Shaw Nature Reserve – Prescribed Fire Summary
Fall 2021 – Spring 2022

Figure 1: Big Prairie – 11.22.2021 – Photo Credit: Tilda Adams

Mike Saxton | Manager | Ecological Restoration & Land Stewardship | April 2022

Each spring brings forth renewal and rebirth with verdant green punctuated by colorful blooms. After our dormant season fires, spring is a time for hope, with sun-warmed blackened soil triggering green-up and flowers earlier than areas without fire. After more than two long years of COVID and with all the other strife and hardship in the world, we welcome the longer days, the warmer temperatures and the reawakening landscape.

This report celebrates the important work that we do on and for the land. With the help of volunteers, partner agencies, and donor support, we continue to build and expand our burn program and to get fire on the ground in new places around the Nature Reserve. With each successful burn, we are one unit closer to bringing all 2,400 acres of Shaw Nature Reserve into active management. Thank you for reading, supporting and sharing.

2021 – 2022 vitals:

Acres burned – 560

Burn days – 13 including 6 in fall 2021, tying most successful fall season on record

Units burned – 11 including 2 first-time burned woodland units south of the Meramec

Figure 2: Backwoods Unit (Southside of Meramec) – 2.15.22 – First ever fire in unit. - Photo credit: Mike Saxton

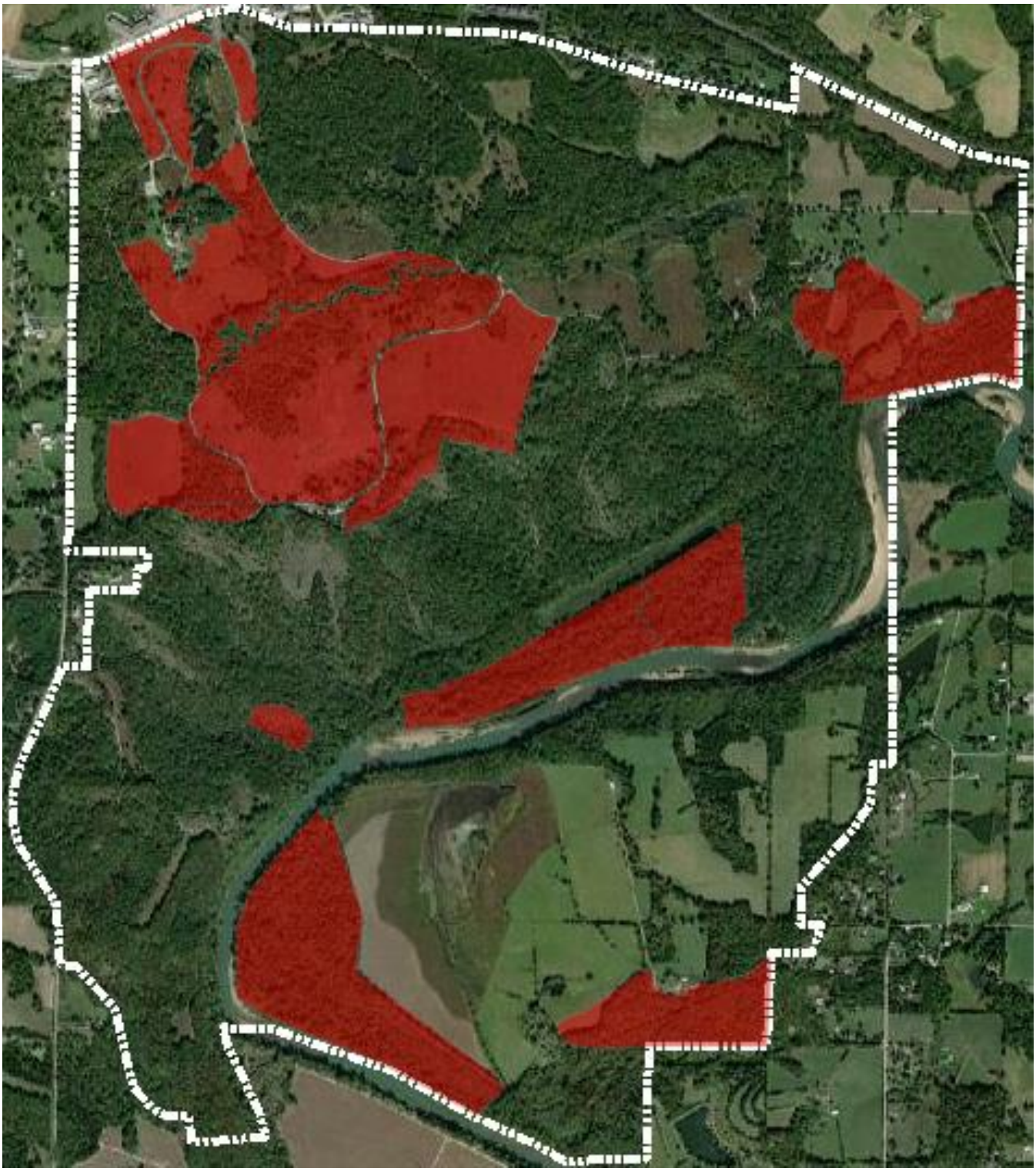

Figure 3: 560 acres of 2021-2022 prescribed fire captured in our Restoration Web App

Table 1: 2020-2021 prescribed fire data

Unit	Date	Staff	Vols	Temp	Rh	Wind	Wind	Vent	Start	End	Acres
Black Lining	11/17/2021	6		57	75	20	NNW	33,000	2:00	3:30	3.7
River Bottoms	11/18/2021	9	4	46	29	24	WNW	120,000	11:15	3:45	39.9
Big Prairie	11/22/2021	9	1	40	29	7	WNW	19,000	11:45	3:00	66.1
State Natural Area	11/23/2021	7		52	34	8	S	40,000	11:45	3:00	88.2
Visitor Center Prairie	12/1/2021	6		65	38	9	W	24,000	1:30	3:00	5.0
Bill's Meadow	12/2/2021	8	5	72	34	8	NW	14,000	12:00	4:00	104.0
Lumbershed Prairie	12/21/2021	8		51	41	9	W	39,000	1:30	3:30	34.1
Cypress Lake	1/10/2021	11		38	40	11	NW	45,000	12:45	3:30	23
Research Plots	1/31/2022	5		51	36	9	S	36,000	1:00	3:30	0.2
Bascom Prairie	2/15/2022	14		48	35	6	NNW	18,000	12:15	3:30	67.5
Backwoods	2/15/2022	10	3	65	31	11	SSE	55,000	1:00	3:45	35.4
River Bottoms	3/2/2022	6		78	21	22	SW	88,000	1:30	3:30	27.7
Freund Farm Woods	3/3/2022	13	2	58	41	10	ENE	42,000	11:45	4:00	59.2
Morton Glade	3/9/2022	7		48	46	6	NNW	15,000	1:45	3:30	5.4
Wildflower Garden	3/17/2022	8	1	75	30	15	S	35,000	1:00	3:30	0.5
TH Little Blue Stem	3/28/2022	4		55	40	10	E	40,000	12:45	1:30	0.1
											560

Figure 4: Maria Lommel lights head fire of VC prairie – Photo credit: Vivian Bouse

Lessons Learned

We always try to take something away from each fire and below are lessons learned from our 2021-2022 fire season.

Freund Farm – **3.3.2022** – bulldozer piles near fire break

With approval, our farm tenant bulldozed open grown cedars into two separate piles. At the time of the burn, the piles were over 1 year old. The piles were noted in the crew briefing with the plan to attempt to keep fire out of them but not to worry if they burned, as winds were forecasted to blow into the unit for 2 days. Both piles ended up burning, big and hot. Embers from one pile started a dozen spot fires in partly green adjacent fescue fields. Our crew response was well coordinated and ended up as a low-risk but fast paced whack-a-mole training experience. Ample water was available from an adjacent spigot and multiple suppression resources were key. We greatly appreciated the increased capacity of two additional UTVs with 75-gallon pumper units.

Bill's Meadow – **12.2.21** – Research data loggers

Research is critically important to informing habitat restoration practices and for supporting management decisions. Some research designs call for fire inclusion/exclusion and often there are monitoring stations within a burn unit. We had five data loggers that we mowed/weed whipped around before the burn. They were visible from our gravel road firebreak. We had ample water resources. With heavy prairie fuels and low relative humidity, we had trouble protecting the loggers. Ignition operations slowed to a crawl and we used tons of water, eventually needing to refill multiple units. In the future, we will ask that the loggers be removed before the fire.

Figure 5: Technicians Maria Lommel, Scott Kruger and Alex Conley prepare to prep fire lines - Photo credit: Mike Saxton

Table 2: Nine years of fire with units burned per season, acres per season, and total numbers of burns per unit. Asterisk denotes partial unit burned.

Unit	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	TOTAL
Pinetum						1	1	1	1	1	**5**
VC Prairie	1	1	1	1	1	1	1	1	1	1	**10**
Bascom Prairie		1	1	1	1	1	1	1	1	1	**9**
Wetland Prairie	1			1	1		1		1		**5**
Central Prairie		1	1	1		1		1	1	1	**7**
Bill's Meadow/CF	1			1	1	1		1		1	**6**
Wetland Bank					1		1	1	1		**4**
W. Dogwood Meadow	1				1			1		1	**4**
Lumber Shed Prairie		1			1		1		1	1	**5**
Pine Savanna						1			1		**2**
West Savanna		1	1	1	1	1		1	1		**7**
Trail House		1		1		1			1	1*	**4**
Dana Brown Woods		1		1		1			1	1*	**4**
West Morton					1			1			**2**
East Morton					1	1		1		1*	**3**
IMLS Woods					1	1			1		**3**
Freund Farm South							1	1		1	**3**
Backwoods Unit										1	**1**
State Natural Area										1	**1**
Units per Season	**4**	**7**	**4**	**8**	**11**	**11**	**7**	**11**	**12**	**12***	

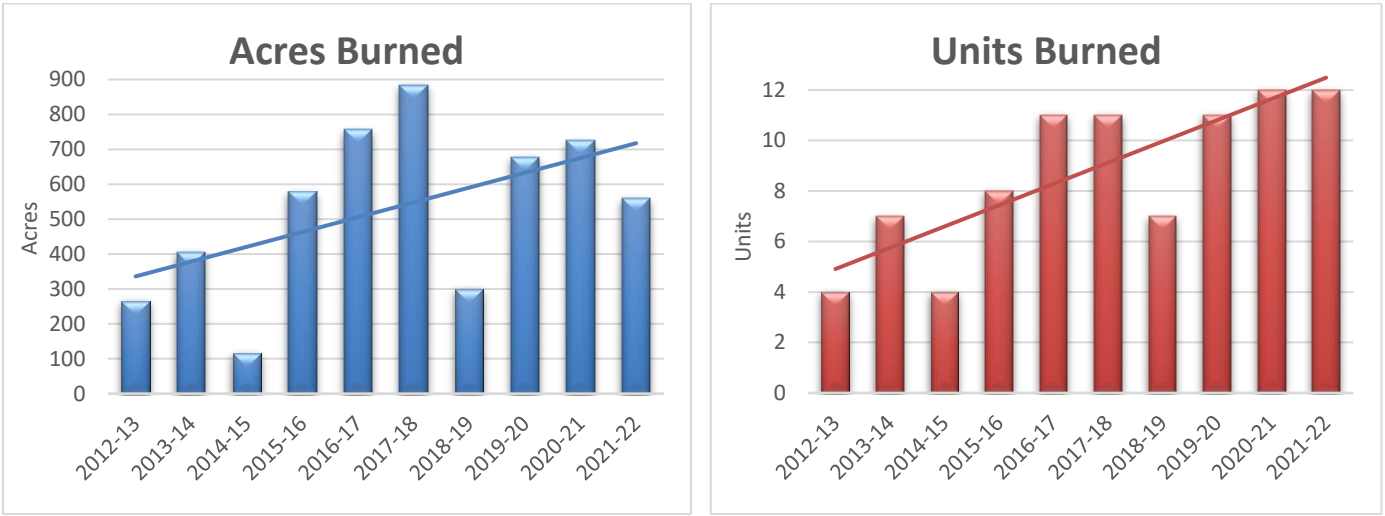

Figure 6: 10 years of prescribed fire data with clear trend line of progress

Partners & Equipment:

In December of 2021, Shaw Nature Reserve entered into an exciting partnership with Quail Forever/Pheasants Forever and the Missouri Department of Conservation. A 3-person crew was hired, with plans to conduct prescribed fire, invasive species control, and other management at SNR and on private & public lands. This partnership increases capacity to get more good and needed fire on the ground across the region.

In addition to a larger fire crew, the Nature Reserve recently purchased two new 75-gallon fire suppression units that slip into the back of a UTV. Over the course of the last 6 years, we have increased our suppression capacity to eight mobile water units and 900 gallons.

Prescribed fire continues to be a vital tool in our efforts to maintain and enhance native biodiversity. Investing in staff and equipment pays long-term dividends for the land.

*Figure 7: **Top**: SNR technicians (L) Scott Kruger and (M) Alex Conley pose with QFPF crew lead (R) Dylan Jacobs.*
***Bottom**: Two new slip in UTV pumper units purchased with support of the Bellwether Foundation.*

SNR restoration technicians are currently supported through grant-funded support from the Robert J. Trulaske Jr. Family Foundation, Bellwether Foundation, and funds administered by The Conservation Fund from an agreement between Enbridge Pipelines and the U.S. Fish & Wildlife Service to mitigate impacts on Midwestern bat habitat.

The SNR Ecological Restoration Endowment also continues to grow, led by support from the Edward K. Love Conservation Foundation and the generosity of private donors, to ensure that staffing capacity is sustained for the long-term to provide exemplary stewardship of the Nature Reserve's natural communities.

Figure 8: Crew ignites head fire along the Loop Road – 104 acres – 12.21.22 – Photo credit: Tilda Adams

Figure 9: Big Prairie – 11.22.21 – 66 acres – Glenn Beffa ignites – Photo credit: Tilda Adams

Figure 10: Big Prairie – 11.22.21 – 66 acres – Maria Lommel patrols the Loop Road. – Photo credit: Tilda Adams

Figure 11: Mike Saxton rakes flames away from research data logger. – Photo credit: Tilda Adams

Figure 12: Bill's Meadow – Volunteer Dean Barnes ignites head fire – 104 acres – Photo credit: Tilda Adams

Figure 13: Volunteer Bill Miller suppresses flames – Bill's Meadow 12.2.21 – Photo credit: Tilda Adams

I welcome any feedback on the report or on our fire program. Please contact me with any questions or comments. – Mike Saxton msaxton@mobot.org