request they dispatch an ambulance or medical flight. If air medivac is used, a temporary helipad will be located adjacent to the prescribed burn. Local personnel and/or EMT's present will stabilize the victim. The Burn Boss will: <ul style="list-style-type: none">• Utilize appropriate frequencies to coordinate a response.• Obtain and facilitate nearest EMT's to scene, request a medical unit response.• Convey the nature of the problem, number injured, conditions, location, etc...• Keep log of entire incident.

ELEMENT 15: IGNITION PLAN

A. Firing Methods & Devices:

All ignitions will be by hand. Combinations of Head strip, Flank strip, spot firing and point source firing may be applicable. Drip torches, ATV torches, fusee's and 'flair pistol' style of firing devices may be used.

B. Ignition Techniques:

Establish 'blackline' on leeward side of unit through strip ignition and backing fire. Connect leeward black line to flanking fires along unit boundaries into the wind and fill in main unit with head fires as appropriate. Finish or close unit with final ignition head fire on windward side of unit

C. Patterns & Sequences:

1. The first igniter (or team) will light a backing fire along leeward perimeter, perpendicular to the wind direction and will stop where the burn unit boundary turns back into the wind.
2. The second igniter (or team) will light a flanking fire on the perimeter, burning into the wind along the flank opposite where the backing fire ended. A second igniter (or team) will begin a flanking fire into the wind on the opposite side of the second ignition team.
3. Coordination between the 2 igniters and the ignition specialist will establish head fires at designated intervals between the two flanks. Head fire strips will be approximately 250 meters apart. The holding specialist will monitor the fire perimeter to ensure that fire does not jump the established holding lines (roads, dikes, impoundments)
4. Ignitions specialist will assure the perimeter edge on the windward side of the unit is burned using a head fire to complete the unit.

D. Ignition Staffing

Ignitions will be as few as 1 person and as many as 6 depending on the stage of the lighting, the difficulties in holding and fire behavior. Flexibility in ignitions is subjective to the Burn Boss and they're subordinates in Ignitions and Holding.

ELEMENT 16: HOLDING PLAN

A. General Procedures for Holding:

Holding will generally be accomplished by engines minimum staffed with 2 personnel each. During the initial phase of igniting the leeward side of the unit, one engine may be placed downwind at an appropriate distance to monitor for mid to long range spotting. One engine will accompany each flank during the ignitions phase as described in #2 of "Patterns and Sequences" section on previous page. As ignitions increase and the width or size of the black increases down wind from active igniting emphasis will be to hold the flanks or sides of the active units. ATV' /UTV's or engines will patrol the perimeter of the units as advised by the Burn Boss or Holding Boss. One engine or ATV/UTV may also patrol downwind of the active unit to monitor for spotting and smoke characteristics such as column shape, height and general dispersion patterns. Slopovers and spots will generally be aggressively and safely suppressed in a direct attack manner. Fire outside of the primary unit, BUT still within the project boundary may be allowed to burn when a direct attack suppression action is unsuccessful. These fire will be held at the next available break (dike, road, open water, etc) by methods such as, but not limited to, back firing, wet lining, dozer or hand lines, etc.

*Due to the reliance and the use of engines as the preferred resource for holding, water sources for initial filling and subsequent loads will be established by the RXB2, Agency administrator and Holding boss prior to the implementation of the test fire. There should be a minimum of two locations identified per unit implemented and at least one location that is considered central (HQ area). Refill locations will be either by drafting or by the use of a pump set-up at the location prior to ignitions.

B. Critical Holding Points and Actions:

Critical Holding points are to the North and East of each unit. These areas have very little fuels but are the area an escape is most likely to occur. Ignition sequences will be done deliberately slow in these area's to accommodate for closer watch on spotting and slopover potentials. General actions would be to first directly attack any unwanted fire as safely and aggressively as possible and secondly back off and use the man-made and natural barriers as containment lines.

C. Minimum Organization or Capabilities Needed:

TBD

D. Mop-up and Patrol

Mop-up and patrol will be conducted by Rx burn crews the day of ignition where applicable. Any active burning, smoldering or smoking fuels within 50 feet of unit boundaries will be moped up the following burn period after ignition. Any active burning, smoldering or smoking fuels within 100 feet of the unit boundary will be mopped-up within 72 hours of unit Rx burn completion.

ELEMENT 17: CONTINGENCY PLAN

A. Trigger Points:

If any of the following situations occur, contingency action will take place:

1. Fire jumps the onto non- FWS lands
2. More than three simultaneous spot fires and/or slopovers occur, each greater than 1 acres in size

B. Actions Needed:

Attempted Contain and Control measures as instructed by the RXB2 will be implemented until deemed unsuccessful. Fire outside of the Arapaho NWR will be declared Wildfire and conversion to Wildfire will be declared though CIFC.

If the contingency actions are successful at bringing the project back within the scope of the Prescribed Fire Plan, the project may continue. If contingency actions are not successful by the end of the next burning period, then the prescribed fire will be converted to a wildfire.

C. Additional Resources and Maximum Response Time(s):

Resource	Agency & Location	Maximum Response Time	Conformation of Availability*	
			Yes/No	Date

* To be completed within one day of the burn and adjusted during course of extended burning conditions

ELEMENT 18: WILDFIRE CONVERSION

A. Wildfire Declared By:

Trigger Points for Conversion to Wildfire:

- 1 If undesired fire (slop-overs and spot fires) occurs and burns over 1 acre on private property despite an appropriate response from on-site resources.
- 2 The fire burns outside prescribed fire's boundary, on USFWS or BLM lands, for more than 30 minutes with an suppression effort from on-site resources. This does not include fire in a pre-determined MMA.
- 3 Undesired fire containment requires contingency resources.
- 4 If lives are threatened or if private property, resources, and other structures are threatened regardless of pre-determined time and size containment guidelines.
- 5 It is immediately obvious that undesired fire will not be contained with on-site resources.
- 6 Burn Boss decides to convert the prescribed fire to a wild fire for a variety of reasons based on his/her experience and intuitive sense.

B. IC Assignment:

IC Assignment and Command Structure:

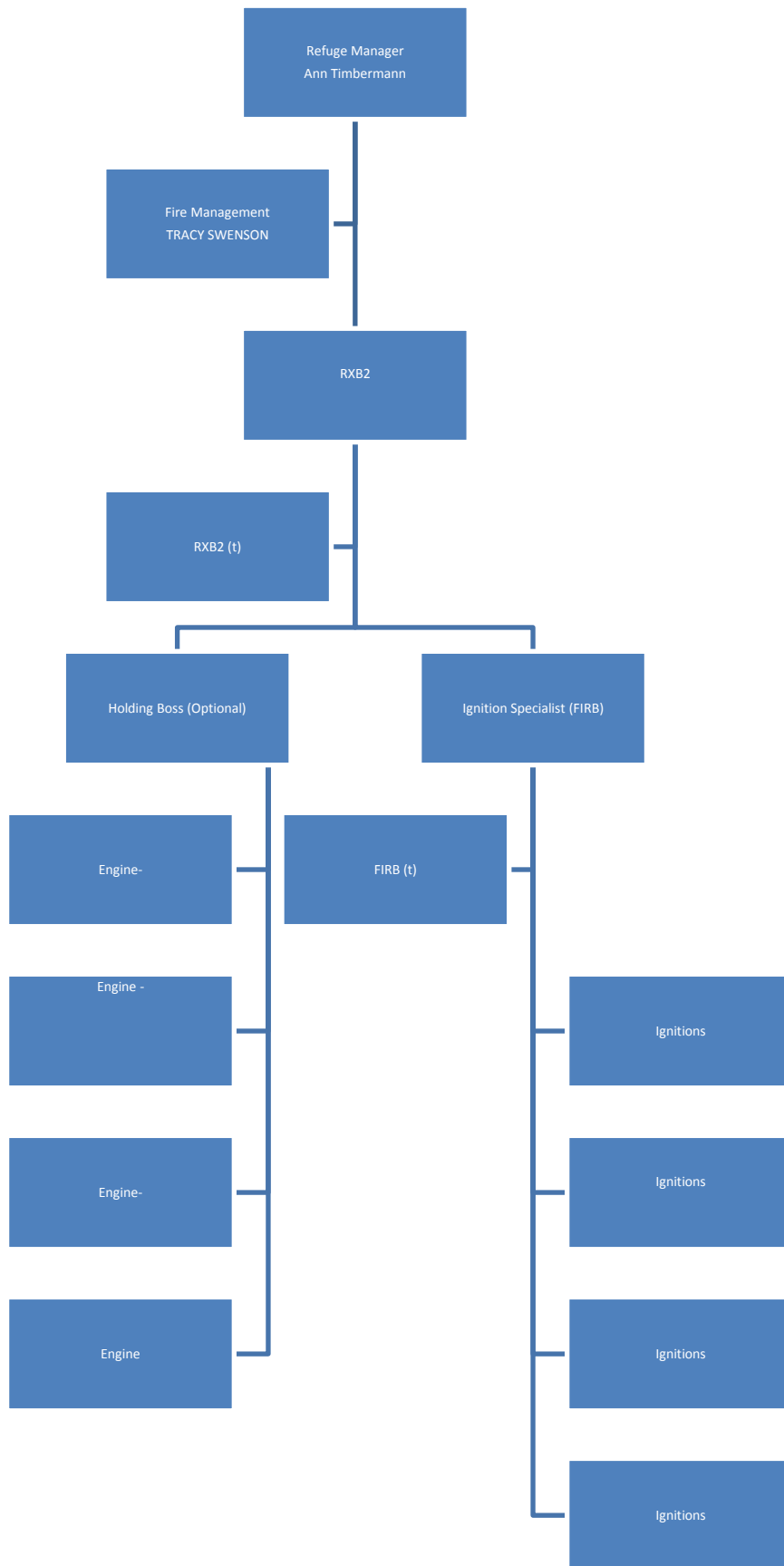
- Burn Boss will assume the role of Incident Commander until relieved by a higher qualified person or one of at least the same qualifications.
- The Holding Boss will assume the role of Operations on the wildfire until relieved by the same or higher qualified person.
- The fire may be split into divisions depending on the complexity of the escape and where it happens. The IC and Operations will make this determination and forward the information to the ground forces and make assignments as appropriate and personnel are qualified (determined in pre-ignition briefing).

C. Notifications:

The Prescribed Fire Burn Boss/IC will notify CIFIC the Zone FMO and Refuge Administrator of the escape and identify himself/herself as the IC. The Zone FMO will then notify the Regional Fire Coordinator. CIFIC will notify contacts listed on the notification plan of the escape and the current situation.

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

A safe and efficient tactical response will be used in order to flank the fire with resources until the forward rate of spread is stopped. The containment strategy will be to utilize safe anchor points and create direct fire line where feasible and indirect fire line, including burning out, depending upon location of natural barriers and roads. The FMO and/or IC, and Agency Administrator may develop a WFDSS which will determine a management response to the escaped fire. The WFDSS process is required when a wildfire escapes initial attack.



Arapaho Unit Map



U.S. Fish & Wildlife Service

Arapaho National Wildlife Refuge - Proposed 2015 Prescribed Burn

Jackson County, Colorado

