



National Park Service Colorado Front Range and Northwest Colorado Fire Management Groups Fire Ecology Annual Report Calendar Year 2025

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Ainsley, Christina, Aline, and Nate; Spruce Fire, Rocky Mountain National Park; August 2025

The National Park Service (NPS) Division of Fire and Aviation Management relies on science and long-term monitoring to inform an adaptive management approach for assessing and improving fire management programs and activities at park units. Adaptive management, along with policies, standards, and responsibilities for monitoring are described in Chapter 8 of [Reference Manual 18](#). The NPS Fire Ecology Program is responsible for the collection, analysis, and interpretation of fire effects monitoring data for park managers to use for program evaluation and decision making. This annual report is intended to partially fulfill reporting requirements for the Fire Ecology Program and does not constitute a complete analysis of any NPS fire management program or activity. Additional interpretation and reporting can be found in previous annual reports at [NPS DataStore](#) or by contacting the author(s) of this report.

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Headquarters RX; Rocky Mountain National Park; April 2025

A. Summary

The Rocky Mountain National Park (ROMO) based Fire Ecology Program supports two NPS Fire Management Groups within the Intermountain Region: Colorado Front Range and Northwest Colorado, for a total of 7 park units. During the 2025 field season, monitoring activities were conducted at Dinosaur National Monument (DINO) and host park ROMO. A total of 65 permanent plots were sampled in 2025 and included Rapid Assessment plots, Terrestrial LiDAR Scanning (TLS) plots, and Point Intercept transects (Table 1). In total, the fire effects monitoring program maintains 715 monitoring plots across 7 NPS units (Table B-1). Monitoring efforts included new plot installations in planned mechanical and prescribed fire treatments (ROMO), immediate post-burn and year 01 post-burn reads (ROMO: Eagle Cliff RX), year 05 post-wildfire reads (ROMO: East Troublesome fire), year 20 post-burn reads (DINO: Bighorn Basin RX), and sampling of existing plots in preparation for prescribed burning (ROMO: Headquarters and Beaver Meadows RX).

We were able to borrow a TLS unit from the USFS Rocky Mountain Research Station for most of the field season and have incorporated TLS sampling in all treatment monitoring efforts. We continue to collaborate with staff from NPS Biological Resources Division, USGS, USFS Rocky Mountain Research Station, Colorado State University and the New Mexico Consortium on the application of TLS for ecological monitoring.

Additional efforts included local initial attack staffing, wildfire response, fuel moisture sampling, support for Fire Management Plan updates, informal and formal presentations, Junior Firefighter program participation, interagency Fire Danger Operating Plan development, interagency fuels planning, fuels reduction/hazard tree work, Search and Rescue operations, and regional RAWS program oversight.

2025 Staffing

After a period of uncertainty around the impact of the Federal Civilian Hiring Freeze on temporary monitoring staff, we were able to bring on 2 new GS-5 seasonal crew members: Aline Johnson and Ainsley Lightcap who both started in late April. Aline previously worked on the Zion Fire Effects Crew and Ainsley worked at ROMO on the Vegetation Crew in 2024. Aline was selected to fill the vacant GS-6 career seasonal Assistant Lead Monitor position in July and transitioned to that role in August. With the Assistant Lead Monitor position filled, all permanent Fire Ecology positions are filled for the first time since November 2023.



Headquarters RX; Rocky Mountain National Park; April 2025

2025 Fire Effects Workload

DINO: Bighorn Basin Prescribed Fire

The Bighorn Basin RX project was burned in 2005. To evaluate and document the effects of the prescribed fire treatment, 10 permanent vegetation monitoring transects were established in June of 2002 by DINO personnel: 5 transects were located within the burn unit (experimental) and an additional 5 transects were located outside the unit (control). The Fire Effects monitoring crew conducted 20-year post-burn sampling in 2025. TLS scans were taken in addition to standard DINO plot sampling protocols.

ROMO: East Troublesome Wildfire

In 2020, the East Troublesome Fire burned over 21,000 acres of the park, primarily through lodgepole pine stands west of the Continental Divide. Prior to this wildfire, the park's fire ecology program had established 14 permanent monitoring plots (FMH) within the Lodgepole forest – west slope monitoring type. Coincidentally, seven of these plots burned in the East Troublesome Fire and seven did not burn (*Figure 1B* contains an inset image of these plots overlaid with the East Troublesome burn scar; several plots are located within the documented burn perimeter, but we did not observe any evidence of wildfire, so we counted them as “unburned” in our analyses). This provided an excellent opportunity to examine the effects of wildfire on the park's lodgepole ecosystem. The fire effects crew conducted 5-year post-burn reads during the field season in 2025. The crew characterized overstory structure, fuels, understory species composition, and seedling and shrub densities. The crew also collect TLS scans.

ROMO: Headquarters Unit Spring 2025 Prescribed Fire

Fire management staff at Rocky Mountain National Park burned roughly 60 acres of the Headquarters Burn Unit in April 2025. Within this burn area, the fire effects crew had 6 permanent fire effects monitoring plots (Rapid Assessment + TLS scan) established and we collected plot data before the burn during the 2024 growing season, immediately post-burn, and during the first growing season post-burn.

ROMO: Headquarters Unit Fall 2024 Prescribed Fire

During the 2025 growing season, the fire effects crew conducted 01YR01 reads for plots previously burned in November 2024 Headquarters Unit RX. This burn unit contained 7 monitoring plots (Rapid assessment + TLS scan). In this report, we focus on the discussion of 01YR01 data; Pre-Burn vs. 01Post data is discussed in last year's annual report.

ROMO: Beaver Meadows & Headquarters Units Fall 2025 Prescribed Fire

Rocky Mountain National Park fire management staff burned blocks within two separate burn units in the fall of 2025, (1) block B of the Beaver Meadows Unit, and (2) block I of the Headquarters unit. There are 3 permanent monitoring plots installed in each of these blocks. We conducted pre-burn reads during the growing season of 2025, and immediate post-burn reads (Rapid assessment + TLS scan).

ROMO: Thunder Mountain Mechanical Fuels Treatment

The Thunder Mountain Fuels Reduction Project is a 127-acre proposed thinning project along part of the eastern boundary of the park. The primary goal of the project is to reduce fuel loading

thereby reducing the threat of wildland fire to adjacent communities and watersheds. Four permanent plots were established within the project unit and initial pre-treatment data were collected during the 2025 field season (Rapid Assessment). Contractors are expected to conduct fuels work and construct piles in summer of 2026. The Fire Effects Crew will re-measure plots again once piles are completed, again once piles are burned, and again at the discretion of the Fire Ecologist and Fuels Specialist.

ROMO: Eagle Cliff Unit planned Prescribed Fire

The Eagle Cliff burn unit is part of Rocky Mountain National Park's Front Country RX burn plan. The unit encompasses 368 acres and represents various fuel types depending on aspect and slope. Six permanent plots were established within the project unit and initial pre-treatment data were collected during the 2025 field season (Rapid Assessment + TLS scan). The fuels program is planning to potentially burn blocks within this unit during FY26, and the fire effects crew will re-measure plots post-burn.

Table 1. Fire Effects Plot Workload (2025)

Park	Monitoring Unit	Plot Type (FMH Forest/Brush/Grass plot, photo point, Rapid Assessment, CBI, etc.)	Years Data Collected (start-end)	Annual Total (2025)	Total Plots
Dinosaur	Bighorn Basin RX	Point Intercept Transect + TLS	2002-2025	10	10
Rocky Mountain	East Troublesome WF	Rapid assessment (modified TLS Tier 2 protocols)	1998-2025	14	14
Rocky Mountain	Headquarters: Spring 2025 RX	Rapid assessment (modified TLS Tier 2 protocols)	2000 - 2025	12*	6
Rocky Mountain	Headquarters: Fall 2024 RX	Rapid assessment (modified TLS Tier 2 protocols)	2018 - 2025	7	7
Rocky Mountain	Beaver Meadows & Headquarters: Fall 2025 RX	Rapid assessment (modified TLS Tier 2 protocols)	1998 - 2025	12†	6
Rocky Mountain	Thunder Mountain MX	Rapid assessment (modified TLS Tier 2 protocols)	2025 - 2025	4	4
Rocky Mountain	Eagle Cliff RX	Rapid assessment (modified TLS Tier 2 protocols)	2025 - 2025	6	6
Total				65	53

* 6 plots sampled immediate post-burn and again during growing season

† 6 plots sampled pre-burn and again immediate post-burn

Figure 1A. DINO Plots sampled 2025

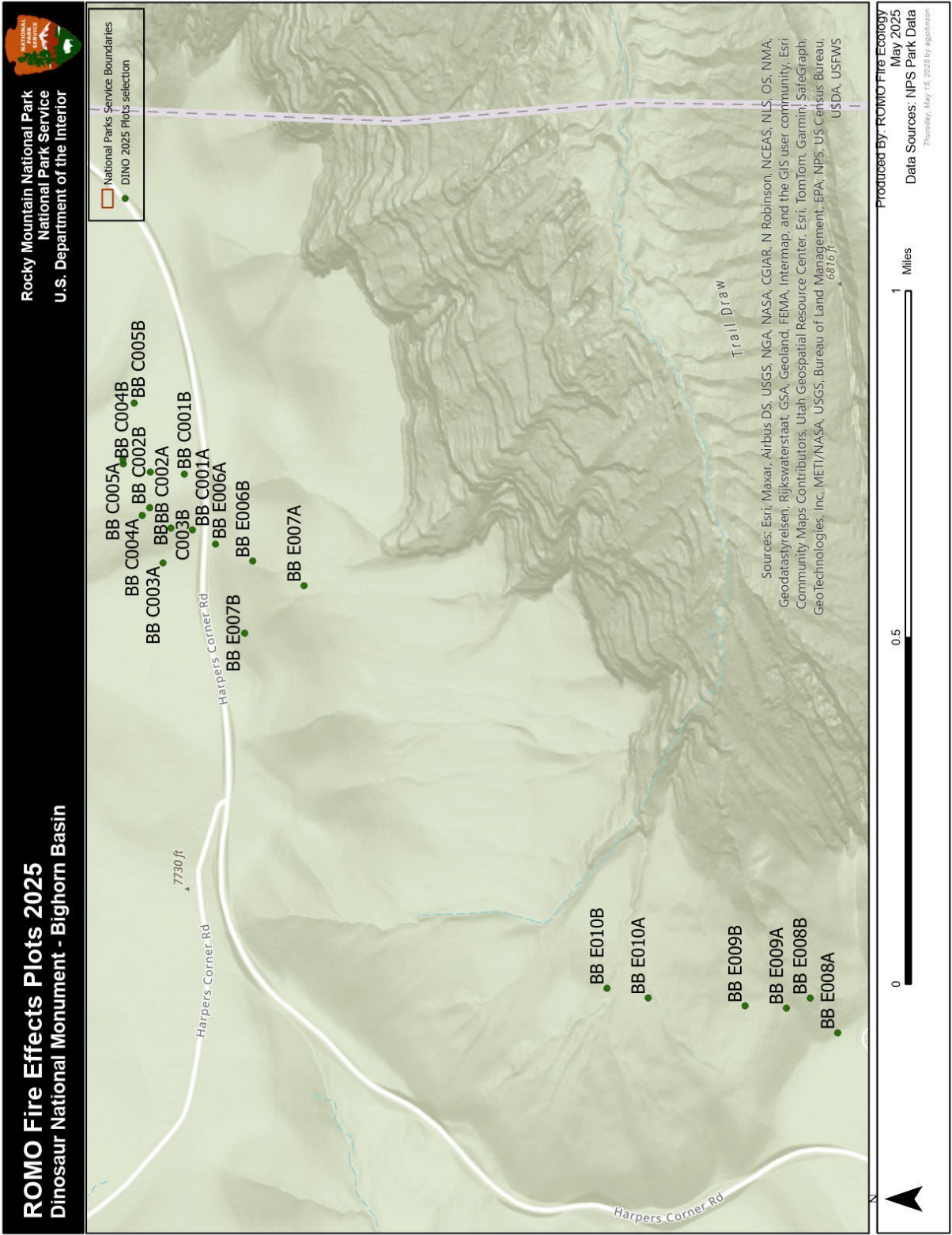
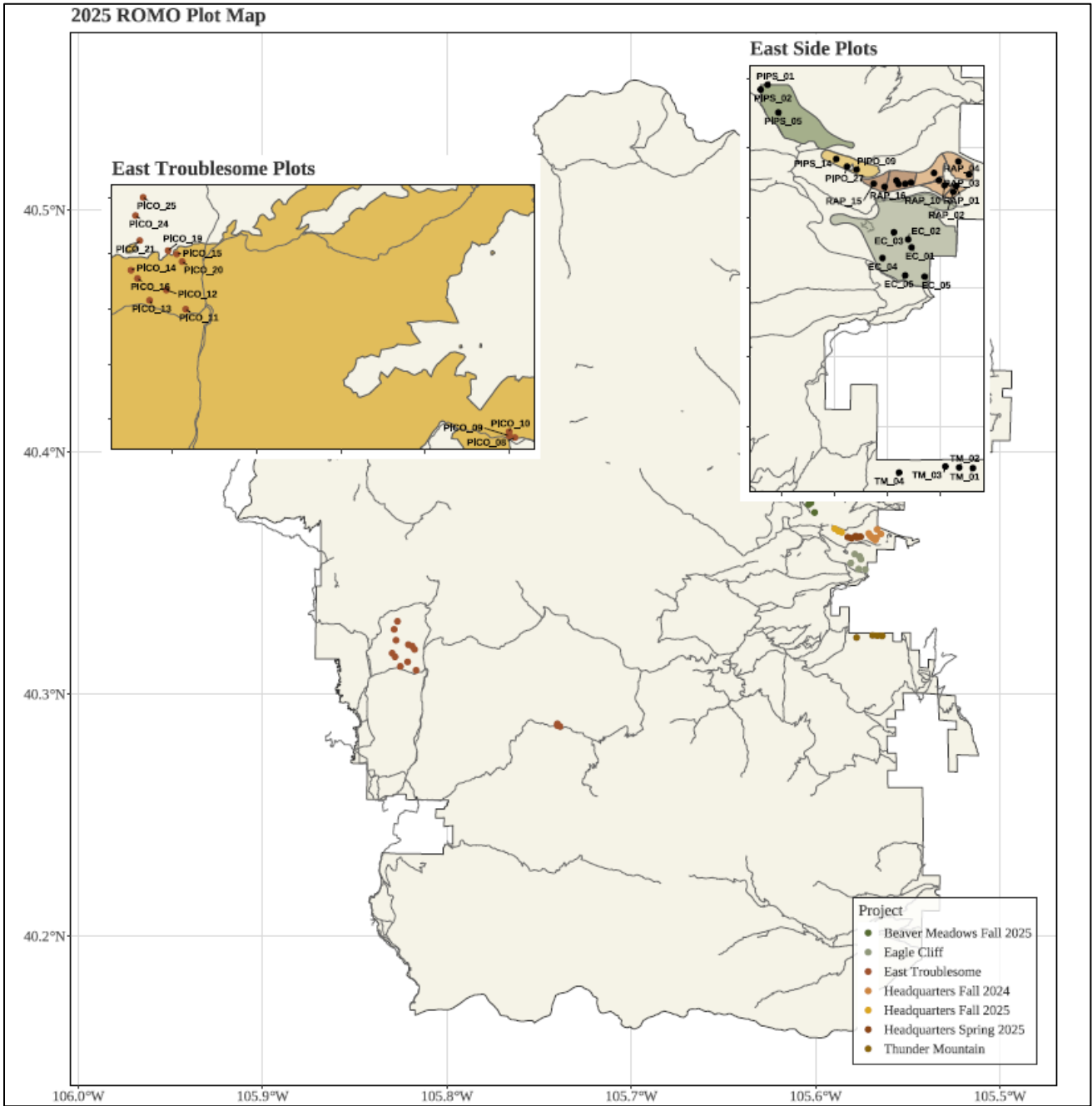


Figure 1B. ROMO Plots sampled 2025



B. Monitoring Results and Recommendations

1. *Dinosaur: Bighorn Basin RX*

In June 2025, the Fire Effects crew visited Dinosaur National Monument to collect 20-year post-burn data from the Bighorn Basin Unit, which was treated with prescribed fire in 2005. Ten 100-meter point-intercept vegetation transects (5 within the burn unit, 5 unburned controls) have been remeasured 1 year, 2 years, 4 years, 7 years, 12 years, and 20 years post-burn.

Twenty years after burning, total shrub cover has increased to within 5% of pre-burn values (see Figure 1). Mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*), antelope bitterbrush (*Purshia tridentata*), and broom snake weed (*Gutierrezia sarothrae*) were the predominant shrub species both within and outside the burn in all years sampled. Although shrub cover was lower inside the burn as compared to outside the burn, shrub diversity was greater within the burn unit (14 shrub species encountered within the burn unit, 7 species encountered outside the burn unit).

Sagebrush cover was reduced 81% following burning (see Figure 2). Post-burn sagebrush cover remained relatively stable following burning through the fourth year after the burn and has increased since year 7. Twenty years following burning, sagebrush cover is 37% lower than pre-burn cover inside the burn and 15% lower than pre-burn values outside the burn.

Twenty years following burning, native forb cover is 156% higher outside the burn and 666% higher inside the burn relative to pre-burn values. Species diversity was similar inside and outside the burn unit (21 native forb species encountered within the burn, 22 native forb species encountered inside the burn).

In 2025 native grass cover was the highest recorded for any plot visit both inside and outside the burn and was similar across burned and unburned transects (69% total cover inside the burn, 62% total cover outside the burn; see Figure 3). The most common native grasses encountered were similar inside and outside the burn and species diversity was similar inside and outside the burn unit (13 native graminoid species encountered within the burn, 14 native graminoid species encountered inside the burn). Cheatgrass cover has remained higher within the burn unit (13-31%) than outside the burn for all years sampled, however cover values 20 years following the burn were the lowest sampled for all post-burn visits for both burned and unburned transects (see Figure 4).

For additional detail, see Appendix D

Figure 1

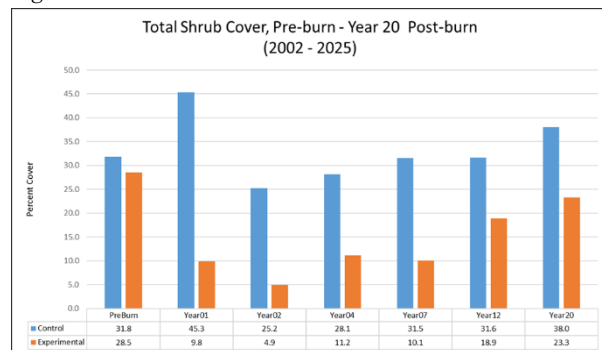


Figure 2

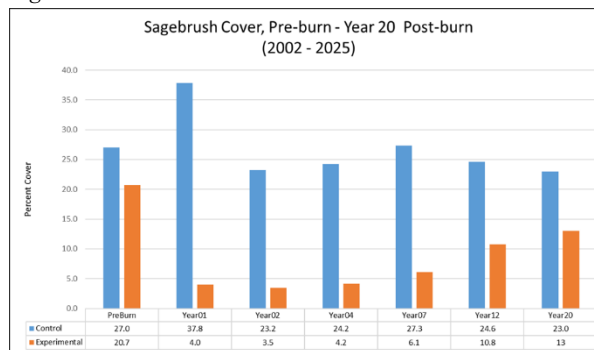


Figure 3

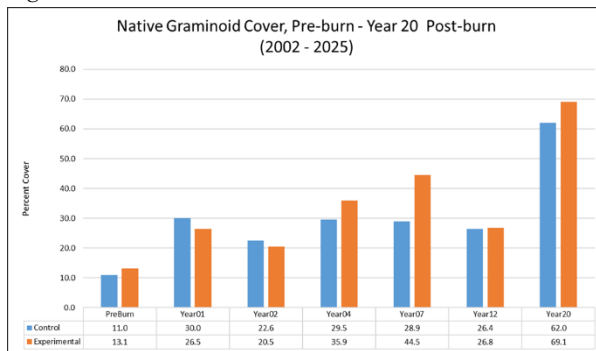
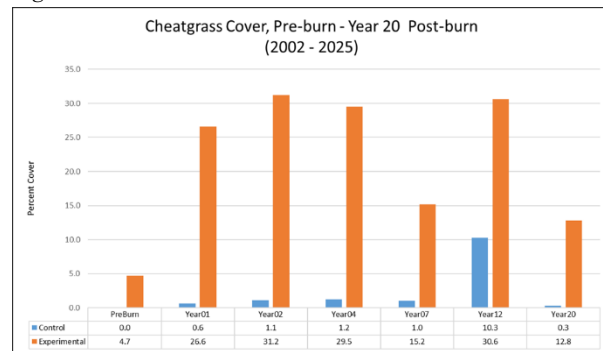


Figure 4



Christina and Ainsley; Bighorn Basin, Dinosaur National Monument, June 2025

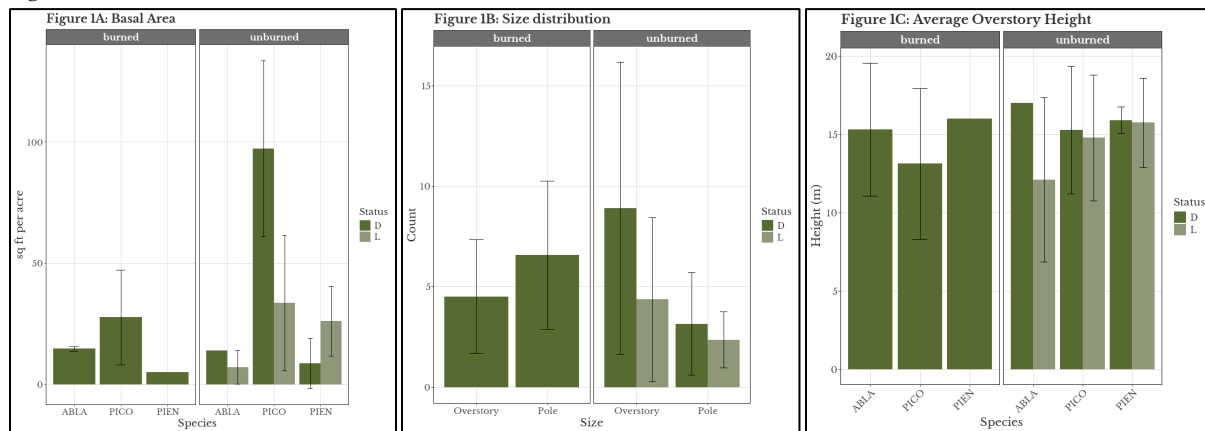
2. Rocky Mountain: East Troublesome WF

Plots within projects 2-7 were surveyed using the ROMO Fire Effects Rapid Assessment protocol (see Appendix C for details).

The crew inventoried trees within each plot. Figure 1 summarizes several canopy characteristics; mean values across plots are reported $\pm$ 1 standard deviation for (1A) basal area, (1B) tree count, (1C) height. Data is grouped into burned vs. unburned plots (left vs. right panel), live vs. dead (light vs. dark green), and species. Overstory species observed were *Pinus contorta*, *Picea engelmannii*, and *Abies lasiocarpa*. Live trees were only observed on unburned plots. We detected a significant difference in total basal area in burned vs. unburned plots (PERMANOVA, $p = 0.001$), and a significantly greater density of dead *Pinus contorta* in unburned plots (Wilcoxon rank-sum test, $p = 0.002$). Pairwise comparisons irrespective of Status (Live/Dead)

indicated that burned plots had a significantly lower density of “overstory” trees vs. unburned plots (negative binomial GLM, $p = 0.005$). Looking solely at density of dead trees, we detected a greater density of dead “overstory” trees on unburned plots (negative binomial GLM, $p = 0.04$), and a lower density of dead “poles” on unburned plots (negative binomial GLM, $p = 0.06$). No statistical differences in overstory tree heights were detected between burned and unburned plots, nor between species, nor between Live/Dead status. Average *Abies lasiocarpa* height was 13.9m, average *Pinus contorta* height was 14.7m, and average *Picea engelmannii* height was 15.8m.

Figure 1

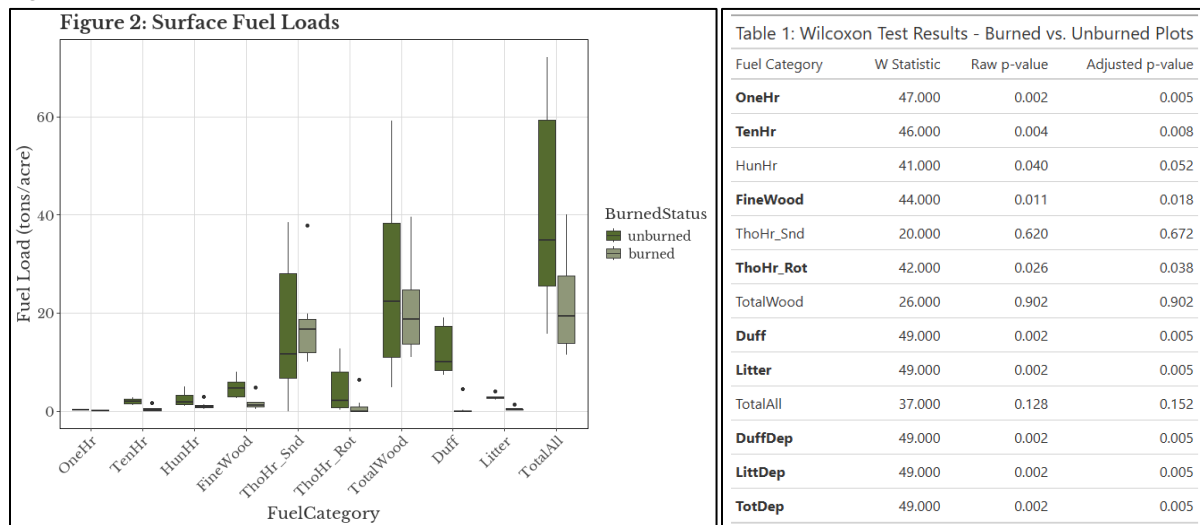


We assessed surface fuel loads via modified Brown’s transects; fuel load estimates for burned vs. unburned plots are represented in *Figure 2*, and results from statistical analyses comparing fuels of burned vs. unburned plots are summarized in *Table 1* (fuel categories where $p < 0.05$ are bolded). Based on log-transformed fuel load data, PERMANOVA indicated a significant reduction in fuel load in burned plots relative to unburned plots ($p = 0.001$). Individual fuel categories were compared using Wilcoxon rank-sum tests. P-values were adjusted for multiple comparisons. 1-hr fuels, 10-hr fuels, Fine woody fuels (1-hr – 100-hr), rotten 1000-hr fuels, litter and duff loads, and litter and duff depths all were lower in burned plots relative to unburned plots.



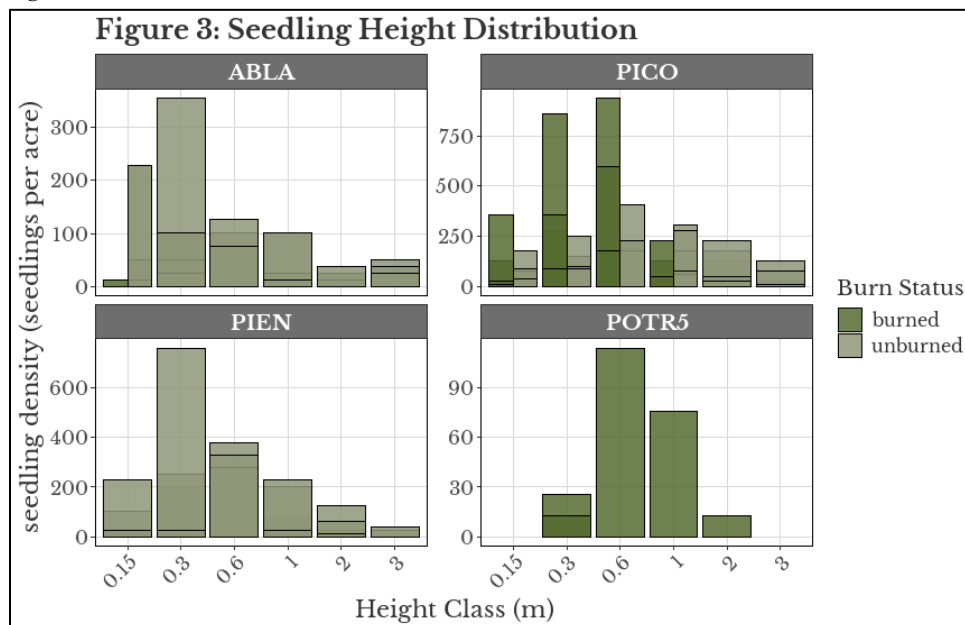
Example of burned and unburned plots, East Troublesome WF; ROMO, Aug-Sept, 2025

Figure 2 & Table 1



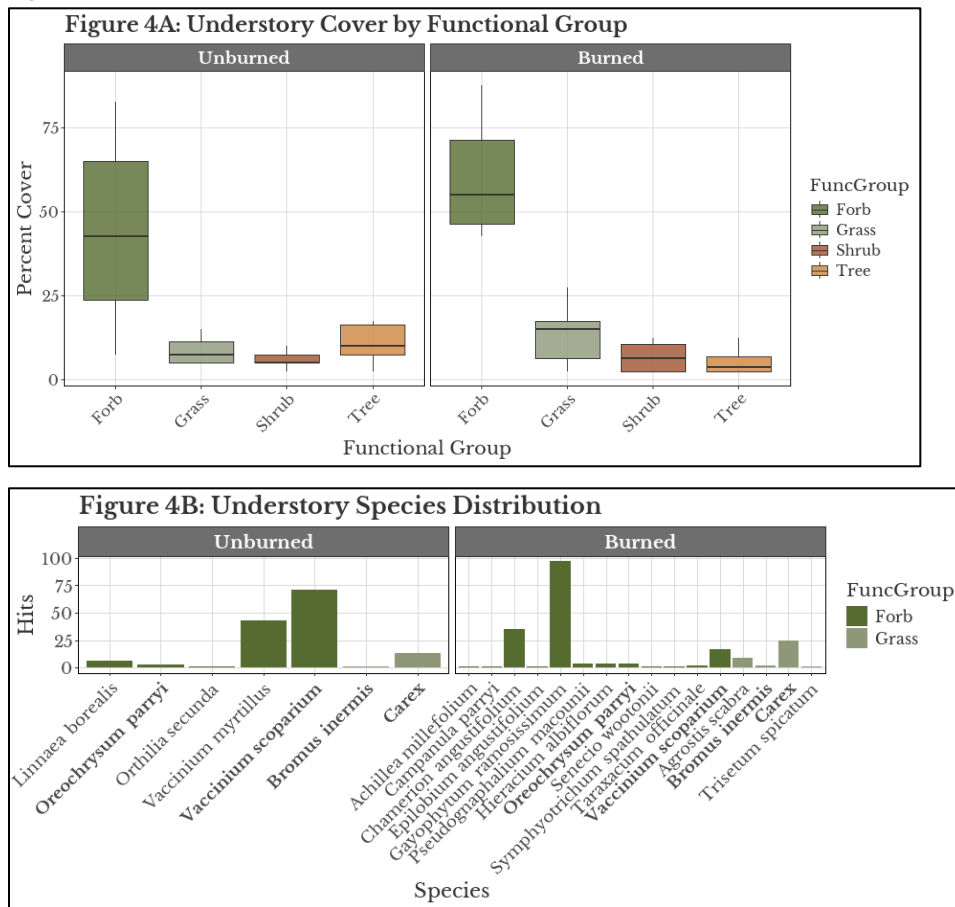
We observed a clear difference in seedling establishments between burned and unburned plots. Negligible populations of shade-tolerant *Abies lasiocarpa* and *Picea engelmannii* seedlings were seen on plots that had burned in 2020, and establishment of *Populus tremuloides* was only observed on burned plots (Figure 3). Regeneration of *Pinus contorta* occurred on both burned and unburned plots. A statistically significant effect on burn status on seedling size and species distribution was observed (PERMANOVA, $p = 0.003$). We observed higher mean *Pinus contorta* seedling height in unburned plots (0.8m) than in burned plots (0.5m). Ordinal logistic regression indicated a significant shift in lodgepole pine height class distributions between burned and unburned plots, with seedlings in burned plots more likely to be shorter (younger) than seedlings in unburned plots (odds ratio = 0.60, $p < 0.05$) consistent with post-fire recruitment.

Figure 3



Understory species data was categorized by functional group for unburned vs. burned plots (*Figure 4A*). We detected a difference in percent cover of these functional groups between burned and unburned plots (PERMANOVA, $p = 0.034$). Diversity of grass and forb species for unburned vs. burned plots is summarized in *Figure 4B*; greater species diversity was detected in burned vs. unburned plots (two-way mixed-effects ANOVA, $p = 0.06$) and post-hoc comparisons revealed that forb abundance was greater in burned plots ($p < 0.02$), whereas no significant differences were detected for other functional groups.

Figure 4

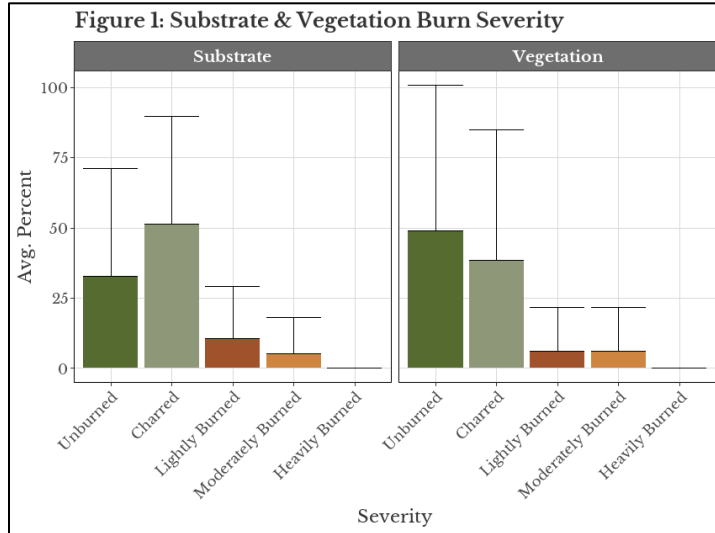


Shrub density was also assessed, although we did not detect an effect of the 2020 burn on shrub density or species composition. Shrub species represented in our plots were *Juniperus communis*, *Mahonia repens*, *Rosa woodsia*, and *Rubus deliciosus*.

3. Rocky Mountain: Headquarters Unit Spring 2025 RX

Overall, we observed light/moderate fire effects following the Spring 2025 RX; most of both substrate and vegetation cover was either charred or unburned (*Figure 1*).

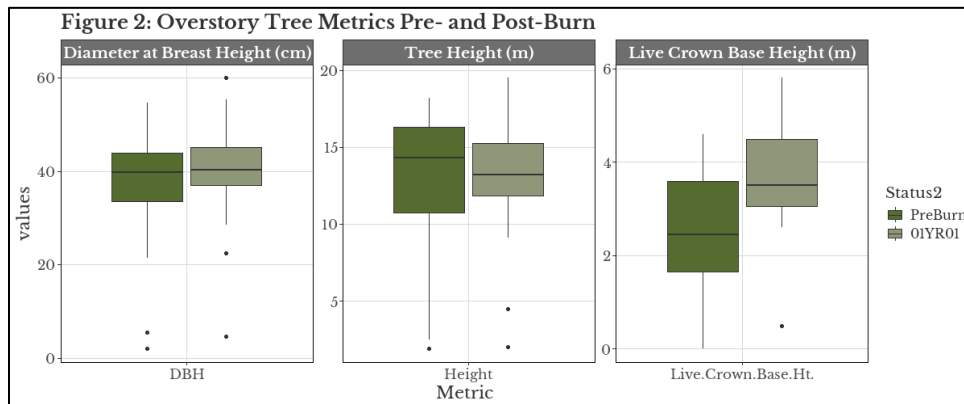
Figure 1



We inventoried 15 overstory trees across plots within the burn unit, all of which were live *Pinus ponderosa*. After the burn, average height of bole char was 1.5m (max 4m), average height of canopy scorch was 3.4m (max 8m), and average percent canopy scorch was 21% (max 90%).

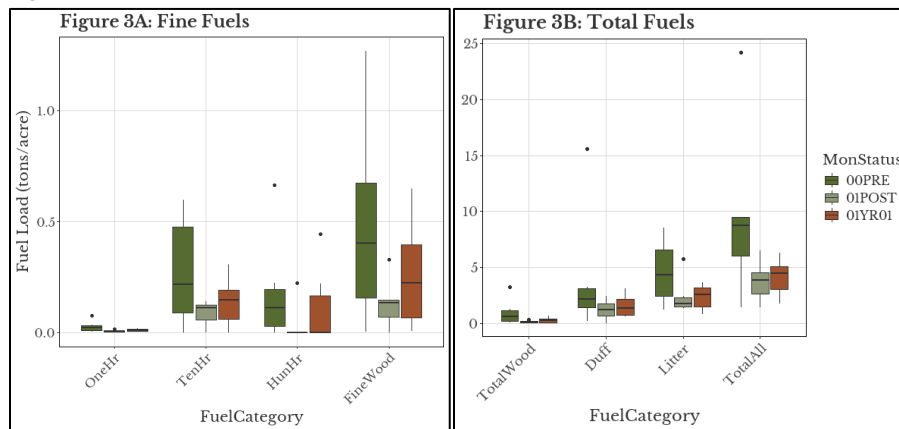
We observed no differences in tree heights or DBH between pre- and 1-year post-burn (*Figure 2*) and observed no mortality. We observed a significant increase in live crown base height between pre-burn (median = 2.6m) and 1-year post-burn (median = 3.5m) (Wilcoxon signed-rank test, $p = 0.004$).

Figure 2



We assessed surface fuel loads via modified Brown's transects, measuring fine fuels (1-hr, 10-hr and 100-hr) *Figure 1A*, and total fuels (Total Woody fuels, Duff, Litter, and Total) *Figure 1B*. Based on log-transformed fuel load data, PERMANOVA indicated a significant difference in overall fuel loads between pre-burn "00PRE", immediate post-burn "01POST", and 1-year post-burn "01YR01" ($p = 0.035$).

Figure 3



Pairwise comparisons (linear mixed-effects models with Benjamini-Hochberg p-value adjustment) between “00PRE”, “01POST”, and “01YR01” were conducted for each fuel category and results are summarized in *Table 1* (fuel categories where $p < 0.1$ are bolded). Significant reductions in 1-hr, Total Woody, Litter, and Total fuels were observed immediately after the burn (*1A*), indicating detectable surface fuel consumption. Although not significant, fuel load differences between 01POST and 01YR01 suggests some recovery in fuel loads by the first growing season post-burn (*1B*). Fuels in the 1-Hr, TotalWood, Litter, and TotalAll categories remained lower than pre-burn levels 1-year post-burn (*1C*), indicating that the prescribed burn was effective in reducing surface fuel accumulation.

Table 1

Table 1A: Fuel Loads 00PRE vs 01POST						Table 1B: 01POST vs 01YR01						Table 1C: 00PRE vs 01YR01					
Fuel Category	Difference	SE	Den. df	t value	p-value	Fuel Category	Difference	SE	Den. df	t value	p-value	Fuel Category	Difference	SE	Den. df	t value	p-value
OneHr	0.07	0.02	10	3.12	0.033	OneHr	-0.02	0.02	10	-1.02	0.332	OneHr	0.05	0.02	10	2.10	0.093
TenHr	0.18	0.08	10	2.22	0.152	TenHr	-0.06	0.08	10	-0.73	0.480	TenHr	0.12	0.08	10	1.49	0.252
HunHr	0.25	0.13	10	1.96	0.236	HunHr	-0.11	0.13	10	-0.88	0.399	HunHr	0.14	0.13	10	1.08	0.399
FineWood	0.28	0.12	10	2.31	0.130	FineWood	-0.12	0.12	10	-1.01	0.335	FineWood	0.16	0.12	10	1.30	0.334
TotalWood	0.48	0.16	10	3.06	0.036	TotalWood	-0.12	0.16	10	-0.78	0.454	TotalWood	0.36	0.16	10	2.28	0.068
Duff	0.73	0.46	10	1.60	0.416	Duff	-0.20	0.46	10	-0.45	0.664	Duff	0.52	0.46	10	1.15	0.416
Litter	0.55	0.23	10	2.44	0.053	Litter	0.01	0.23	10	0.05	0.965	Litter	0.56	0.23	10	2.48	0.053
TotalAll	1.01	0.38	10	2.66	0.058	TotalAll	-0.11	0.38	10	-0.28	0.787	TotalAll	0.91	0.38	10	2.38	0.058

Understory species data was categorized by functional group pre-burn and 1-year post-burn (*Figure 4*); no difference in understory community structure was detected (PERMANOVA, $p > 0.1$). We also analyzed differences in native vs. non-native understory cover between pre-burn and post-burn (*Figure 5A-B & Table 2*); and observed no differences in native vs. non-native cover (PERMANOVA, $p > 0.1$), or in species composition (linear mixed-effects models).

We did not detect any statistical effects of the burn on seedling or shrub density. Shrub species that were observed include *Purshia tridentata*, *Ribes cereum*, *Chrysothamnus viscidiflorus*, and *Dasiphora fruticosa*.

Figure 4

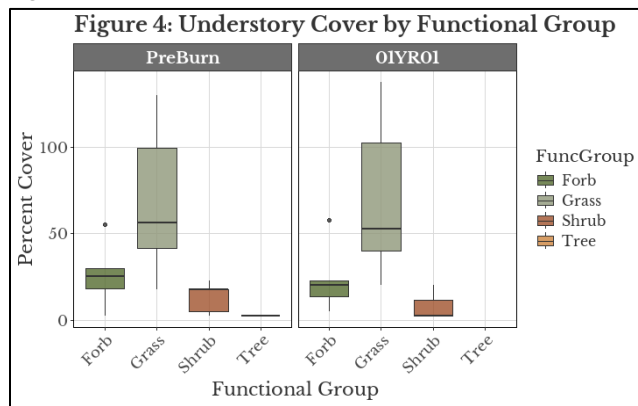
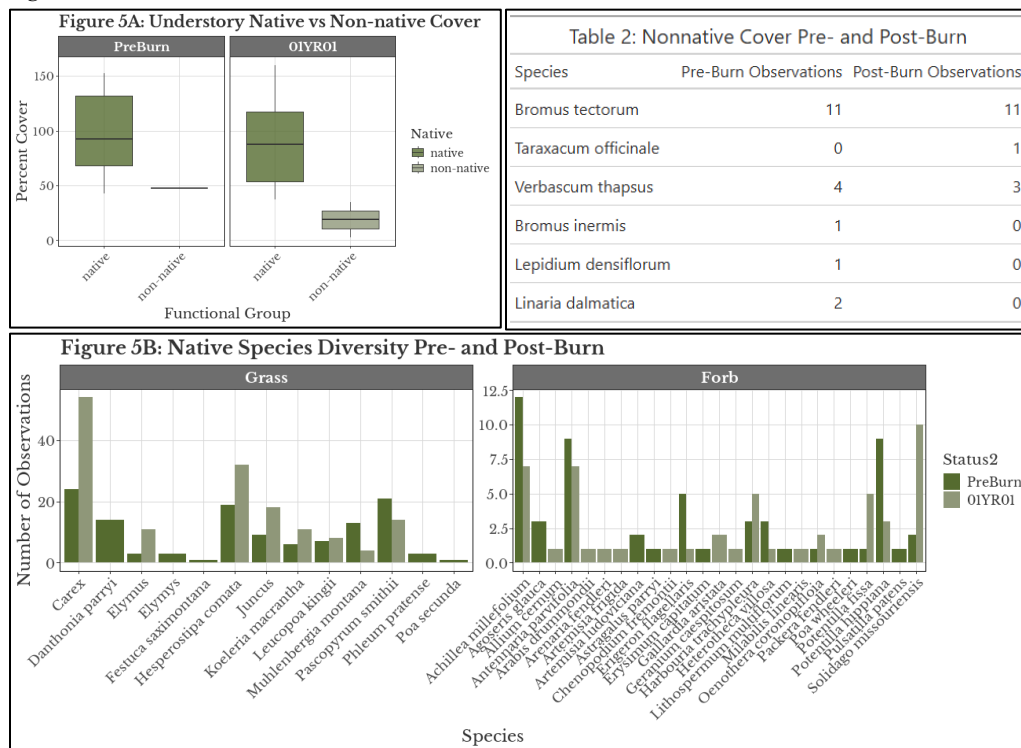


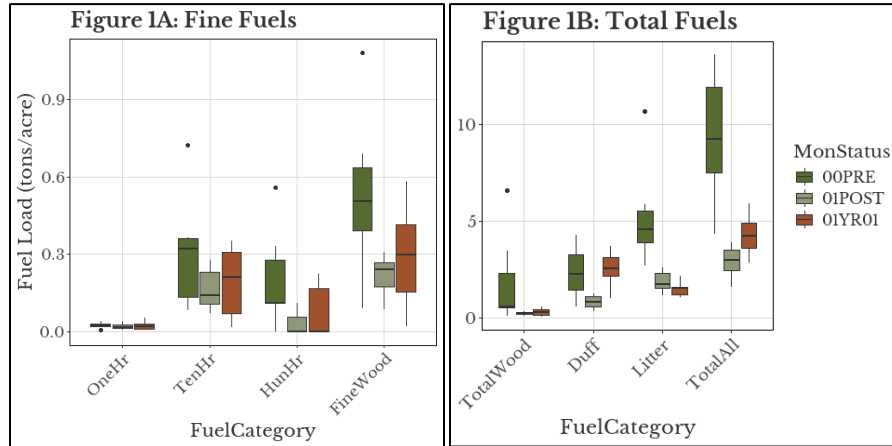
Figure 5 & Table 2



4. Rocky Mountain: Headquarters Unit Fall 2024 RX

Surface fuel loads were assessed pre-burn “00PRE”, post-burn “01POST”, and 1-year post-burn “01YR01”, results are summarized in *Figure 1*. Fuel loads differed between these three sampling times (PERMANOVA, $p = 0.002$).

Figure 1



Pairwise comparisons (linear mixed-effects models with Benjamini-Hochberg p-value adjustment) between “00PRE”, “01POST”, and “01YR01” were conducted for each fuel category and results are summarized in *Table 1* (fuel categories where $p < 0.1$ are bolded). We observed lasting effects of the prescribed burn on surface fuel accumulation; despite significant recovery within “Duff” and “TotalAll” fuel categories, and non-significant recovery in nearly all other fuel categories between the immediate post-burn fuels data and the 01YR01 fuels data, 01YR01 fuel loads remained below 00PRE fuel loads for “TotalWood”, “Litter”, and “TotalAll” categories.

Table 1

Table 1A: Fuel Loads 00PRE vs 01POST						Table 1B: 01POST vs 01YR01						Table 1C: 00PRE vs 01YR01					
Fuel Category	Difference	SE	Den. df	t value	p-value	Fuel Category	Difference	SE	Den. df	t value	p-value	Fuel Category	Difference	SE	Den. df	t value	p-value
OneHr	0.02	0.03	12	0.61	0.786	OneHr	-0.01	0.03	12	-0.33	0.786	OneHr	0.01	0.03	12	0.28	0.786
TenHr	0.12	0.06	12	1.95	0.126	TenHr	0.00	0.06	12	-0.06	0.951	TenHr	0.12	0.06	12	1.88	0.126
HunHr	0.30	0.11	12	2.68	0.060	HunHr	-0.09	0.11	12	-0.77	0.458	HunHr	0.22	0.11	12	1.91	0.120
FineWood	0.24	0.10	12	2.31	0.119	FineWood	-0.04	0.10	12	-0.41	0.690	FineWood	0.20	0.10	12	1.90	0.123
TotalWood	0.68	0.26	12	2.64	0.044	TotalWood	-0.04	0.26	12	-0.17	0.871	TotalWood	0.64	0.26	12	2.48	0.044
Duff	0.59	0.18	12	3.20	0.011	Duff	-0.68	0.18	12	-3.73	0.009	Duff	-0.10	0.18	12	-0.53	0.607
Litter	0.88	0.17	12	5.10	0.000	Litter	0.15	0.17	12	0.88	0.394	Litter	1.04	0.17	12	5.98	0.000
TotalAll	1.34	0.19	12	6.97	0.000	TotalAll	-0.37	0.19	12	-1.93	0.078	TotalAll	0.97	0.19	12	5.04	0.000

Understory species data was categorized by functional group pre-burn and 1-year post-burn (*Figure 2*); no difference in understory community structure was detected (PERMANOVA, $p > 0.1$).

Figure 2: Understory Cover by Functional Group

This figure consists of two side-by-side box plots comparing the percent cover of four functional groups (Forb, Grass, Shrub, and Tree) under two different treatments: OOPRE (left) and OIYR01 (right). The y-axis represents 'Percent Cover' from 0 to 125. The x-axis represents 'Functional Group'. A legend on the right identifies the colors for each functional group: Forb (dark green), Grass (light green), Shrub (brown), and Tree (orange).

OOPRE Treatment:

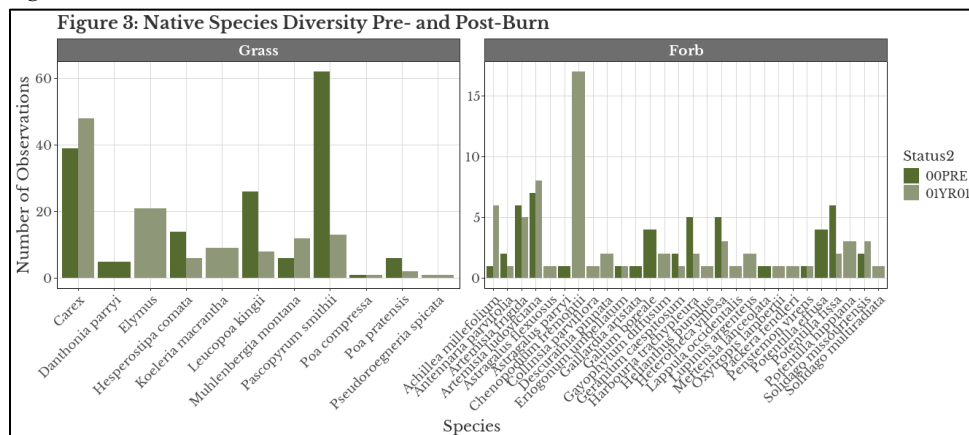
- Forb:** Median cover is approximately 15%. The box ranges from about 10% to 30%. Whiskers extend from 0% to 40%. There is one outlier at approximately 115%.
- Grass:** Median cover is approximately 60%. The box ranges from about 55% to 65%. Whiskers extend from 40% to 70%. There is one outlier at approximately 40%.
- Shrub:** Median cover is approximately 10%. The box ranges from about 5% to 15%. Whiskers extend from 0% to 20%. There is one outlier at approximately 35%.
- Tree:** Median cover is approximately 5%. The box ranges from about 0% to 10%. Whiskers extend from 0% to 10%.

OIYR01 Treatment:

- Forb:** Median cover is approximately 20%. The box ranges from about 15% to 30%. Whiskers extend from 0% to 50%.
- Grass:** Median cover is approximately 50%. The box ranges from about 40% to 55%. Whiskers extend from 15% to 90%. There is one outlier at approximately 95%.
- Shrub:** Median cover is approximately 5%. The box ranges from about 0% to 10%. Whiskers extend from 0% to 10%. There is one outlier at approximately 20%.
- Tree:** Median cover is approximately 5%. The box ranges from about 0% to 10%. Whiskers extend from 0% to 10%.

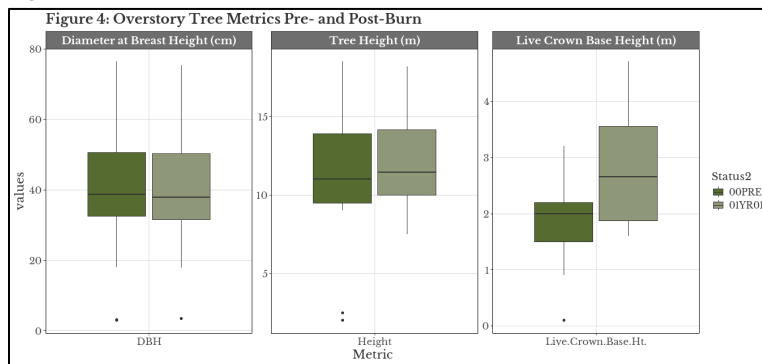
Overall, the OIYR01 treatment results in higher percent cover for Grass compared to the OOPRE treatment. Forb and Shrub coverages are relatively similar between treatments, while Tree coverage is low in both.

Figure 3



18

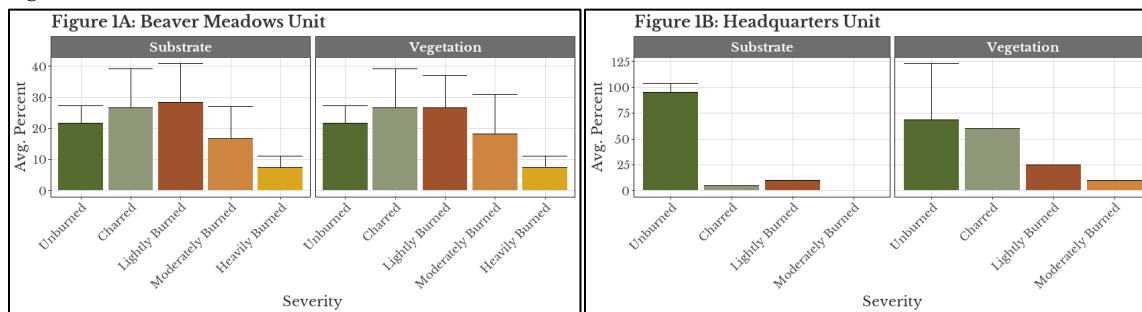
Figure 4



5. Rocky Mountain: Beaver Meadows & Headquarters Units Fall 2025 RX

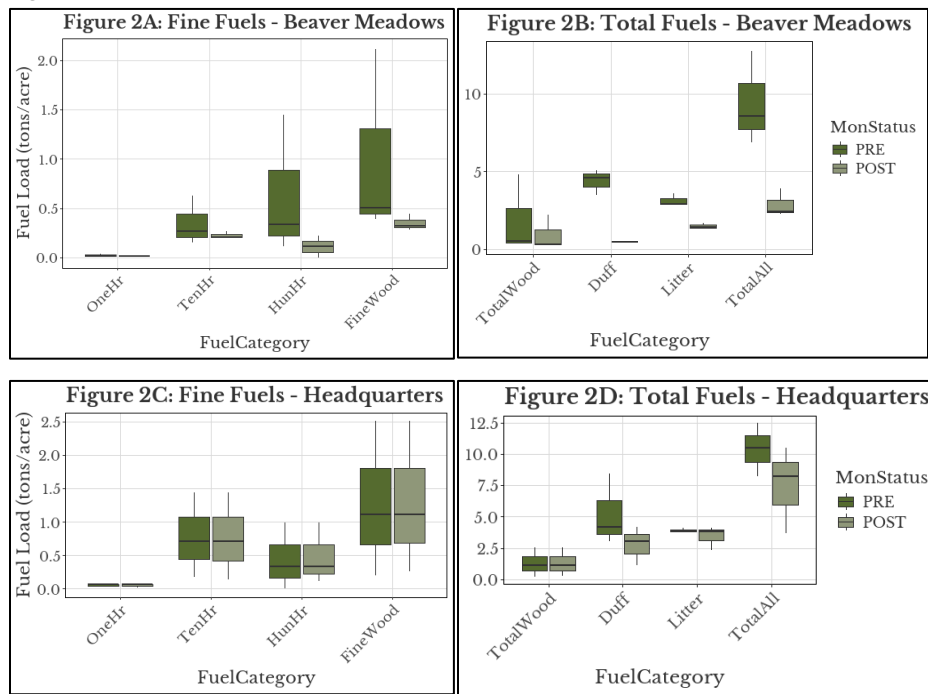
The Beaver Meadows unit had a relatively high density of heavy fuels, and we observed some isolated patches of complete consumption of vegetation, litter, and duff, as well as near complete consumption of logs resulting in visible alteration of mineral soil (“Heavily Burned”). Overall, we observed diverse, patchy fire effects ranging from “Unburned” to “Moderately Burned” in this unit (*Figure 1A*). The Headquarters Unit was burned under more marginal conditions (low temperatures, high RH) and only 1 out of our 3 monitoring plots within block I burned. We observed minimal consumption of vegetation, resulting in nearly unburned litter & duff layer within much of the plot that burned (*Figure 1B*).

Figure 1



We did not detect a difference in overall fuel loads between pre- and post-burn in either the Beaver Meadows unit (*Figures 2A-2B*) or in the Headquarters unit (*Figures 2C-2D*) (log-transformed PERMANOVA, $p > 0.01$).

Figure 2



Pairwise comparisons (linear mixed-effects models with Benjamini-Hochberg p-value adjustment) between “PRE”, and “POST”, were conducted for each fuel category and results for the Beaver Meadows Unit are summarized in *Table 1A*, and Headquarters unit in *Table 1B* (fuel categories where $p < 0.05$ are bolded). Within the Beaver Meadows unit, significant reductions in Duff, Litter, and TotalAll were observed immediately after the burn, indicating detectable surface fuel consumption of non-woody fuels. We did not detect reductions in surface fuel loads within the Headquarters Block I unit, likely due to our limited sample size of 1 burned plot and 2 unburned plots.

Table 1

Fuel Category	Difference	SE	Den. df	t value	p-value
OneHr	0.01	0.03	2	0.44	0.701
TenHr	0.09	0.12	2	0.79	0.513
HunHr	0.44	0.15	2	2.92	0.100
FineWood	0.34	0.22	2	1.51	0.270
TotalWood	0.31	0.20	2	1.58	0.255
Duff	1.41	0.12	2	11.97	0.007
Litter	0.56	0.03	2	17.33	0.003
TotalAll	1.36	0.14	2	9.75	0.010

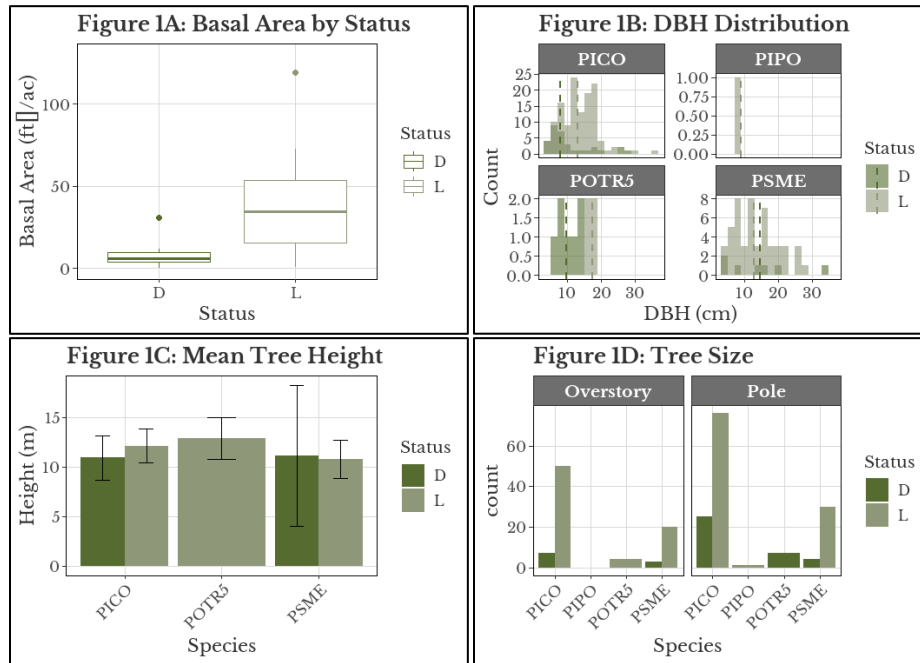
Fuel Category	Difference	SE	Den. df	t value	p-value
OneHr	0.01	0.01	2.000000	1.00	0.423
TenHr	0.02	0.02	2.000000	1.00	0.423
HunHr	-0.11	0.11	2.000000	-1.00	0.423
FineWood	-0.02	0.02	1.994199	-1.00	0.423
TotalWood	-0.02	0.02	1.994199	-1.00	0.423
Duff	0.62	0.46	2.000000	1.36	0.307
Litter	0.15	0.15	2.000000	1.00	0.423
TotalAll	0.54	0.44	2.000000	1.23	0.345

Immediately after the burn, we measured bole char height and canopy scorch for each individual tree within the RX units ($n = 5$ trees). Average height of bole char was 1.2m (max 5m), average height of canopy scorch was 1.8m (max 6m), and average percent canopy scorch was 2% (max 5%).

6. Rocky Mountain: Thunder Mountain MX

The crew inventoried trees within each plot. *Figure 1* summarizes several canopy characteristics; (1A) basal area for live vs. dead trees, (1B) DBH distribution for each observed species, differentiated by live vs. dead, (1C) height (mean $\pm$ 1SD, grouped by species and live vs. dead status), and (1D) tree counts grouped by size class, species, and live vs. dead status. Overstory species observed were *Pinus contorta*, *Pinus ponderosa*, *Pseudotsuga menziesii*, and *Populus tremuloides*.

Figure 1



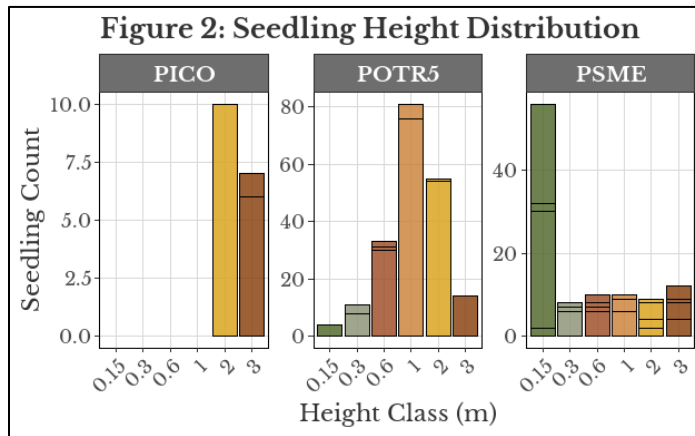
Pre-treatment fuel load (tons/acre) was assessed via modified Brown's transects and values are summarized below (*Table 1*).

Table 1

Macroplot	OneHr	TenHr	HunHr	FineWood	ThoHr_Snd	ThoHr_Rot	TotalWood	Duff	Litter	TotalAll
TM_01	0.1858410	1.742379	4.439739	6.367959	28.245239	11.1472373	45.760436	13.37655	4.092825	63.22981
TM_02	0.2501925	2.209346	2.697503	5.157042	8.130295	2.2792864	15.566623	15.27323	4.317431	35.15728
TM_03	0.4402790	1.845436	2.796292	5.082007	2.619429	0.0000000	7.701436	22.41071	4.367344	34.47949
TM_04	0.4314323	3.314025	3.435346	7.180804	5.757983	0.8357159	13.774503	20.31439	5.066119	39.15501
Average	0.3269362	2.277797	3.342220	5.946953	11.188236	3.5655599	20.700749	17.84372	4.460930	43.00540

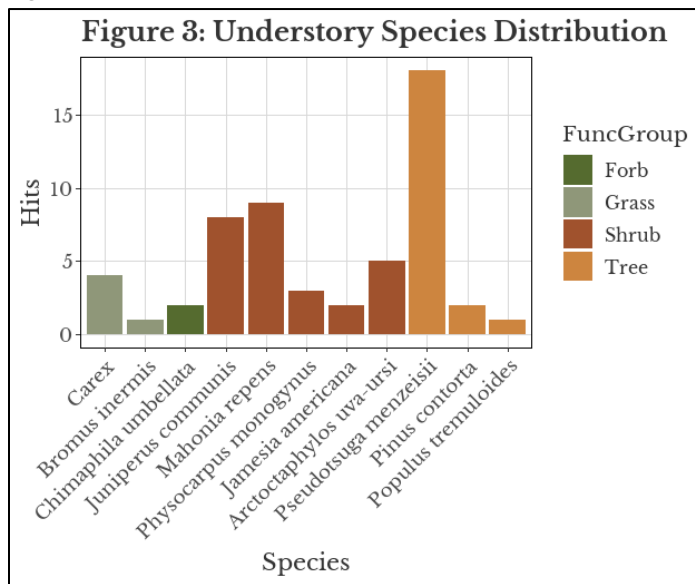
Seedlings were inventoried for each plot and categorized based on height. We observed *Pinus contorta*, *Populus tremuloides*, and *Pseudotsuga menzeisii*; seedling distributions by species and size class are summarized below (*Figure 2*).

Figure 2



Understory species composition was mainly composed of shrub species (*Juniperus communis*, *Mahonia repens*, *Physocarpus monogynus*, *Jamesia americana*, and *Arctostaphylos uva-ursi*), followed by tree species (*Pseudotsuga menzeisii*, *Pinus contorta*, and *Populus tremuloides*), then grasses (*Carex sp.*, and *Bromus inermis*), and forbs (*Chimaphila umbellata*) (Figure 3).

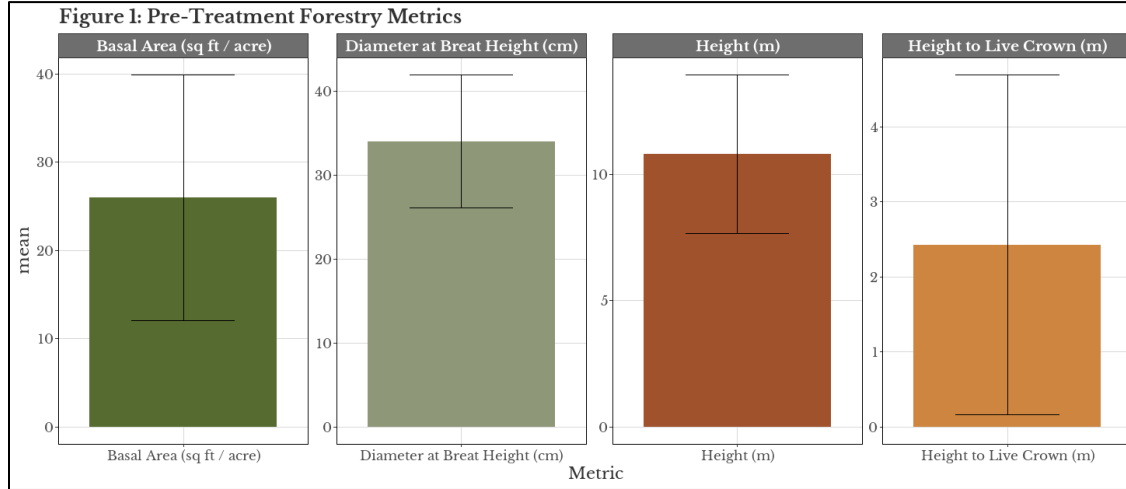
Figure 3



7. Rocky Mountain: Eagle Cliff RX Unit

Pre-treatment forestry metrics are summarized in *Figure 1* as average values across plots ± 1 standard deviation. Most of the individual trees observed within our plots were *Pinus ponderosa*, overstory (DBH > 15cm). We inventoried 19 trees, 9 living, and 10 snags.

Figure 1



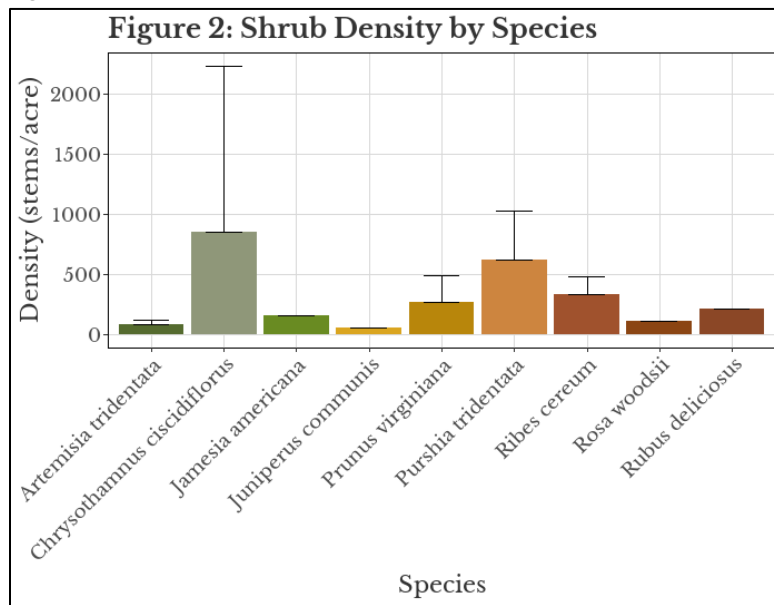
Pre-treatment fuel loads were assessed via modified Brown's transects, and data is summarized in *Table 1*. Total fuel load (sum of loads of individual fuel categories) ranged from around 5 tons/acre to around 30 tons/acre on our 6 plots, with an average total fuel load of roughly 16 tons/acre.

Table 1

Macroplot	OneHr	TenHr	HunHr	FineWood	ThoHr_Snd	ThoHr_Rot	TotalWood	Duff	Litter	TotalAll
EC_01	0.02400888	0.4734322	2.1055349	2.6029760	0.0000000	18.189079	20.7920546	5.939588	3.169444	29.901086
EC_02	0.01818855	0.3759609	0.8865410	1.2806904	0.6267869	7.660551	9.5680284	1.147987	1.247812	11.963828
EC_03	0.16005920	1.3228252	4.4327051	5.9155896	1.8419860	6.477064	14.2346400	4.542038	3.369094	22.145771
EC_04	0.02764659	0.2924140	0.1108176	0.4308782	0.0000000	0.000000	0.4308782	1.796850	2.944838	5.172566
EC_05	0.02837413	0.4316588	2.1055349	2.5655678	3.6246333	0.000000	6.1902011	3.094575	4.442213	13.726989
EC_06	0.05092793	0.2506406	0.0000000	0.3015685	0.0000000	7.883871	8.1854390	1.197900	2.820056	12.203395
Average	0.05153421	0.5244886	1.6068556	2.1828784	1.0155677	6.701761	9.9002069	2.953156	2.998909	15.852273

Across plots, we only observed 4 seedlings, 3 *Pinus ponderosa* ranging from 30cm to 1m, and 1 *Pseudotsuga menzeisii* that was 1m tall. We observed high diversity in shrub community composition within the burn unit, with 9 species represented within our plots (*Figure 2*). Average shrub density across our plots was roughly 1,600 stems/acre (min = 425 stems/acre, max = 4700 stems/acre).

Figure 2



Understory functional group composition was roughly 60% grass, 20% forb, and 20% shrub species. Species diversity is summarized below in *Figure 3*.

Figure 3

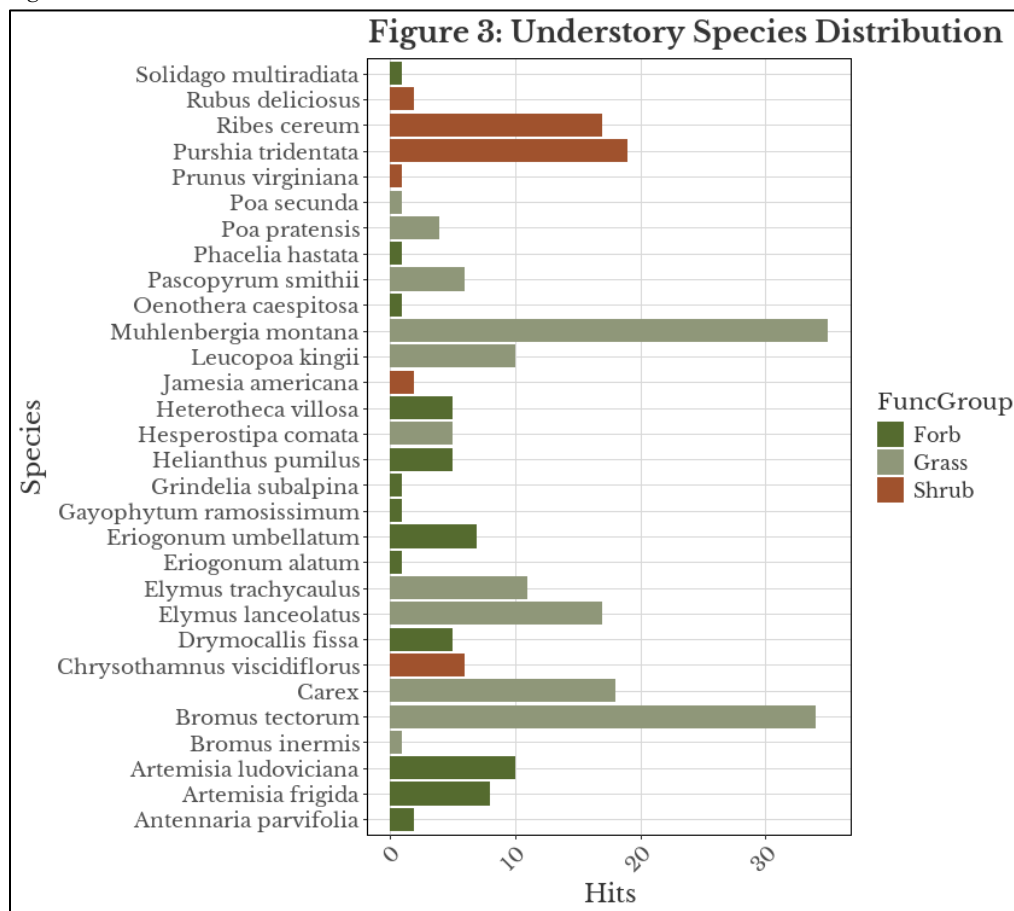


Table 2. 2025 Management Objectives and Monitoring Results

Fuel reduction objectives/results are mean percent reduction from pre-burn to immediate post-burn. Stand density objectives/results are for five-year post-burn mean stand density. An underlined number of plots indicates that the minimum sample size has been attained for that variable.

Monitoring Unit	Management Objective	Monitoring Results (w/level of certainty)	Progress Towards Meeting Objectives
Bighorn Basin RX <i>DINO</i>	Reduce sagebrush cover 60-100% post-fire	Sagebrush cover reduced 81% post-fire	Objective achieved
	Increase native grass cover to 30% within 2 years post-fire	Native grass cover Yr02: 21%, Yr04: 36%, Yr07: 45%, Yr12: 27%, Yr20: 69%	Objective not achieved 2 years post-fire
East Troublesome WF <i>ROMO</i>	NA	Basal area, dead tree density higher in unburned plots 1-hr, 10-hr 1000-hr rotten, litter, duff loading higher in unburned plots Understory diversity higher in burned plots (<i>n</i> =14 plots: 7 burned, 7 unburned; see tables for <i>p</i> values)	NA
Headquarters RX <i>ROMO Spring 2025</i>	40-80% reduction of dead fuels	47% reduction in dead fuels (<i>n</i> =6 plots)	Objective achieved
	Increase crown base height 1-6 feet	Crown base height increased 0.9 meters (3 feet; <i>n</i> =6 plots)	Objective achieved
	Reduce stand density by no more than 30%	No mortality following burn (<i>n</i> =6 plots)	Objective achieved
Headquarters RX <i>ROMO Fall 2024</i>	40-80% reduction of dead fuels	69% reduction in dead fuels (<i>n</i> =7 plots)	
	Increase crown base height 1-6 feet	Crown base height increased 0.7 meters (2.3 feet; <i>n</i> =7 plots)	
	Reduce stand density by no more than 30%	No mortality following burn (<i>n</i> =7 plots)	
Beaver Meadows / Headquarters RX <i>ROMO Fall 2025</i>	40-80% reduction of dead fuels	70% reduction (Beaver Meadows unit; <i>n</i> =3) 24% reduction Headquarters unit; <i>n</i> =3)	Objective achieved Beaver Meadows unit Objective not achieved Headquarters unit
	Increase crown base height 1-6 feet	Crown base height increased 1.8 meters (5.9 feet; Beaver Meadows unit; <i>n</i> =3)	Objective achieved Beaver Meadows unit
	Reduce stand density by no more than 30%	No mortality following burn (Both units; <i>n</i> =6 plots)	Objective achieved
Thunder Mountain MX <i>ROMO</i>		Not yet treated	
Eagle Cliff RX <i>ROMO</i>	40-80% reduction of dead fuels	Not yet treated	
	Increase crown base height 1-6 feet	Not yet treated	
	Reduce stand density by no more than 30%	Not yet treated	

C. Research, Planning, and Communication

NPS Reserve Fund Research

Rocky Mountain National Park received Research Reserve Funding for the following project:

Using the 2020 Wildfires in Rocky Mountain National Park to Address Critical Fire Management Questions

This project has four primary objectives: 1) an investigation of the effectiveness of past fuels treatments under the fire weather conditions experienced in 2020 and in the context of extensive pre-fire bark beetle mortality; 2) potential post-fire vegetation and fuel trajectories in the context of climate change and associated impacts on disturbance; 3) with increased fire activity expected due to changing climatic conditions, will fire become a self-limiting process on the landscape? 4) can managers utilize aspen as a fire management tool? Rocky Mountain National Park is considering the promotion of aspen within fuels treatments to increase the longevity of those treatments.

Current Project Status: Task agreement expired December 31, 2024. Deliverables and Final Report not received. Working with ROMO Research Coordinator on best approach to resolving situation.

NPS Natural Resource Condition Assessment Program

Proposal funded through the NPS Natural Resource Condition Assessment Program to conduct a Focused Condition Assessment utilizing existing ROMO fire effects monitoring data. This project will allow users to view status and trends of long-term fire effects monitoring data through an ArcGIS dashboard without the need for extensive calculations or data manipulation. The products of this project will be used for planning, and prioritizing forest management actions and future data collection efforts.

Monitoring Plans

A draft ROMO Fire Monitoring Plan has been completed and reviewed by the IMR Fire Ecologist and IMR Northern Zone Fire Planner. Awaiting park-level review by Resources Stewardship Division staff. Review comments are being addressed. Work continues on remaining park monitoring plans along with Fire Management Plan updates.

Planning

- Participated in annual Preparedness Reviews and assisted with completion of annual updates to Fire Management Plans for Colorado Front Range parks (FLFO, GRSA, ROMO)
- Represented Fire Management in ROMO Tribal Consultation meetings
- Represented Fire Management in ROMO Wilderness Committee meetings
- Represented Fire Management in ROMO Research Committee meetings
- Participated in Fire/Cultural Resources Program Planning meetings
- Participated in IMR Fuels Management Workshop
- Interdisciplinary Team member for DINO and Black Canyon of the Gunnison National Park (BLCA) Fire Management Plans/EAs

Communication

- Nate and Christina presented on fire ecology and fire effects monitoring at the ROMO Winter Science Symposium
- Nate presented on fire effects monitoring at RX-300 Prescribed Fire Burn Boss course

D. Future Direction

With new Fire Management Plans at most of the parks we cover, we are looking forward to initiating new monitoring efforts at parks such as DINO and Florissant Fossil Beds (FLFO) as new fuels management treatments are developed. The bulk of the 2026 monitoring workload is expected to again be focused on ROMO and DINO, however we are very excited about the possibility of assisting the Northern Colorado Plateau Inventory & Monitoring Network with post-wildfire monitoring of the South Rim fire at BLCA. Continued broadcast burning is planned at ROMO within the Front Country prescribed fire unit with associated plot work and FEMO responsibilities. Monitoring of mechanical thinning treatments will also continue at ROMO.

Although many aspects of the transition to the new US Wildland Fire Service remain uncertain, we have a strong, capable, and adaptable team in place. While challenges are expected, we will approach this transition with professionalism, flexibility, and a positive attitude. We are also encouraged that announcements for permanent Lead and Assistant Lead Monitor positions transitioning to the GW-0456 series will be posted soon, which will provide pay parity for monitoring staff. Throughout this transition, we will remain focused on data collection and analysis to evaluate fuels treatment effectiveness and inform management decisions.

E. References, Links, and Additional Reading

This report and past annual reports can be found on the NPS DataStore. Updated FFI database backup files will be posted to the NPS DataStore as soon as they are available. Previous backup files can be found in the following locations:

Williamson, N. (2025). Dinosaur National Monument FFI Fire Effects Monitoring Data. Dinosaur National Monument, Colorado and Utah.
<https://irma.nps.gov/DataStore/Reference/Profile/2313970>

Williamson, N. (2025). Rocky Mountain National Park FFI Fire Effects Monitoring Data. Rocky Mountain National Park, Colorado.
<https://irma.nps.gov/DataStore/Reference/Profile/2313971>

Williamson, N. (2022). Great Sand Dunes National Park & Preserve FFI Fire Effects Monitoring Data. Great Sand Dunes National Park & Preserve, Colorado.
<https://irma.nps.gov/DataStore/Reference/Profile/2293845>

Williamson, N. (2017). Black Canyon of the Gunnison National Park FFI Fire Effects Monitoring Data. Black Canyon of the Gunnison National Park, Colorado.
<https://irma.nps.gov/DataStore/Reference/Profile/2238151>

Williamson, N. (2017). Colorado National Monument FFI Fire Effects Monitoring Data. Colorado National Monument, Colorado.
<https://irma.nps.gov/DataStore/Reference/Profile/2238153>

Williamson, N. (2017). Curecanti National Recreation Area FFI Fire Effects Monitoring Data. Curecanti National Recreation Area, Colorado.

<https://irma.nps.gov/DataStore/Reference/Profile/2238154>

Williamson, N. (2017). Florissant Fossil Beds National Monument FFI Fire Effects Monitoring Data. Florissant Fossil Beds National Monument, Colorado.

<https://irma.nps.gov/DataStore/Reference/Profile/2238156>



Moraine Park from Eagle Cliff; Rocky Mountain National Park, October 2025



Appendix A. Staffing and Accomplishments

The Lead Monitor position is now a permanent, full-time position. Both Christina Fossum (Lead Monitor) and Nate Williamson (Fire Ecologist) worked a full 26 pay periods in 2025. Aline Johnson and Ainsley Lightcap were hired as GS-5 seasonal monitors and started their seasons in late April. Aline worked for 8 pay periods in her seasonal position and an additional 6 pay periods as our new GS-6 career seasonal Assistant Lead Monitor. Ainsley worked for a total of 14 pay periods. All Fire Ecology staff were red carded at the arduous level and participated in wildland fire assignments as qualified, including initial attack at ROMO as well as out of park assignments.

Fire Ecology personnel participated in multiple initial attack and extended attack suppression assignments in Colorado, Wyoming, South Dakota, Oregon, and Washington in a variety of trainee and qualified positions. Christina participated in a Prescribed Fire Leadership Module session through NIPFTC (National Interagency Prescribed Fire Training Center) in January. Christina was able to work on multiple task books this year and was signed off as Fire Effects Monitor (FEMO), Firefighter Type 1 (FFT1), and Incident Commander Type 5 (ICT5) in 2025! Aline participated in a prescribed fire on the Arapaho-Roosevelt National Forest as FEMO-T and was invited to roster with the Alpine Interagency Hotshot Crew for multiple assignments. Ainsley participated in multiple project and wildfire helicopter assignments and was signed off as Helicopter Crewmember (HECM) this season. Nate participated in 2 assignments with Rocky Mountain Area Complex Incident Management Team 1 as Situation Unit Leader (SITL) and Planning Section Chief Complex trainee (PSCC-T) in addition to several ICT5 assignments at ROMO.

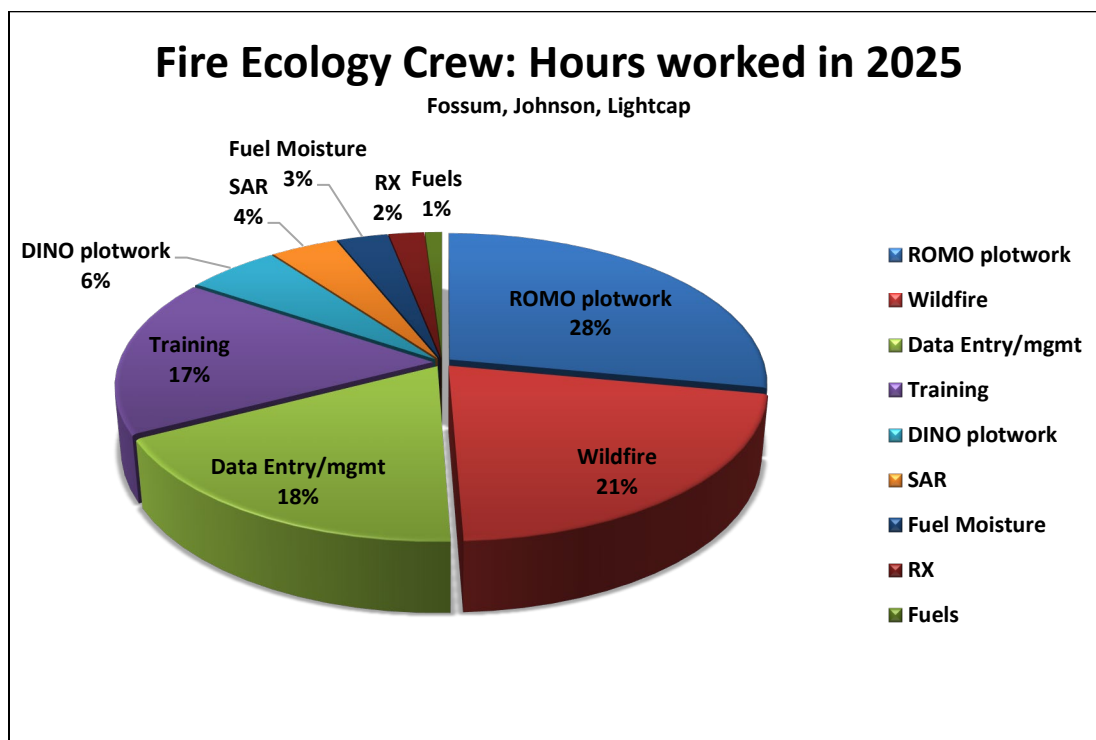


Table A-1. Fire Ecology Staffing 2025

Ecologist and Monitors	Position	Appointment Length	Training and Development
Nate Williamson	Fire Ecologist	Permanent, Full Time	RT-130, L-481, IMR Fuels Workshop; Burn Plan Workshop, all required agency training; Initiated PSCC task book
Christina Fossum	Lead Monitor	Permanent, Full Time	RT-130, National Interagency Prescribed Fire Leadership Module (NIPFTC), EMT Refresher, Burn Plan Workshop, all required agency training; Completed FEMO, FFT1, ICT5 task books
Aline Johnson	Seasonal Monitor / Assistant Lead Monitor	Temp: 8 pay periods (April - July) Career Seasonal: 6 pay periods (August – October)	RT-130, S-212, S-290 N9042, all required agency training; Initiated FEMO, FAL3 task books
Ainsley Lightcap	Seasonal Monitor	Temp: 14 pay periods	S-130/190, S-212, S-270, S-271, S-290, L-180, N9042, EMT Refresher, all required agency training; Initiated FEMO, FAL3, HECM task books; Completed HECM task book

Table A-2. Fire Ecologist 2025 Accomplishments/Focus Areas

Category	Percent Time	Accomplishments and/or areas of activities
Planning	15%	FMP updates (ROMO, GRSA, FLFO) Acting FMO Monitoring Plans Fuels treatment planning
Presentations	5%	Fire Ecology/Fuels presentation at ROMO Winter Science Symposium Monitoring presentation at RX-300 Prescribed Fire Burn Boss Course Panelist at IMR Fuels Management Workshop
Meetings/task groups	15%	ROMO Wilderness Committee meetings Fire Management/Cultural Resource compliance meetings Tribal Consultation meetings IMR/MWR Fire Ecology meetings IMR Fuels meetings IMR FMO meetings Rocky Mountain Area Complex Incident Management Team meetings NPS Fire Weather Committee WFDSS Geographic Area Editor Northern Colorado Dispatch Board of Directors Training Sub-Committee TLS Monitoring Community of Practice
Wildfire assignments	10%	ICT5 on in-park initial attack, SITL and PSCC-T on Rocky Mountain Area CIMT

Category	Percent Time	Accomplishments and/or areas of activities
Prescribed fire/fuels treatment projects	<5%	FEMO on Front Country RX (ROMO)
Research	5%	ATR on 2020 wildfire project (ROMO) ATR on Fire Effects Data Visualization project (ROMO)
Field work/data collection	5%	Estimated amount of time spent in the field collecting data; include time spent preparing for field work and travel time to plot locations
Data management	5%	Estimated amount of time spent entering data from paper to FFI database, managing data in FFI, preparing and/or archiving data, and/or conducting quality control activities
Data analysis	10%	Estimated amount of time spent performing analyses, including data summaries and statistical tests
Supervision/admin tasks	20%	Hiring, supervision, payroll, travel authorization/vouchers, purchasing, etc. Acting Fire Management Officer Coordinated purchase and distribution of wind speed/direction sensors for IMR RAWS to replace obsolete equipment IQCS, managing printer/copier service, managing wireless account, toll road account for fire vehicles, miscellaneous program purchasing, etc.
Training	5%	RT-130, L-481, all required agency training
Miscellaneous	<5%	Completed annual maintenance on Sand Dunes RAWS



Rocky Mountain iris (Iris missouriensis), alpine sunflower (Hymenoxys grandiflora), silvery lupine (Lupinus argenteus); Rocky Mountain National Park, 2025

Table A-3. Fire Effects Crew 2025 Accomplishments/Focus Areas

Category	Percent Time	Notes
Data collection	35%	Estimated amount of time spent collecting plot data; includes any preparation time and travel time to local plot locations
Wildfire assignments	20%	Identify types of assignments (e.g., FEMO, FFT1, GISS, PIO2); include REAF/READ (Resource Advisor) and BAER/BAR activities
Prescribed fire/fuels treatment projects	<5%	FEMO on Front Country RX at ROMO
Travel out-of-park for plot or project work	<5%	Travel to/from DINO
Data entry/management	15%	Estimated amount of time spent entering data from paper to FFI database, managing data in FFI, preparing or archiving data, and/or conducting quality control activities
Data analysis	10%	Time spent assisting Fire Ecologist in data analysis tasks
Administrative activities	5%	Payroll, travel authorization/voucher, etc., crew lead tasks
Training	15%	RT-130, S-130/190, S-212, S-270, S-271, S-290, L-180, N9042, EMT Refresher, National Interagency Prescribed Fire Leadership Module (NIPFTC), Burn Plan Writing Workshop, Search and Rescue, all required agency training
Miscellaneous	<5%	Search and Rescue operations



Christina, Aline, and Ainsley; Horse Draw Fire, June 2025

Appendix B. History of Fire Effects Monitoring Plots

Table B-1. All Fire Effects Plots Established

Park	Monitoring Unit	Plot Type (FMH Forest/Brush/Grass plot, photo point, Rapid Assessment, CBI, etc.)	Years Data Collected (start-end)	Total Plots
Black Canyon of the Gunnison	Green Grizzly Rx	Line Intercept Transect	2009-2011	14
Colorado	Liberty Cap Rx	Point Intercept Transect	2009 - 2014	7
Colorado	Monument Mesa Rx	Point Intercept Transect	2009 - 2014	2
Colorado	Red Canyon Rx	Point Intercept Transect	2009 - 2014	4
Colorado	Ute Mesa Rx	Point Intercept Transect	2009 - 2014	15
Curecanti	Soap Creek Rx	FMH Forest Plot	2011	1
Curecanti	Soap Creek Rx	Photo-Point	2011	6
Dinosaur	Bear WF	Point Intercept Transect	2008 - 2021	4
Dinosaur	Bighorn Basin Rx	Point Intercept Transect	2002 - 2025	10
Dinosaur	Buster Flats WF	Point Intercept Transect	2009 - 2017	10
Dinosaur	Chew Basin Rx	Point Intercept Transect	1995 - 2017	15
Dinosaur	Disappointment Draw Rx	Point Intercept Transect	2002 - 2020	10
Dinosaur	Dry Woman Springs WF	Point Intercept Transect	1983 - 2023	10
Dinosaur	East Cactus Rx	Point Intercept Transect	1987 - 2020	10
Dinosaur	Green Mountain Slope Rx	Point Intercept Transect	1992	9
Dinosaur	HQ Housing Area Chemical	Modified Daubenmire	2009 - 2011	5
Dinosaur	Iron Mine Draw Rx	Point Intercept Transect	1999	5
Dinosaur	Iron Springs Bench Rx	Point Intercept Transect	1994 - 2015	11
Dinosaur	Lake Bench WF	Point Intercept Transect	2018	8
Dinosaur	Lake Bench WF	Photo-Point	2018	11
Dinosaur	Lower Disaster Falls WF	Point Intercept Transect	1996 - 2016	10
Dinosaur	Pearl Park Rx	Point Intercept Transect	2004 - 2024	10
Dinosaur	Peterson WF	Point Intercept Transect	2003 - 2017	6
Dinosaur	Pot Creek Rx	Point Intercept Transect	1997 - 2019	10
Dinosaur	Ruple Ranch Rx	Point Intercept Transect	1999 - 2019	10
Dinosaur	Slaugh Wall Rx	Point Intercept Transect	1992 - 2019	10

Park	Monitoring Unit	Plot Type (FMH Forest/Brush/Grass plot, photo point, Rapid Assessment, CBI, etc.)	Years Data Collected (start-end)	Total Plots
Dinosaur	Split Mountain WF	Age Analysis	2007	20
Dinosaur	Success WF	Point Intercept Transect	1981 - 2012	9
Dinosaur	Thanksgiving Gorge WF	Point Intercept Transect	1981 - 2019	8
Dinosaur	West Cactus I Rx	Point Intercept Transect	1986 - 2016	13
Dinosaur	West Cactus II Rx	Point Intercept Transect	1988 - 2018	10
Dinosaur	Wild-Hacking WF	Point Intercept Transect	2014 - 2018	4
Dinosaur	Zenobia Basin WF	Point Intercept Transect	1988 - 2010	8
Florissant Fossil Beds	Mixed Conifer – Manual Treatment	FMH Forest Plot	2001 - 2004	4
Florissant Fossil Beds	Mixed Conifer – Manual Treatment	Photo-Point	2002	70
Florissant Fossil Beds	Ponderosa Pine	FMH Forest Plot	2000 - 2002	2
Florissant Fossil Beds	Ponderosa Pine – Manual Treatment	FMH Forest Plot	2001 - 2004	3
Florissant Fossil Beds	Ponderosa Savanna	FMH Forest Plot	2000 - 2002	3
Florissant Fossil Beds	Ponderosa Savanna	Rapid Assessment	2014 - 2016	8
Great Sand Dunes	Medano WF	Composite Burn Index	2011	26
Great Sand Dunes	Pinyon Flats HFR	Photo-Point	2002	7
Great Sand Dunes	San Luis Valley Ponderosa Savanna	FMH Forest Plot	1998 - 2001	6
Great Sand Dunes	San Luis Valley Rabbitbrush Prairie	FMH Forest Plot	1999	2
Great Sand Dunes	San Luis Valley Rabbitbrush Prairie	FMH Brush Plot	2009 - 2019	19
Rocky Mountain	Front Range Ponderosa Pine	FMH Forest plot + TLS	1999 - 2025	19
Rocky Mountain	Ponderosa Savanna	FMH Forest plot + TLS	1998 - 2025	14
Rocky Mountain	Ponderosa Savanna	Rapid Assessment + TLS	2018 - 2025	20
Rocky Mountain	Eastside Lodgepole Pine – Manual Treatment	FMH Forest plot	2001 - 2022	6
Rocky Mountain	Eastside Lodgepole Pine – Manual Treatment	Photo point	2001	73

Park	Monitoring Unit	Plot Type (FMH Forest/Brush/Grass plot, photo point, Rapid Assessment, CBI, etc.)	Years Data Collected (start-end)	Total Plots
Rocky Mountain	Big/Common Sagebrush	FMH Forest plot	1999 - 2023	8
Rocky Mountain	Lower Montane - Mixed Conifer	FMH Forest plot	1998 - 2022	21
Rocky Mountain	Lower Montane - Mixed Conifer	Photo point	2002	3
Rocky Mountain	Lodgepole Pine - West Slope	FMH Forest plot / Rapid Assessment + TLS	1998 - 2025	14
Rocky Mountain	Eagle Cliff RX	Rapid Assessment + TLS2025	2025	6
Rocky Mountain	Thunder Mountain MX	Rapid Assessment + TLS	2025	4
Rocky Mountain	Bear Lake HFR	Rapid Assessment	2015 - 2019	2
Rocky Mountain	Deer Mountain HFR	Rapid Assessment	2015 - 2019	20
Rocky Mountain	Glacier/Mills HFR	Rapid Assessment	2015 - 2019	7
Rocky Mountain	Grand Lake HFR	Rapid Assessment	2002 - 2004	8
Rocky Mountain	Sprague Lake HFR	Rapid Assessment	2015 - 2019	2
Rocky Mountain	Mixed Conifer HFR	Rapid Assessment	2021 - 2022	17
Rocky Mountain	Cow Creek WF	Composite Burn Index	2011	18
Rocky Mountain	Aspen Regeneration	Belt Transect	2021 - 2023	8
Total				715

Appendix C. Fire Effects Rapid Assessment Protocol

Appendix D. Bighorn Basin Prescribed Fire Project: Year 20

Appendix E. 2025 Front Country RX (Spring) Fire Effects Monitoring Report

Appendix F. 2025 Beaver Meadows / Front Country RX (Fall) Fire Effects Monitoring Report