Appendix A.

5-Year Draft Plan
Fire and Fuels Management
in the Red Cliffs Desert Reserve

Prepared by Washington County HCP Technical Committee

June 13, 2024

Background & Introduction

At the November 2023 HCAC meeting, BLM, UDWR and County officials presented new information regarding fire prevention and restoration activities in the Reserve. Through its Watershed Restoration Initiative (WRI), and in collaboration with HCP funds, UDWR recently treated state lands with Rejuvra to reduce the threat of fire from Green Springs and east towards I-15. In recent months the BLM also approved a new weeds management plan for NCA. With these new tools available, HCAC members felt inclined to address the ongoing fire threat by shifting fire management funds higher than the typical annual average. The purpose of additional funding was in support of greater fuels management across a broader landscape and in support of a long-term strategy that will complement the new BLM weeds management plan. The TC was given the following assignment in support of this plan:

Develop a long-term strategy (5-10-year plan) to treat various sub-sections of the Reserve on an annual basis. Identify the potential best methods to reduce fuels, improve restoration success and estimate costs for desired treatments in each area. Consider how these activities can be integrated to utilize funds from WRI, BLM and HCP. Add this strategy as an appendix or as a separate chapter in RCDR Habitat Fire Management Plan.

This document is intended to complement existing documents that already guide habitat management efforts in the RCDR, including the RCDR Habitat/Fire Management Plan, and the BLM's Weed Management Plan for the Red Cliffs / Beaver Dam Wash National Conservation Areas (NCAs). The strategies and associated funding mechanisms identified here are intended to provide further guidance under the framework of those existing plans. While this plan estimates costs and potential funding sources, the amount available each year to implement projects is unknown to do variability in annual agency budgets and grant availability.

Potential Funding Sources

Funding each year is unknown due to varying budgets, grant availability and success rate in getting grant awards. We expect annual funding may fluctuate between $300,000 – 800,000. Below is a list of potential funding sources to help implement this plan:

- BLM – $300,000 - 500,000 annually in base funding, infrastructure bill funding, national grants, USFWS grants, fuels treatment from CCFO.
- Utah Department of Natural Resources (UDNR) – Watershed Restoration Initiative (WRI), awards vary each year based on need and fund availability and could range from $0 – $500,000.
- Washington County HCP – $5,000 – 15,000 annually. Flexible spending depending on needs and annual budget, up to $500,000 over life of permit.
- SITLA – Noxious weed fund
- Washington County Weeds – ISM grants, State Forestry and Fire grants
- US Forest Service (USFS)?
- Utah Department of Transportation (UDOT)

Objective 1. Establish, enhance and maintain fuel breaks within the RCDR to reduce spread of fire and to reduce dry fuels near ignition sources.

Methods

Establishing and maintaining effective fuel breaks is the top priority of this plan. As a result, each fuel break listed above should be assessed annually each January-February to determine if herbicide treatment is needed that year. Treatments should be preventative and prioritized before areas are overgrown and fuel breaks are compromised. We expect that Rejuvra treatments may be effective for approximately 3-5 years, while areas treated with Plateau will last 1 year.

Fuel break treatment areas include all major trailheads in tortoise habitat, major roads in or adjacent to the Reserve and minor interior roads. Trailheads should be treated with a truck boom or by manual hand sprayers approximately 100-300 feet surrounding the trailhead. Major roads should be treated with a truck boom spanning 100-300 feet on each side of the road. Minor roads should be treated with a vehicle sprayer or by hand approximately 30 feet on each side of the road. Treatments should be conducted primarily during the tortoise less active season; however, exceptions should be made if summer or fall precipitation results in a high risk of invasive fuels growing out of control.

Table 1. Location, description and estimated costs of fuel breaks.

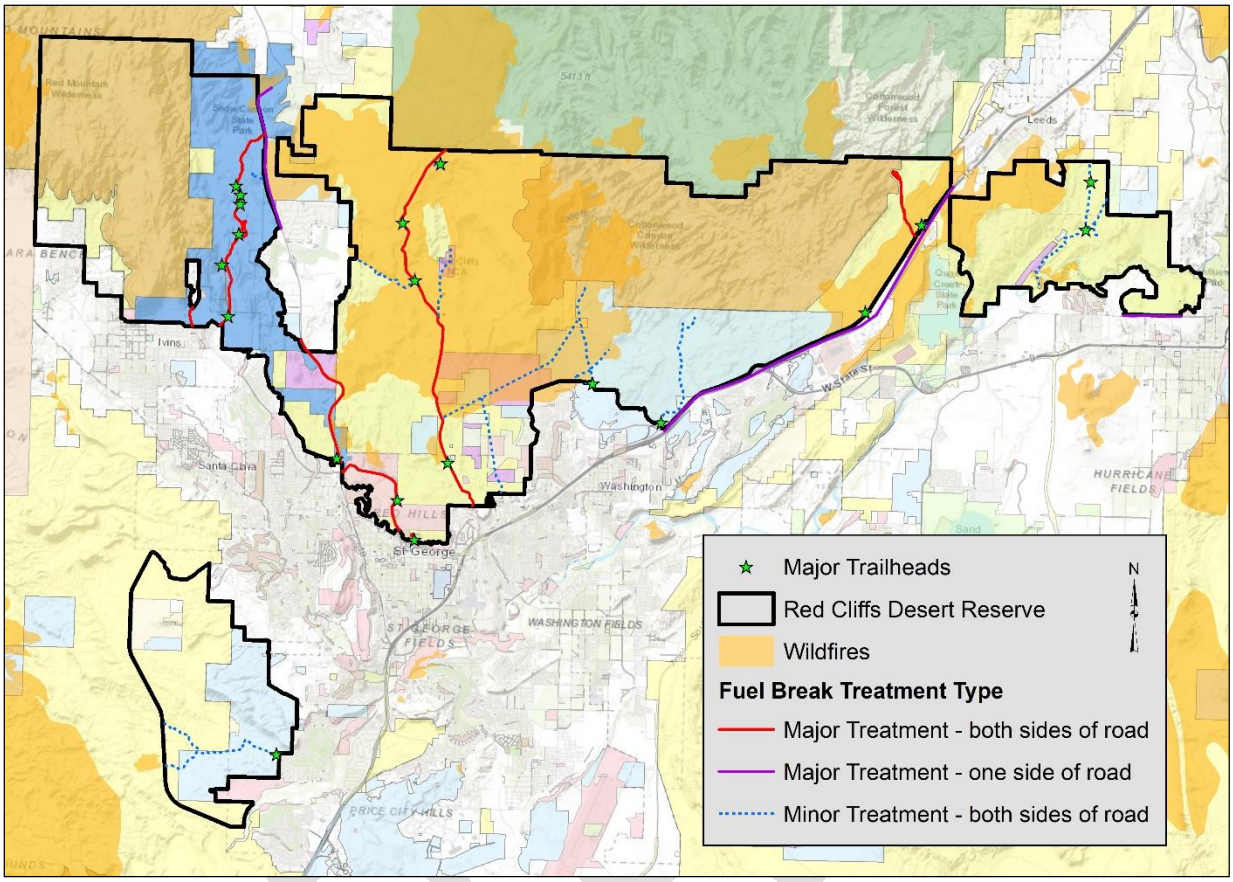
Treatment Areas *	Fuel Break Length (miles)**	Fuel Break Area (acres)	Treatment Area *(both sides of road, one side, or perimeter of trailhead)*	Estimated Herbicide costs ***	Managing Agencies & Potential Funding Sources
Zone 2					
Snow Canyon Dr	9	33	Both	$1,980	Snow Canyon SP, UDOT, Ivins City, BLM
Headquarters/CG/Sand Dunes	0.85	3	Perimeter	$180	
Tuacahn Dr	0.8	3	Both	$180	
SR-18	12	41	Both	$2,460	
Overlook Road	1	3.5	Both	$215	
Trailheads	0.85	3	Perimeter	$180	
Zone 3					
Winchester	3	11	Both	$660	BLM, SITLA, County HCP & Weeds, UDWR, St. George City, Washington City, UDOT
Red Hills Parkway	4.5	16.5	Both	$984	
Cottonwood Rd/Mesa Rim turnoff/ Turkey Farm	20	73	Both	$4,380	
Mill Creek	5.5	20	Both	$1,200	
Middleton Powerline	7	25.5	Both	$1,530	
Grapevine	5.5	20	Both	$1,200	
I-15	8	29	North side	$1,740	
Red Cliffs Rec Area/CG	3.5	17.5	Both	$760	
Trailheads	1	3.5	Perimeter	$210	
Zone 4					
Babylon Rd/Road to Sand Cove Campground	8	30	Both	$1,800	BLM, UDWR
Trailheads	0.2	0.7	Perimeter	$43	
Zone 5					
600 North	1.2	4.4	North side	$264	BLM, County HCP & Weeds, Hurricane City
Zone 6					
Navajo Dr & Bloomington Cave	5.5	20	Both	$1,200	BLM, SITLA, County HCP & Weeds, St. George City
Bear Claw Poppy Trailhead	0.4	1.5	Perimeter	$90	
Total	98	360		$ 21,046	

* Zone 1 fire management is conducted primarily by the City of Ivins and Kayenta.

** Linear mileage doubled for roads treated on each side.

*** Cost per acre estimated at $60/acre assuming treatment with both Rejuvra and Plateau.

Figure 1. Priority fuel break treatment areas.



Objective 2. Protect unburned tortoise habitat in the RCDR through an annual herbicide treatment plan.

Methods

Conduct aerial treatments by helicopter, plane or drone throughout unburned areas with possibility of truck boom at roads or drivable urban edges. Conduct treatments at edges of existing burned areas and adjacent edges of unburned habitats to reduce dry fuel loads, with the objective of reducing or slowing spread of fire from burned to unburned habitats. Coordinate with US Forest Service to reduce fire danger on Dixie NF north of the RCDR and with UDOT to reduce fires from adjacent highways.

Below is a tentative plan to treat up to 9 different areas over a 5-year period. They are prioritized into "High," Medium," and "Low" categories based on the density of tortoises and quality of habitat. Prioritization of these areas may be adjusted annually under adaptive management to reassess their priority based on emerging threats, past success/failure, or funding limitations. In no more than 5 years, the plan will be updated to consider past achievements and to re-establish goals for another 5-year period.

Figure 2. Unburned habitat herbicide treatment areas (1-9).

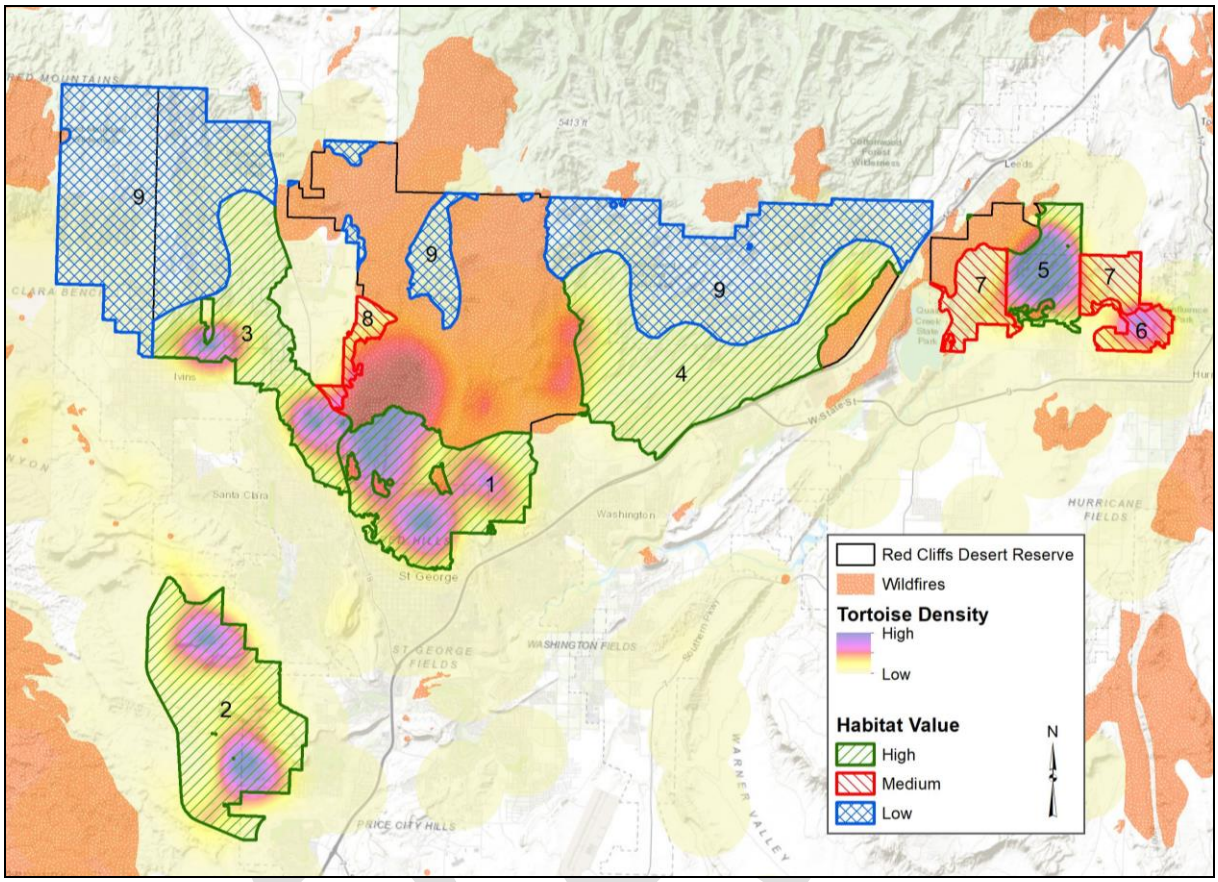


Table 2. Description and ranking of priority herbicide treatment in unburned areas.

Unburned Area	Ownership & Managing Agencies	Description	Acres *	Priority Level
1	BLM, UDWR, SG City, SITLA, County, Private	Zone 3, high tortoise density, large area	5,485	High
2	BLM, SITLA, County, Private	Zone 6, high tortoise density, large area	6,800	High
3	SCSP, BLM, Ivins City	Zone 2, high tortoise density, fragmented habitat	5,440	High
4	SITLA, BLM	Zone 3, medium tortoise density, large area	8,145	High
5	BLM	Zone 4, high tortoise density, small area	1,920	High
6	BLM	Zone 5, high tortoise density, but small isolated habitat	720	Medium
7	BLM	Zone 4, low tortoise density, medium size area	2,280	Medium
8	BLM, SCSP	Zone 3, medium tortoise density, fragmented by fire	605	Medium
9	BLM, SCSP, Private	Zone 1 and upland habitat of Zones 2-3, low tortoise density	21,360	Low

***** Acres listed are total amount within the treatment area and represent a maximum effort. Due to limited funding, it is unlikely that the maximum acreage amount listed will be treated each year.

Table 3. Estimated costs and methods for treating unburned habitat in 2025-2030.

Year	Treatment Areas *	Treatment Methods	Acres	Estimated Costs **
2025	1	Helicopter, Plane, Truck Boom, Drone	≤ 5,485	$131,640 - $438,800
2026	2	Helicopter, Plane, Truck Boom, Drone	≤ 6,800	$163,200 - $544,000
2027	3	Helicopter, Plane, Truck Boom, Drone	≤ 5,440	$130,560 - $435,200
2028	4	Helicopter, Plane, Truck Boom, Drone	≤ 8,145	$195,480 - $651,600
2029	5	Helicopter, Plane, Truck Boom, Drone	≤ 1,920	$46,080 - $157,200
2030	6-8	Helicopter, Plane, Truck Boom, Drone	≤ 3,600	$86,400 - $288,000

*Treatment Area 9 would be only be treated after 1-8 are complete and if sufficient funds are available.

** Range of cost estimates are based on helicopter-only treatments of $15-20/acre without chemical plus an additional $9-60/acre with chemical. Low end of estimate is for Plateau-only treatments at 6 oz/acre plus Herbimax 16 oz/acre. High end of estimate adds Rejuvra at 6 oz/acre plus Rejuvra and Herbimax. Costs are estimates as of June 2024 and are subject to change.