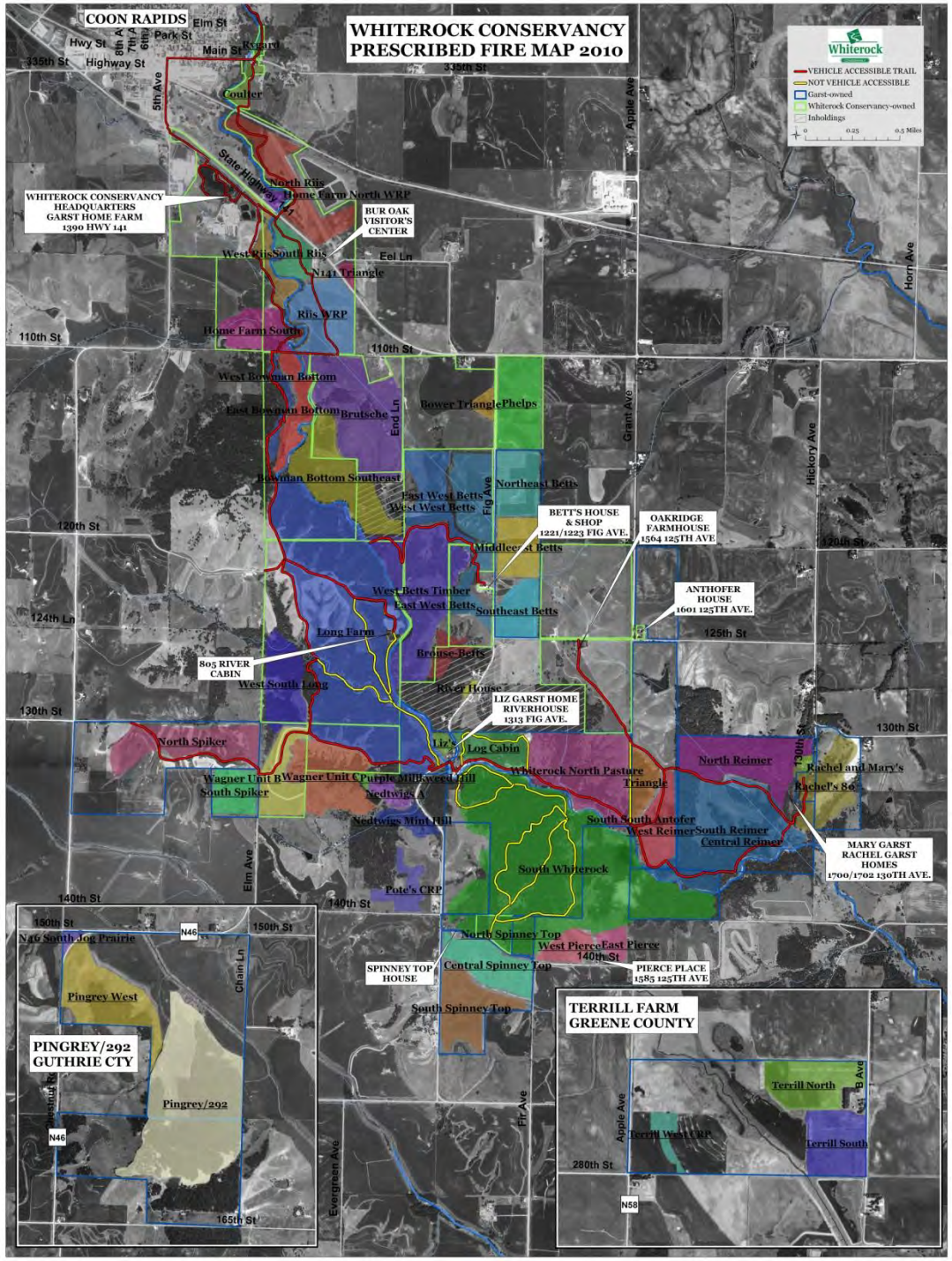
Prescribed Fire …. The other tool in savanna restoration.



Burn Unit Map
Whiterock and neighbors

Changes over time:
Added neighbors
Bigger units=more efficiency
Still prepping new burn lines
  along adjoining properties.
  New woodland lines = $$$
Smaller units to get
  better smoke management
  improve safety
  diversify management

Line Preparation Equipment

Tractor with batwing bush hog

Flail silage chopper with
adjustable side chute

Self-propelled walk-behind brush mower

& String trimmers (wood fence posts)
Leaf Blowers (oak leaves)
Rakes (twigs)
Chain Saws (deadfall)

Burn Line Lessons Learned:

Good burn lines are worth it … with them, you can burn in dry conditions & 35 mph gusts … when Mother Nature would have done it.

In woodland fires along pasture or prairie, put the burn line far away from the woods and make very wide grass burn barriers so you do not have to worry about sparks.

Avoid undulating burn lines … they are time consuming & dangerous.

Where quarters are tight, cut dead trees down along the line, before the burn. Otherwise, you will have to stay up all night checking for sparks or cut the burning tree down, usually in the dark.

Pile larger deadfall along the burn line. Otherwise you will end up extinguishing it over & over.

Put the piles at least 50’ inside, else outside the line.

Burn problematic brush piles in the winter.

Make burn lines machinery accessible. Water backpacks are brutal, and reduce potential crew size. Inaccessible lines are hard to patrol and very hard to deal with in emergencies.

Rake grass, leaves or sticks to the outside of the burn line. If debris is left on the edge of the fireline, it will smolder which adds risk and takes time.

Weed eat around all wood fence posts, young trees you want to protect, etc.

If you mow or weed eat too early, you will have to do it twice. If you do it too late, you will have to rake the fluffy cut grass.

Leaf blowers are very labor efficient compared to rakes. You can prep for leaves well in advance of the burn.

Use existing road ways and natural barriers (the river, ponds, grazed pastures) where-ever possible.

Burn Units by Wind Direction

Completed=C,Fall 2011 = F, Spring 2012 = S

		N	NE	E	SE	S	SW	W	NW	When
West Wagner	WRC									?
East Wagner	WRC									?
West Betts CRP	WRC									?
Nedtwig/ Wagner Bowl/S. Long Farm	WRC & Henning	X- Pote	X+	X	X	X Dickman	rd	rd	rd	C
Mint Hill	Henning	X-	X+	X	X	X Dickman	rd	rd	rd	C
Heater	Liz				X	X+	rd	rd	rd	C
North Whiterock	Woods	X	rd	rd	rd	X	X	X+	X	F
South Whiterock	Woods	rd	rd	rd	X	X	X	X+	rd	F
Bowman Bottom hillside	WRC	X+	X	X				X- Stablin	X	F
Remer	Woods	X	X	X	X	X	X- Mary G. & Rachael G.	X	X	F
Jens (MCM)	WRC	X+	X	X-				X	X	F
West Betts Timber	WRC	X	X	X		w/loft	rd	rd	rd	F
Betts/ Brouse	WRC & Brouse	X	X	X+	w/loft	x	X	rd	rd	F
Liz Garst	Liz	rd	rd	X	X+	rd	rd	rd	rd	F
Anthoffer Triangle	Woods	X	X	X	X	X	X	X	X	F
South Riis Farm	WRC	X+	X+	HF						F
Rachel's 80	Rachel	X	X	X	rd	rd		X-	X	F
Kame	WRC	X	X+	X				rd	rd	F
Long Farm	WRC	X+	X+	X			X	X	X	F
Home Farm	WRC	X+	X	rd					X	F
Bowman Bottom/ Bottom		X+	X	X			W/Loft	W/Loft	X	S

weather.gov

National Weather Service Forecast Office

Des Moines, IA

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Point Forecast: 5 Miles SSE Coon Rapids IA
41.81N 94.65W

Last Update: 7:45 am CST Dec 4, 2012

Tabular Forecast

[hide menu] | Font Size: A A A XML

Weather Elements	Fire Weather	Probabilistic Forecasts (Experimental)
☑ Temperature (°F)	☐ Mixing Height (x100ft)	Quantitative Precipitation 6-hr info: ☐ 0.10 ☐ 0.25 ☐ 0.50 ☐ 1.00
☑ Dewpoint (°F)	☐ Haines Index	Snowfall 6-hr info: ☐ 0.1in ☐ 1in ☐ 3in ☐ 6in ☐ 12in
☑ Wind Chill (°F)	☐ Trans. Wind mph	
☑ Surface Wind mph	☐ Vent Rate (x1000 mph-ft)	
☑ Sky Coverage		
☑ Precipitation Potential		
☑ Relative Humidity		
☑ Thunder		
☑ Rain		
☑ Snow		
☑ Freezing Rain		
☑ Sleet		

48-Hour Period Starting: 11am Tue, Dec 4 2012 Submit Back 2 Days Forward 2 Days

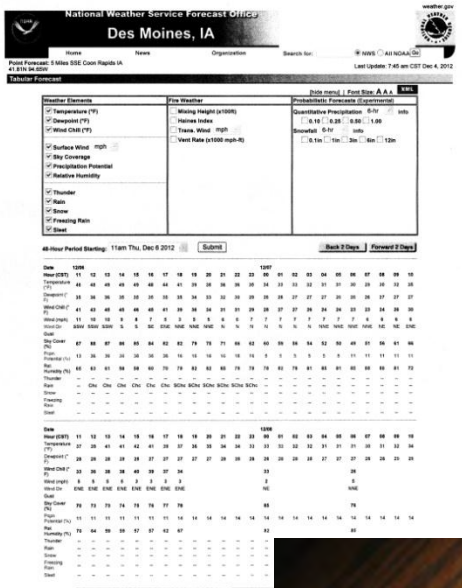
Date	12/04													12/05									
Hour (CST)	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10
Temperature (°F)	49	55	58	58	57	54	49	46	42	40	38	37	35	34	33	31	31	29	29	28	27	29	33	38
Dewpoint (°F)	26	28	26	25	23	24	26	27	27	26	26	26	26	26	25	25	24	24	24	23	24	24	24	26
Wind Chill (°F)	47						47	43	39	37	36	34	31	30	29	26	26	24	23	21	19	20	24	30
Wind (mph)	8	9	10	10	10	9	8	6	5	5	3	3	5	5	5	5	5	5	6	7	8	10	11	13
Wind Dir	W	W	W	W	W	W	WNW	WNW	WNW	NW	NW	NNW	NNE	NE	ENE	ENE	E	E	ESE	ESE	ESE	SE	SE	SE
Gust																								
Sky Cover (%)	13	13	14	17	18	16	12	10	12	15	18	21	24	25	25	24	23	23	22	22	23	27	30	34
Pcpn. Potential (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rel. Humidity (%)	44	35	29	28	27	31	40	47	55	57	62	64	69	72	72	78	75	81	81	81	88	81	69	62
Thunder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rain	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Snow	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Freezing Rain	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sleet	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	12/06																							
Hour (CST)	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10
Temperature (°F)	43	47	50	52	52	51	50	48	46	46	45	44	44	43	43	42	42	41	41	41	40	41	43	44
Dewpoint (°F)	27	28	29	29	30	31	31	32	32	32	33	33	33	33	33	33	33	33	33	33	33	34	34	35
Wind Chill (°F)	36	41	44				44	42	39	39	37	36	37	36	36	34	35	33	33	33	32	33	36	38
Wind (mph)	15	16	17	18	20	18	18	17	17	17	18	17	16	15	15	15	14	14	14	14	14	14	14	13
Wind Dir	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	S	S	S	S	S	S	S
Gust	21	23	25	26	28	26	25	24	24	25	25	25	23	21	21	21	18	18	18	18	18	18	18	
Sky Cover (%)	37	39	41	46	50	54	59	61	61	62	62	63	63	63	65	68	72	75	79	81	81	83	84	86
Pcpn Potential (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13	13	13	13
Rel. Humidity (%)	53	47	44	41	43	46	48	54	58	58	60	65	65	67	67	70	70	73	73	73	76	76	70	70
Thunder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rain	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Snow	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Freezing Rain	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sleet	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

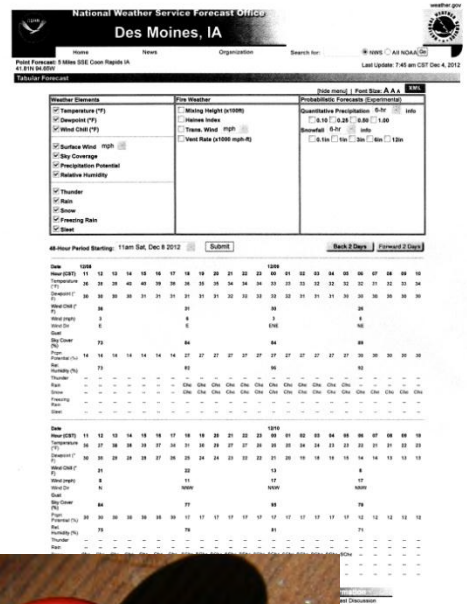
Radar and Satellite Images | **Additional Forecasts & Information**

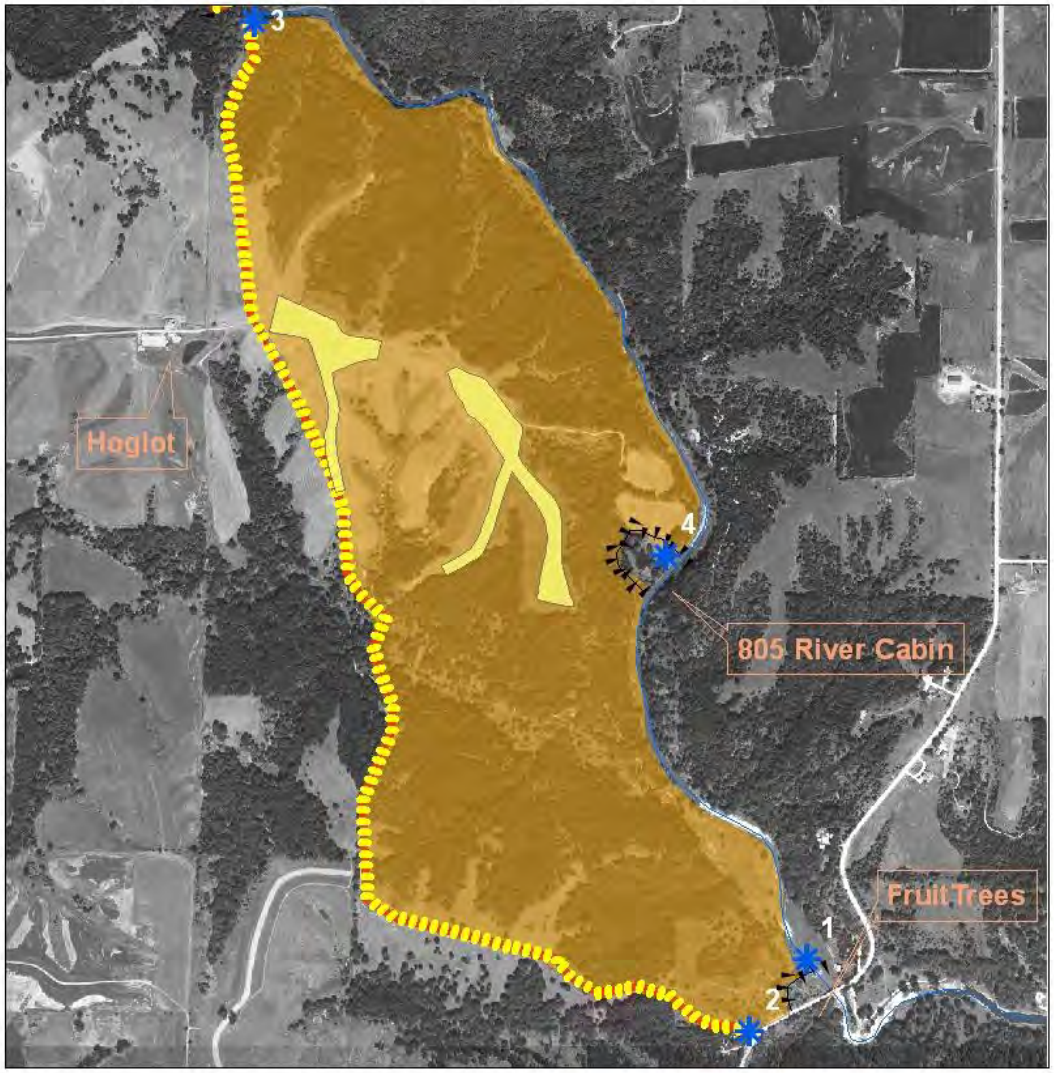
International System of Units | Forecast Discussion
7-Day Forecast | Hourly Weather Graph

Tabular Weather Forecast for 41.81N 94.65W Page 1 of 2



Tabular Weather Forecast for 41.81N 94.65W Page 1 of 2





Whiterock Conservancy
Long Farm Prescribed Fire
Ignition Sequence
N/NW/SE Wind

Legend

- Long Farm CRP
- Long Farm Burn
- Head_fire
- Back_burn
- Ignition

N

0 0.125 0.25 0.5 Miles

SOURCES OF EMERGENCY ASSISTANCE Call 911 11-29-11

This burn is in the Coon Rapids Fire District, which is dispatched through Carroll County. However, the physical location is Guthrie County. Make sure you get to Carroll County Dispatch.

Non-emergency numbers:

Jeff Hachmeister, Coon Rapids Fire Chief (712) 830-4688 (cell) (712) 999-5182
Dispatchers: Guthrie County: (641) 747-2214 Carroll County: (712) 792-4393
Medical: St. Anthony Regional Hospital, 311 S. Clark, Carroll (712) 792-3581
Coon Rapids Ambulance Service: (712) 999-5713
Nearest Phone to Unit: Liz Garst 712-684-5240
WRC headquarters at Garst Home Farm (712) 684-2697

NAME OF BURN: Long Farm Called in by Chris Troendle
LOCATION: West Side of River, North of the River House (1313 Fig Ave.)
MAJOR ACCESS POINTS;

WRC Main Trail Access … on north side of Fig Avenue, west of the River
Wagoner Gate … 140th West from Fig … then north
Long Farm Gate … 120th East from Dogwood

Liz's **Crew**				**Matt's Crew**		
Drip Torch 1	Al			Drip Torch 1	**Matt**	**712-210-0869**
Drip Torch 2	Jason	712-210-6960		Drip Torch 2	Doug	712-830-4444
Camo Truck	Bob	712-830-5487		War Wagon	Darwin	712-210-6960
Liz's Gator	**Liz**	**712-210-5240**		Beths Gator	Beth	515-339-4279
Mary's Ranger	Eric			Rachel's Mule		
ATV	Gary	712-304-0904				
				Electric Gator	Chris	563-419-4158

Burn crew, Fall 2011

Pre-burn meeting. Review plans and assignments.

Utility vehicles: 20-30 gallon tanks with 12 volt pumps.

Typical deployment: two crews, each with
- primary and assistant drip torch operators
- pickup truck, with 200 -250 gallon tank
  - Briggs & Stratton engine with transfer pump
  - 1 ½” hose fitting (to refill utility vehicles)
  - 150 foot of 5/8 inch hose on reel
  - racks for hand tools
- utility vehicles – 2 or 3 per side
- 2 road crew if needed
- flappers as needed/available

Spare Water Truck with transfer pump, 2” hose and 1” hose.

Equipment List:

For every person:
Dust mask and goggles
Cotton, wool or fire gear only

For each team:
Drip Torches (2)
Diesel and gas cans with fuel
Water back packs (2-3)
Flappers (3)
Rakes … iron and spring tooth
Leaf blower
Chain Saw, chains, chaps, fuel
Axe
Wire Cutters
Basic Mechanics Tools
First Aid Kit

Traffic vests and flags
Smoke Ahead signs
Extra car for emergencies
Tractor and disk in reserve


CAUTION
SMOKE
AHEAD

We use three communications methods, at the same time.

1. Marine band or **high quality** radios … mounted in trucks and some ATVs. Advantages … most everyone can hear. However, you need line of sight, and in rugged terrain that is often a problem.

2. Cell phones. They usually work when out of line of sight, though sometimes not. Everyone has them. Share phone numbers during pre-burn meeting.

3. Couriers are reliable. Use a patrol ATV to pass messages among burn team members and between burn teams, while assessing conditions.


AVOID INJURY
FROM EXPLOSION
DEERE

Safety Lessons Learned:

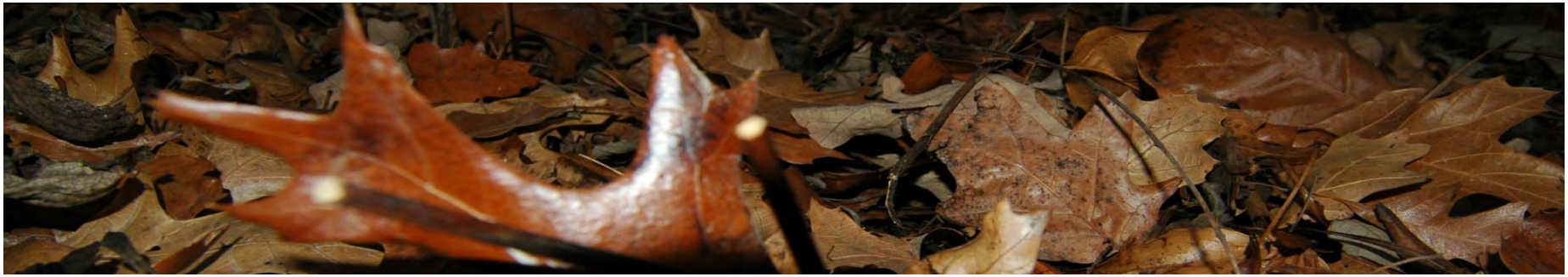
Try not to learn the same lesson more than once. Pay attention, acknowledge & discuss problems, then correct them.

Do not start too early in the morning … else the headfire will burn through your back fire.

Do not run out of water … know how much is left. Fancy high pressure equipment runs out of water quickly.

Bring along all the equipment …even the wire cutters and water back packs, ready to go … even if you think you do not need it. You never know when a splash-over will happen.

Bring along spare parts (spray wands), tool kit and a mechanic if at all possible. Equipment breakdown is bad news.



Make sure your equipment works and your crew is ready to roll before you light the match.

Do not take your dog.

Be prepared for the un-expected … burning rabbits, fire that makes its own weather, equipment break- downs.

Be brave enough to call the burn … when the water is freezing up, or the RH is lower than forecast, or the crew is too small or when the fire will not achieve burn objectives.

Bring along a passenger car for use in case of emergency so you do not have to take fire equipment off the line.

Assuming good burn lines, low RH is the weather factor most likely to get you in serious trouble. The sparkiness of low RH will catch trees on fire, at long distance.

Burn out corners.

Avoid racing the fire:

1) Fire likes to run up hills and with the wind. Continuous lines are easiest, but switching directions to go down rather than up steep hills, or into the wind rather than with it, should be considered.

2) For long thin burn units, prepare a break into two units, and use it if needed, rather than race to enclose the burn unit.

Do not plan a vacation until 10 days after the burn. If wind direction changes and wind speeds get high, a timber can re-light days after the initial burn.

It is easier to cut down and put out rather than keep close watch & suffer worried sleep.

Never allow more than 40% novices or beginners on your crew.

Some people just cannot burn due to respiratory issues …people with asthma, allergies to cigarettes, etc should be actively discouraged from participating.

Burn around hazards, and do not rely on burn lines alone. And, do not put firewood piles adjacent to portapotties!

Our record since 1993, approximately 16,000 acres:

1 burn worth a doctor visit, a few singed eyebrows, occasional burns from wood sparks and numerous “rosy faces”. A few visits to the doctor because of respiratory problems.

1 call to the fire department, called off after 5 minutes.

1-2 splash-overs or escapes per year, once a really scary one which threatened a neighbor’s house. (See above.)

Loss of a firewood pile, **all** my father’s brush-built turkey blinds, 2 interpretative signs, wood and plastic fence posts, polywire, one wall of a portapotty and the paint job on the door of a pickup.

An unnamed utility pole is darker than it used to be.

We have occasionally annoyed the town & neighbors with smoke.

We have gone far too long with not enough sleep way too often.

We have chain-sawed down too many burning trees at night, and

We are lucky!

Timber Burn Lessons

The first burn of a wood-land is lousy. Each time, it will burn better.

Overgrown timber is hard to torch. Because of lack of light, there is no herba-ceous layer to carry the fire.

Oak leaves are the best fire fuel … all curly and crispy.
Be patient in the fall, wait for the oak leaves to come down.

Do not bother to burn in marginal conditions. One good burn is worth several mediocre burns.

Lay interior fire lines, but do not overdo it. Patchiness & unburned refuges are important, especially to insects and invertebrates.

Pasture Burn Lessons:

Grazed pasture is very hard to burn. It is feasible only when it is truly dormant. Or, take the cows off early to leave fuel.

Grazed pasture makes a great burn line.

Pastures are re-invigorated with fire. Even brome, alfalfa and clover can be renewed by fire.

Burning increases pasture diversity, and knocks back shrubs and cedar.

Electric polywire fence melts.

Fire helps mushroom hunting.

Oak sprout in prairie reeconstruction area.

The ridgeline was previously cleared, cropped, sprayed and seeded to brome grass, with occasional wolf trees left behind.

Although burned several times, the older honey locust have not been touched, although young locust, and brush are diminished. There are oak sprouts. Note prairie on the point.

Re-appearing native plants on the nose of the ridgeline

Native grasses at the end of open area on the point.
Note the cedars.

Dead and partially burned cedar trees on the point. With more sun shine, herbacious layer is thicker, which will result in a better burn next year.

Partially burned cedar, with herbaceous layer/fuel growing underneath. With successive burns, flame lengths increase and burn coverage improves.

Fire is a ram-rod!

After 12 burns, just now past the wall of cedar and locust. Slow.

Frequently burned ravine, no cutting

Often-burned ravine

Whorled milkweed in frequently burned area

Diverse understory on frequently burned ridge line

Adjacent area we cannot burn because of lack of burn line.
Lower diversity and more stems.

Diverse understory on frequently burned ridge line

Burned several times.

Adjacent area not burned.

Burned several times.

Oak savannah restored by our neighbors … Jim Nedtwig and Beth Henning. This piece has had it all … tree thinning, fire, slash management and fantastic native regeneration.

Please visit Whiterock: accommodations, camping, trails, canoes, JD Gator rentals, interpretative signage, fishing ponds, history talk, nature tours, dark skies and more. www.whiterockconservancy.org

Oak Savanna Restoration At Whiterock Conservancy

Guthrie County, Iowa

Presentation by
Liz Garst
lizgarst.lg@gmail.com

Board Director
Burn Master
& Volunteer
at Whiterock Conservancy

More Information
www.whiterockconservancy.org