



**03.01 Walker Flats La Jicarita
2023 Post-Wildfire Immediate
Field Inventory Summary
New Mexico Forest and Watershed Restoration Institute**



Photo by NMFWR Field Crew

Submitted by

Emily Yannayon, *Ecological Monitoring Specialist*

Kathryn Mahan, *Monitoring Program Manager*

Carmen Melendez, *Crew Logistics Support*

Abbi Han, *Monitoring & GIS Specialist*

January 2026

Table of Contents

Table of Contents	2
Figure List	4
Table List	6
Introduction and Project Description	7
Treatment History	7
Monitoring Methods.....	9
Disclaimer.....	9
Summary	10
NMSU Monitoring.....	10
NMFWRM Monitoring Data Summary	10
Management Implications:	12
Monitoring Results.....	19
Overstory trees	19
Growing Stock	22
Survival.....	22
Height and Live Crown Base Height	22
Basal Area, Trees per Acre, and Quadratic Mean Diameter	23
Damages.....	30
Char & Scorch.....	33
Regeneration: Trees & Shrubs	34
Understory & Forest Floor Component	41
Ground Cover	41
Aerial Cover.....	43
Tree Canopy	44
Surface Fuels Vegetation (Ladder Fuels).....	45
Surface Fuels	49
Litter and Duff.....	50
Fine Fuels	52
Thousand-Hour Fuels	54
Photo Comparisons:.....	57
Additional Resources	65
Works Cited.....	65

Supplementary Information 66

 Species Lists 66

 Plot Center Coordinates..... 67

 Abbreviations & Acronyms 68

 Mean Percent Cover 68

 1000-Hour Fuel Decay Class Descriptions..... 68

 Tree Metrics 70

 Regeneration: Seedlings and Saplings 81

 Stand Tables 90

Figure List

Figure 1. Regional overview map of the 03.01 La Jicarita Walker Flats CFRP project.....	14
Figure 2. Composite Burn Index of the 03.01 La Jicarita Walker Flats CFRP project following the 2022 Hermit's Peak Calf Canyon fire	15
Figure 3. Map of color infrared of 03.01 La Jicarita Walker Flats CFRP project before and after the Hermit's Peak Calf Canyon fire.....	16
Figure 4. Map of NAIP Imagery of 03.01 La Jicarita Walker Flats CFRP Project before and after the Hermit's Peak Calf Canyon wildfire.....	17
Figure 5. 31.10 Walker Flats Final Phase Trujillo CFRP project with monitoring plots and contour lines..	18
Figure 6. Growing stock species composition by status across all measurement periods for all growing stock overstory trees (>1" DBH). There were no growing stock trees in the untreated plots 2023 immediately post-wildfire.....	20
Figure 7. Snag species composition by status across all measurement periods for all growing stockoverstory trees (>1" DBH).	21
Figure 8. Percent growing stock tree survival across treatment units.	22
Figure 9. Mean height and live crown base height for growing stock trees (>1" DBH, live + sick status). Mean values represent averages of plot means for each monitoring and treatment status.	23
Figure 10. Mean basal area, for growing stock trees across all measurement periods (>1" DBH, live + sick status) by Treatment and Monitoring Status.	25
Figure 11. Mean basal area for snags across measurement periods (>1" DBH) by Treatment and Monitoring Status	26
Figure 12. Mean trees per acre for growing stock trees across all measurement periods (>1" DBH, live + sick status) by treatment status.....	27
Figure 13. Mean trees per acre for snags across measurement periods (>1" DBH) by treatment unit.....	28
Figure 14. Quadratic mean diameter for growing stock trees across all measurement periods (>1" DBH, live + sick status) by treatment status.	29
Figure 15. Quadratic mean diameter for snags across measurement periods (>1" DBH) by treatment status.....	30
Figure 16. Mean char and scorch heights for trees measured immediately post-wildfire. Mean values represent averages of plot means for each monitoring status and each treatment unit.	34
Figure 17. Regeneration densities of trees and shrubs in the seedling and saplings classes across all measurement periods for the thinned treatment unit.	35
Figure 18. Regeneration densities of dead trees and shrubs in the seedling and sapling classes across all measurement periods for the thinned treatment unit. In the 2010 and 2015 measurements, crews did not differentiate between live and dead regen.....	36
Figure 19. Regeneration densities of trees and shrubs in the seedling and saplings classes across all measurement periods for the thinned & burned treatment unit.	37
Figure 20. Regeneration densities of dead trees and shrubs in the seedling and sapling classes across all measurement periods for the thinned & burned treatment unit.	38
Figure 21. Regeneration densities of trees and shrubs in the seedling and saplings classes across all measurement periods for the untreated unit.	39
Figure 22. Regeneration densities of dead trees and shrubs in the seedling and sapling classes across all measurement periods for the untreated unit.	40

Figure 23. Mean percent ground cover by monitoring status and cover class for the thinned treatment unit.	41
Figure 24. Mean percent ground cover by monitoring status and cover class for the thinned & burned treatment unit.	42
Figure 25. Mean percent ground cover by monitoring status and cover class for the untreated unit.	42
Figure 26. Mean percent aerial cover by monitoring and treatment status.	43
Figure 27. Mean percent closed tree canopy by monitoring and treatment status. Note the 10% error bar on measurements from the 2015 PostTreatment10yr monitoring period.	45
Figure 28. Mean ladder fuel biomass by vegetation type across monitoring and treatment status.	47
Figure 29. Mean litter and duff loads by monitoring and treatment status.	51
Figure 30. Mean fine fuel loads by monitoring and treatment status.	53
Figure 31. Mean thousand-hour fuel loads by monitoring status for all treatment units.	55
Figure 32. Proportions of thousand-hour fuels by decay class, monitoring, and treatment status.	56
Figure 33. The following figures show tree (>1" DBH) metrics at the species level by status and measurement period for plots that received thinning treatments.	70
Figure 34. The following figures show tree (>1" DBH) metrics at the species level by status and measurement period for plots that received thinning and prescribed burn treatments.	74
Figure 35. The following figures show tree (>1" DBH) metrics at the species level by status and measurement period for plots that received no treatments.	78
Figure 36. The following figures show seedling and sapling densities by status and measurement period for plots that received thinning treatments.	81
Figure 37. The following figures show seedling and sapling densities by status and measurement period for plots that received thinning & prescribed burn treatments.	84
Figure 38. The following figures show seedling and sapling densities by status and measurement period for plots that received no treatments.	87

Table List

Table 1. Sample size of treatment statuses across the 03.01 La Jicarita Walker Flats CFRP Project Area... 8	8
Table 2. Percent of project acreage by Composite Burn Index (CBI), for 9	9
Table 3. Summary of NMSU Monitoring from 2003 pre-treatment and 2009 post-treatment. 10	10
Table 4: Summary statistics for 03.01 Walker Flats La Jicarita across all monitoring periods and Treatment Statuses (TxStatus)..... 13	13
Table 5. Species found in the overstory composition, by USDA species symbol, scientific name, and common name. 19	19
Table 6. List of damages observed on growing stock trees across all measurement periods by code and description for the Corrales treatment unit. 32	32
Table 7. Counts of damages recorded to dead trees across monitoring periods by treatment status. 33	33
Table 8. Percentages of trees with recorded char or scorch across all treatment units immediately post-wildfire. 34	34
Table 9. Mean ground cover by monitoring and treatment status. 43	43
Table 10. Mean percent aerial cover by monitoring and treatment status. 44	44
Table 11. Mean ladder fuel biomass by vegetation type across monitoring and treatment status. Total biomass of ladder fuels is also displayed. 48	48
Table 12. Fuel loads by type, monitoring status, and treatment unit. 49	49
Table 13. Mean litter and duff depth in inches by monitoring and treatment status. 52	52
Table 14a-b. List of observed tree and shrub species by species symbol, scientific name, and common name 66	66
Table 15. List of plots coordinates by plot name, latitude, and longitude 67	67
Table 16. List of abbreviated terms by abbreviation and definition 68	68
Table 17: Mean percent cover data for plots across 2010 and 2015 monitoring periods. Different protocols were used these years. 68	68
Table 18: Descriptions of 1000-hour fuel decay classes..... 68	68
Table 19. Stand table of species metrics for the 2010 post-treatment 5yr monitoring period. 90	90
Table 20. Stand table of species metrics for the 2015 post-treatment 10yr monitoring period. 92	92
Table 21. <i>Stand table of forestland species metrics for the 2020 post-treatment 15yr measurement period</i> 94	94
Table 22. Stand table of forestland species metrics for the 2023 post-wildfire immediate measurement period..... 96	96

Introduction and Project Description

The Southwest Ecological Restoration Institutes (SWERI) includes three university-based restoration institutes: the New Mexico Forest and Watershed Restoration Institute (NMFWRI), the Colorado Forest Restoration Institute (CFRI), and the Ecological Restoration Institute (ERI) in Arizona. These institutes work together to develop a program of applied research and service to help create healthy forests, prevent wildfires, sustain the resiliency of water supplies to wildfires, and create jobs. NMFWRI is located at Highlands University (HU) in Las Vegas, NM. According to the Southwest Forest Health and Wildfire Prevention Act (P.L. 108-317), the authorizing legislation for the SWERI, the purpose of the institutes is to “promote the use of adaptive ecosystem management to reduce the risk of wildfires and restore the health of forest and woodland ecosystems in the Interior West.” NMFWRI has partnered with the United States Forest Service (USFS) and other agencies to monitor more than 2,500 plots on Collaborative Forest Restoration Program (CFRP) and other restoration projects across the state since 2007. The NMFWRI’s Ecological Monitoring Program maintains a professionally managed field crew to collect data on short and long-term ecosystem responses to restoration treatments. This data provides a critical scientific basis for adaptive management decisions and improved treatment effectiveness. The field crew also provides hands-on internship and training opportunities for students and recent graduates to help build New Mexico's forestry workforce.

During June through October 2010, March through June 2015, July through August 2020, and May through June 2023, the NMFWRI inventory and monitoring crews measured 34 plots across approximately 578 acres in the Walker Flats region of the Rio Mora watershed in the Pecos-Las Vegas Ranger District of the Santa Fe National Forest. The area called Walker Flats comprises three units: Corrales (198 acres) to the north and west, Walker Flats (240 acres) in the center, and Encinal (140 acres) to the south and east. These plots were established to monitor the CFRP project 03.01 entitled “*The Natural Resource Development Center Collaborative Forest Restoration Project*,” hereafter referred to as “*La Jicarita CFRP*.” This project is accessible on foot on forest land via Encinal Road and NM Highway 518 northwest of Las Vegas, in Mora County, New Mexico. The site is mixed-conifer, including Douglas-fir, white fir, ponderosa pine, limber pine, and quaking aspen; and ranges in elevation between approximately 8800 - 9600 feet with gentle to moderate slopes.

La Jicarita CFRP said little about what was to happen in terms of forest restoration, only that La Jicarita and its collaborators would conduct environmentally sound forest restoration treatments in the upper Mora watershed on the Carson and Santa Fe National Forests. The grant language focused on economic and community development. A follow-on project, CFRP 03-06, proposed to restore 200 acres of forest in the Upper Mora Watershed within the Walker Flats area of the Santa Fe National Forest. Removed material was to be used for vigas, latillas, posts, chip material, and firewood.

Treatment History

The prescription written by the Las Vegas District of the USFS specified a diameter cap of 12 inches DBH; 20-foot spacing between residual trees, except where a clump or opening is left; species preference for individual trees in the residual stand in the descending order ponderosa pine, limber pine, aspen, Douglas-fir, and white fir; and 15% to 20% of the residual trees should be in clumps. Usable boles of trees were removed from the site, and slash was treated as lop-and-scatter.

Thinning work began in 2005 in the Walker Flats unit, and was completed in FY (Fiscal Year) 2009. Only one of NMFWRI’s plots, 03.10_009, was possibly inside the FY 2009 area. The Corrales unit was thinned

more than 25 years ago, and additional thinning was done during FY 2006 in the far northern portion of the unit where NMFWR plots are located (**Figure 5**). The Encinal unit was thinned between September 2005 and July 2006. The Encinal unit was not burned, but the remainder of the area was burned in the fall of 2008, with a prescribed fire in the Walker Flats unit and a lighter prescribed fire in the Corrales unit. Despite the treatment history provided by the Pecos-Las Vegas Ranger District, re-examination of NMFWR plot data and photos revealed that the treatment effects observed on-the-ground do not follow the spatial boundaries provided. For example, plot 03.01_015 was reported to be within the Walker Flats unit, but NMFWR data does not show any evidence of thinning nor prescribed fire. Therefore, the data presented here is analyzed and presented by actual treatment history (or, treatment status), not the provided treatment units. The sample sizes for these groups is presented in **Table 1**, below.

Table 1. Sample size of treatment statuses across the 03.01 La Jicarita Walker Flats CFRP Project Area.

Treatment Status	n (Sample Size)	Thinning Dates	Prescribed Fire Dates
Thinned	5	2005	
Thinned & Burned	26	1995 (3 plots only); 2005-2009	2008
Untreated	3		

The initial pre- and post-treatment monitoring was by New Mexico State University, under the direction of Dr Sam Fernald. The timber inventory protocol of that monitoring established a series of transects, with data collected at points along the transects. Data collected included slope, seedling density (on a fixed-radius mil-acre plot), and tree data (from a variable plot using a 10-factor prism, and recording species, height, and diameter breast height (DBH)). Initial measurements were made in 2003, then repeated in 2009. Other measurements (soils data, rainfall simulations, etc.) were collected over the entire area. In addition, a series of microplots that received different forest treatments and a series of range plots were intensively measured. This complete report was released as *Upper Mora Watershed Collaborative Forest Restoration Program Technical Report 2009 “Monitoring of Thinning Treatments on Forest Health”*.

The NMSU monitoring design and protocol for data collection on the microplots were different enough from our protocol that we established a new plot grid. Our remeasurement was done on a one-tenth acre, fixed-radius plots and consisted of our standard indicators: a plot description, including a 1/100th-acre plot for seedling density and ground cover estimation; tree species, heights, and diameter; fuels measurements; and photographs (see Monitoring Methods section below). NMSU did not report data by treatment unit. However, because NMFWR is interested in the effects of forest restoration on forest health and fire effects, we present all data by treatment status in this report.

In spring 2022, this project area burned in the Hermit’s Peak Calf Canyon (HPCC) wildfire at low to moderate composite burn severity. The Hermit’s Peak fire began as an escaped prescribed burn and later merged with the Calf Canyon fire which started as a winter pile burn. The Hermit’s Peak Calf Canyon fire grew to become the largest and most destructive wildfire in New Mexico history at 341,471 acres. Of this footprint, 12.2% was classified as high soil burn severity, 20.6% was classified as moderate soil burn severity, 24.4% was classified as low soil burn severity, and 42.8% was classified as unburned (**Table 1**). More information about the HPCC wildfire is available here:

<https://storymaps.arcgis.com/stories/d48e2171175f4aa4b5613c2d11875653>

Table 2. Percent of project acreage by Composite Burn Index (CBI), for .

03.01 La Jicarita Walker Flats Project Acreage by Composite Burn Index	
CBI	Percent
Unchanged	42.8
Low Severity	24.4
Moderate Severity	20.6
High Severity	12.2

Monitoring Methods

The NMFWR I monitoring crew followed the protocols published in the their Field Monitoring Manual, linked here: <https://nmfwri.org/resources/upland-forests-monitoring-field-manual/>

These protocols are based on the Department of Interior’s FEAT/FIREMON Integrated (FFI) sampling protocols. They used 1/10^m acre fixed plots to assess tree size (diameter and height) and density (trees/acre). A nested sub-plot of 1/100^m acre was used to estimate understory and ground cover in all years. Photo points were taken at each plot. Surface fuels were measured using Brown’s transects. The location of the plots was based on a stratified random sampling design.

All raw data and photo points will be provided to the managers of the project area; the goal of this report is to summarize this information in a concise manner.

Disclaimer

NMFWR I provides this report and the data collected with the disclaimer that the information contained in these data is dynamic and may change over time. The data are not better than the original sources from which they were derived. It is the responsibility of the data user to use the data appropriately and within the limitations of monitoring data in general, and these data in particular. NMFWR I gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. This data and related graphics are not legal documents and are not intended to be used as such. This includes but is not limited to using these data as the primary basis for the development of thinning prescriptions or timber sales. NMFWR I shall not be held liable for improper or incorrect use of the data described and/or contained in this report.

Analysis was also done according to our standard protocols. Note that the values reported in the tables are expressed on a per acre basis, but represent only area actually sampled. We do not scale up these values to calculate volume of wood over the project area, and warn readers of this report that they are not intended for that purpose. The accompanying tables show summaries of our data, and some differences are discussed below; however, differences that seem apparent here may not stand up to rigorous statistical tests. For some estimates, the standard deviation exceeds the mean (i.e., the coefficient of variation is greater than 100 percent), and sampling errors for some estimates exceed 100 percent. Therefore, data should be used and results interpreted with appropriate caution.

Summary

NMSU Monitoring

See Treatment History section above for more details regarding the monitoring conducted by New Mexico State University.

Table 3. Summary of NMSU Monitoring from 2003 pre-treatment and 2009 post-treatment.

Metric	2003 Pre-Treatment	2009 Post-Treatment
Tree Species Prevalence	(1) White fir (ABCO) – 33%	(1) Ponderosa pine (PIPO) – 35%
	(2) Ponderosa pine (PIPO) – 29%	(2) Douglas-fir (PSME) – 31%
	(3) Douglas-fir (PSME) – 23%	(3) White fir (ABCO) – 17%
	(4) Quaking aspen (POTR5) – 14%	(4) Quaking aspen (POTR5) – 16%
Mean Height	38.3	46.4
Mean DBH	10.0	11.7
Average basal area (ft ² /acre)	135	107
Seedlings per acre	880	1400
Canopy cover (%)	43.6	38.4
<i>Surface Fuels (tons per acre)</i>		
1-hour	0.27	0.09
10-hour	1.60	0.93
100-hour	2.81	1.75
1000-hour	12.97	1.7
Total Fuels	14.31	4.43

When NMSU remeasured the transects across the entire area in 2009, they found trends toward increased average height, increased average DBH, and decreased standard error. NMSU judged grass and forb production to be “less than highly productive” at 40 lbs per acre. Bare ground varied greatly, but was never more than 8% pre-treatment. Pre-treatment fuel loads (down woody debris) were 3.7 to 4.2 tons per acre.

NMSU’s post-treatment averages are always greater than NFMWRI’s for these same measurements, an artifact of using a 10-factor prism in their protocol versus taking a fixed-radius plot with our protocol; we measure many more small trees than they do. Unfortunately, this makes any direct comparison of pre- and post-treatment averages impossible.

NMSU also collected data on annual precipitation, soil texture and moisture content, sediment yield from silt fencing, on-site rainfall simulations, and wildlife surveys. NFMWRI does not conduct these types of monitoring, but the NMSU report containing a summary of this data is available upon request.

NFMWRI Monitoring Data Summary

The field crew observed a relatively high diversity of tree species in the Walker Flats La Jicarita CFRP project area, with dominant species including quaking aspen, Douglas-fir, and ponderosa pine (**Table 5, Figure 6**). Tree health concerns for trees observed were primarily fire char and/or needle scorch (**Figure 16, Table 6**). This area lies within the footprint of the Hermit’s Peak Calf Canyon fire; the composite burn index for the project area was primarily classified at low (39.3%) to moderate severity (33.3%) (**Figure 2**).

The HPCC wildfire appears to have reduced occurrences of bark beetle, mistletoe, broom rust, and other tree diseases.

The untreated unit experienced 100% tree mortality (**Figure 8**). The trees in this unit were the shortest of the three, and had the lowest crown heights (**Figure 9**). This can increase the likelihood of a crown fire and therefore tree mortality. Mean char and scorch heights were also highest in this unit (**Figure 16**). This unit also had the highest mean basal area and measured trees per acre. Consequently, this unit had the highest density of tree and shrub regeneration, with a mean of approximately 33,900 seedlings and saplings per acre (**Figure 21**). The dominant species of tree seedling and sapling were quaking aspen and Gambel oak. The dominant shrub was Woods' rose (**Figure 38**). Despite this surge in woody regeneration, cover of herbaceous plants remains low in these plots (15.7% cover, **Figure 26**). This unit also had the highest rates of fuel consumption when compared with the treated units. Across all surface fuel components, 68.7% were consumed by the HPCC wildfire (**Table 12**). Ladder fuels, which are composed of standing woody and herbaceous vegetation less than six feet tall, increased in the untreated plot due primarily to a surge in the growth of woody plants (**Table 11, Figure 28**).

The thinned unit experienced a 71% mortality rate, or a 29% survival rate (**Figure 8**). The mean basal area steadily decreased pre-fire, while the trees per acre increased, with a jump in 2020 (**Figure 10, Figure 12**). An increase in the quadratic mean diameter of growing stock trees and a decrease in the QMD of snags immediately post-fire indicates a survivorship bias towards larger, more mature trees (**Figure 14, Figure 15**). Mean char heights were 12ft in this unit, which is about 40% of the mean height of trees in that unit (**Figure 9, Figure 16**). Regeneration of trees and shrubs also increased substantially in this unit immediately post-fire, dominated by quaking aspen and Woods' rose (**Figure 36**). Herbaceous plant growth also increased in the thinned unit (**Figure 26, Table 10**). Across all surface fuel components, total mean surface fuels remained the same immediately post-fire (**Table 12**). However, this is due primarily to the increase in thousand-hour fuels – litter and duff as well as fine fuel loads decreased post-fire.

The unit which was thinned and burned had the highest survival rate – 50.3% (**Figure 8**). These plots had the lowest mean trees per acre and the highest height to live crown, which decreases the chance of crown fire (**Figure 9, Figure 12**). An increase in the quadratic mean diameter of growing stock trees and a decrease in the QMD of snags immediately post-fire indicates a survivorship bias towards larger, more mature trees (**Figure 14, Figure 15**). Mean char heights were 11ft in this unit, which is about 40% of the mean height of trees in that unit (**Figure 9, Figure 16**). Regeneration of trees jumped immediately post-fire in this unit, dominated by quaking aspen (**Figure 37**). The density of shrub seedlings and saplings and herbaceous plant growth, however, decreased (**Figure 26**). This is consistent with the lower overstory mortality rate across these plots. Across all surface fuel components, 48.5% were consumed (**Table 12**).

Ground and aerial cover of plant material on average, decreased across all three treatment units (**Tables 9-10, Figure 23-25**). Concurrently, cover of bare soil, rock, and gravel increased; the consumption of living and dead organic material by the wildfire exposed large amounts of mineral soil. Canopy cover also decreased across all plots immediately post-fire, due to tree mortality (**Figure 27**).

Access to all plots remained possible via driving and hiking for the 2023 measurement period; however, road conditions were highly dependent on weather.

Management Implications:

Despite high mortality across the project area, high tree and shrub seedling densities indicate that the initial fire recovery outlook for this unit is good. The regeneration is dominated by quaking aspen and Gambel oak, due to these species' habit to readily sprout from underground rhizomes, especially following disturbance. Conifers require specific conditions for their seeds to germinate, hence the lower densities of these species. State transitions to aspen or oak woodlands may occur in some areas for a period following the HPCC wildfire, but a definitive outlook cannot be determined without continued monitoring in the unit. Aspens and oaks, also have mechanisms through which self-thinning of colonies can occur. Additionally, conifers such as white fir are tolerant to shade, and may be able to thrive in the understory of such forests.

It should be noted that the untreated plots had the highest mean density of aspen and oak regeneration, with no other tree species regeneration recorded. However, shrub regeneration densities and species diversity at these plots were relatively comparable to the other units. The primary limiting factor to conifer regeneration is distance to seed source; 100% mortality at these plots is consistent with this fact. Aspen and oak still dominated the regeneration in the thinned and thinned/burned units, but other species were present as well. The thinned unit had recorded ponderosa pine seedlings, and the thinned/burned unit had four conifer species recorded. These metrics are also consistent with mortality in the units. This data indicates that pre-fire treatments can increase survival of trees as well as regeneration following a catastrophic wildfire.

An increase of bare soil ground cover immediately post-wildfire does indicate an increased risk of soil erosion post-wildfire. The field crew noted mullein on multiple plots immediately post-wildfire. While this is a non-native species of potential concern for outcompeting native plants, it may also play a role in soil stabilization during the initial post-wildfire recovery period.

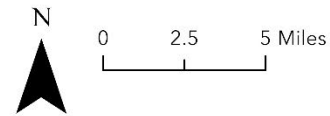
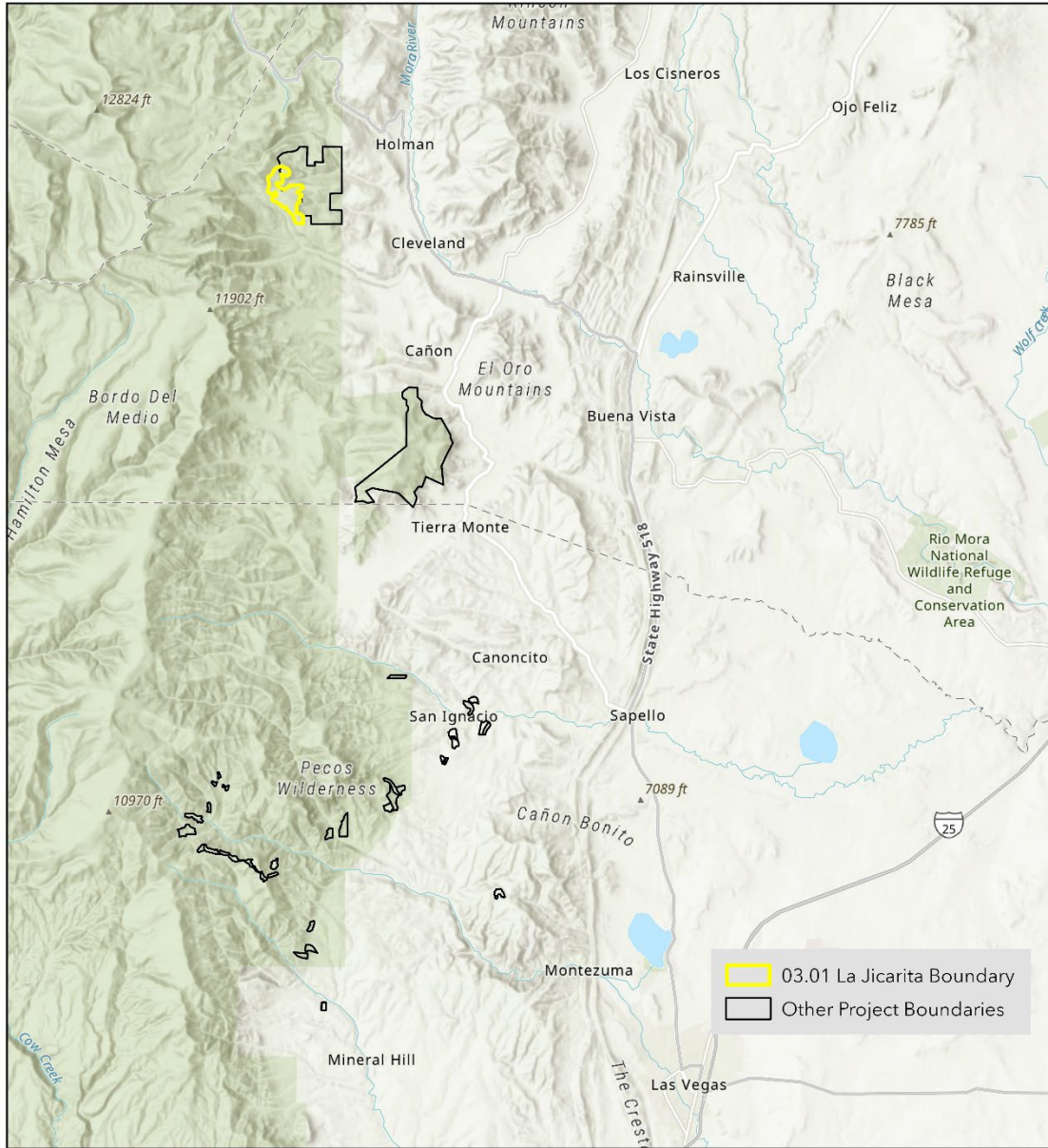
The reported substantial decrease in surface fuel loads, ladder fuel loads, growing stock basal area and density, and snag density following treatments and wildfire all indicate a decreased risk of high-severity wildfire based on fuel load and stand structure. The noted increase in snag basal area following wildfire may pose a concern for increasing surface fuel loads in the future as snags fall and become surface fuels.

As noted in the project introduction, the treatment status of plots do not follow spatial boundaries, therefore the differences in post-wildfire monitoring results can be attributed, at least in part, to the treatment history, rather than geographic differences such as elevation or aspect. The survival of growing stock trees post-wildfire appears to be directly correlated to the magnitude of treatment. The thinned and burned plots had the highest survival rate of growing stock trees, at 50.3%; followed by the thinned plots, at 29%. This demonstrates that the thinning of trees in tandem with the removal of fuels through prescribed burning is effective at mitigating the effects of catastrophic wildfire. The cost of an untreated stand of trees is demonstrated in the untreated plots: no growing stock trees survived the wildfire. Such severe results present a major risk for forest recovery and downstream communities, in the form of flooding and invasion of non-native species. Additional monitoring is needed to determine ongoing adaptive management strategies as the post-wildfire ecosystem develops.

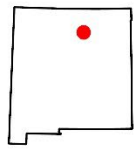
Table 4: Summary statistics for 03.01 Walker Flats La Jicarita across all monitoring periods and Treatment Statuses (TxStatus).

03.01 La Jicarita Walker Flats CFRP - Summary Table						
TxStatus	Metric	2010 PostTreatment5yr	2015 PostTreatment10yr	2020 PostTreatment15yr	2023 PostFireImmediate	
Thinned	Dominant Growing Stock Species	PSME	POTR5	POTR5	PSME, POTR5	
	Dominant Snag Species	ABCO	ABCO	ABCO	POTR5	
	Dominant Live Seedling	POTR5	POTR5	QUGA	POTR5	
	Dominant Live Sapling			POTR5	POTR5	
	Dominant Live Shrub (Seedling Class)			ARUV	ROWO	
	Dominant Live Shrub (Sapling Class)			SYRO	SYRO	
	Trees per Acre (growing stock)	106	130	292	63.3	
	Basal Area (growing stock, sqft/acre)	81.9	74.7	75.9	67.5	
	QMD (growing stock, inches)	11.8	11.2	8.49	13	
	Average Live Crown Base Height (ft)	20.8	19.5	6.84	15.8	
	Average Tree Height (ft)	41.2	37	28.3	44.2	
	Live Tree Seedlings Per Acre	2140	2400	3280	13500	
	Live Tree Saplings Per Acre			1180	2600	
	Live Shrub Seedlings Per Acre			5240	5720	
	Live Shrub Saplings Per Acre			800	200	
	Tree Canopy Cover (%)	41	63	50	32	
	Grass & Forb Cover (%)			45	60	
	Total Tons Surface Fuels per Acre	17.6	22	17.2	16.6	
	Thinned & Burned	Dominant Growing Stock Species	PIPO	PIPO	POTR5	POTR5
		Dominant Snag Species	PSME	PSME	PSME	POTR5
Dominant Live Seedling		POTR5	QUGA	QUGA	POTR5	
Dominant Live Sapling			ABCO	QUGA	POTR5	
Dominant Live Shrub (Seedling Class)				MARE11	ROWO	
Dominant Live Shrub (Sapling Class)				SYRO	SYRO	
Trees per Acre (growing stock)		110	119	175	98.3	
Basal Area (growing stock, sqft/acre)		82.7	76.3	71.7	62.7	
QMD (growing stock, inches)		12.6	11.3	8.72	11.2	
Average Live Crown Base Height (ft)		25.6	22.4	10.4	18.7	
Average Tree Height (ft)		44.4	37.9	29.5	35.7	
Live Tree Seedlings Per Acre		1750	2600	1680	4820	
Live Tree Saplings Per Acre			367	400	450	
Live Shrub Seedlings Per Acre				12200	9530	
Live Shrub Saplings Per Acre				200	100	
Tree Canopy Cover (%)		52	48	26	21	
Grass & Forb Cover (%)				42	49	
Total Tons Surface Fuels per Acre		14.5	34	32.9	16.9	
Untreated		Dominant Growing Stock Species	POTR5	ABCO	POTR5	
		Dominant Snag Species	POTR5	ABCO	ABCO	POTR5
	Dominant Live Seedling	POTR5	ABCO	ABCO	POTR5	
	Dominant Live Sapling		CEMO2	POTR5	POTR5, QUGA	
	Dominant Live Shrub (Seedling Class)			PAMY	ROWO	
	Dominant Live Shrub (Sapling Class)			JAAM		
	Trees per Acre (growing stock)	397	363	640		
	Basal Area (growing stock, sqft/acre)	110	106	107		
	QMD (growing stock, inches)	7.65	7.78	7.65		
	Average Live Crown Base Height (ft)	14.1	13.9	10.2		
	Average Tree Height (ft)	29.7	26.7	27.1		
	Live Tree Seedlings Per Acre	3650	1500	2170	22500	
	Live Tree Saplings Per Acre		0	900	0	
	Live Shrub Seedlings Per Acre			8070	10700	
	Live Shrub Saplings Per Acre			200		
	Tree Canopy Cover (%)	60	92	52	27	
	Grass & Forb Cover (%)			14	15.7	
	Total Tons Surface Fuels per Acre	28.2	47.4	31.4	9.74	

03.01 La Jicarita Walker Flats CFRP Overview Map



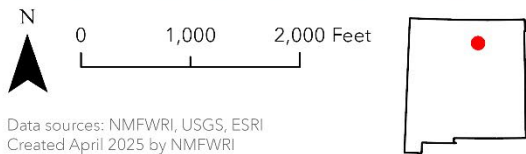
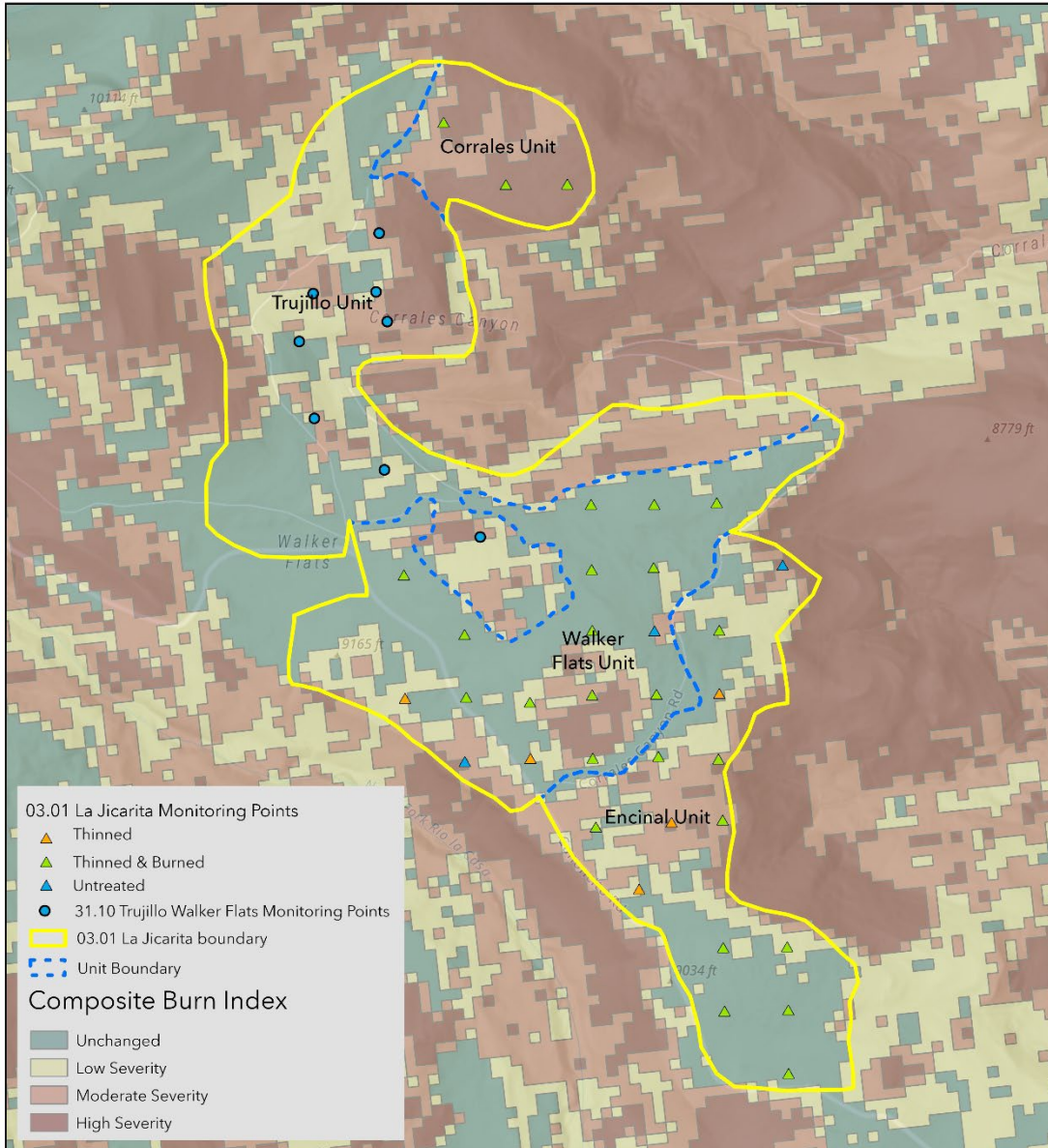
Data sources: NMFWRI, USGS, ESRI
Created April 2025 by NMFWRI



No warranty is made by New Mexico Highlands University (NMHU) as to the accuracy, reliability, or timeliness of these data for individual use or aggregate use with other data, or for purposes not intended by NMHU. Conclusions drawn from this information are the responsibility of the user. NMHU assumes no responsibility in the event that any information is incorrect. NMHU assumes no liability for damage incurred directly or indirectly as a result of incomplete, incorrect, or omitted information. This information may be updated without notification.

Figure 1. Regional overview map of the 03.01 La Jicarita Walker Flats CFRP project

03.01 La Jicarita Walker Flats CFRP Composite Burn Index



No warranty is made by New Mexico Highlands University (NMHU) as to the accuracy, reliability, or timeliness of these data for individual use or aggregate use with other data, or for purposes not intended by NMHU. Conclusions drawn from this information are the responsibility of the user. NMHU assumes no responsibility in the event that any information is incorrect. NMHU assumes no liability for damage incurred directly or indirectly as a result of incomplete, incorrect, or omitted information. This information may be updated without notification.

Figure 2. Composite Burn Index of the 03.01 La Jicarita Walker Flats CFRP project following the 2022 Hermit's Peak Calf Canyon fire

03.01 La Jicarita Walker Flats CFRP

Pre-fire 2020 Color Infrared vs Post-fire 2022 Color Infrared

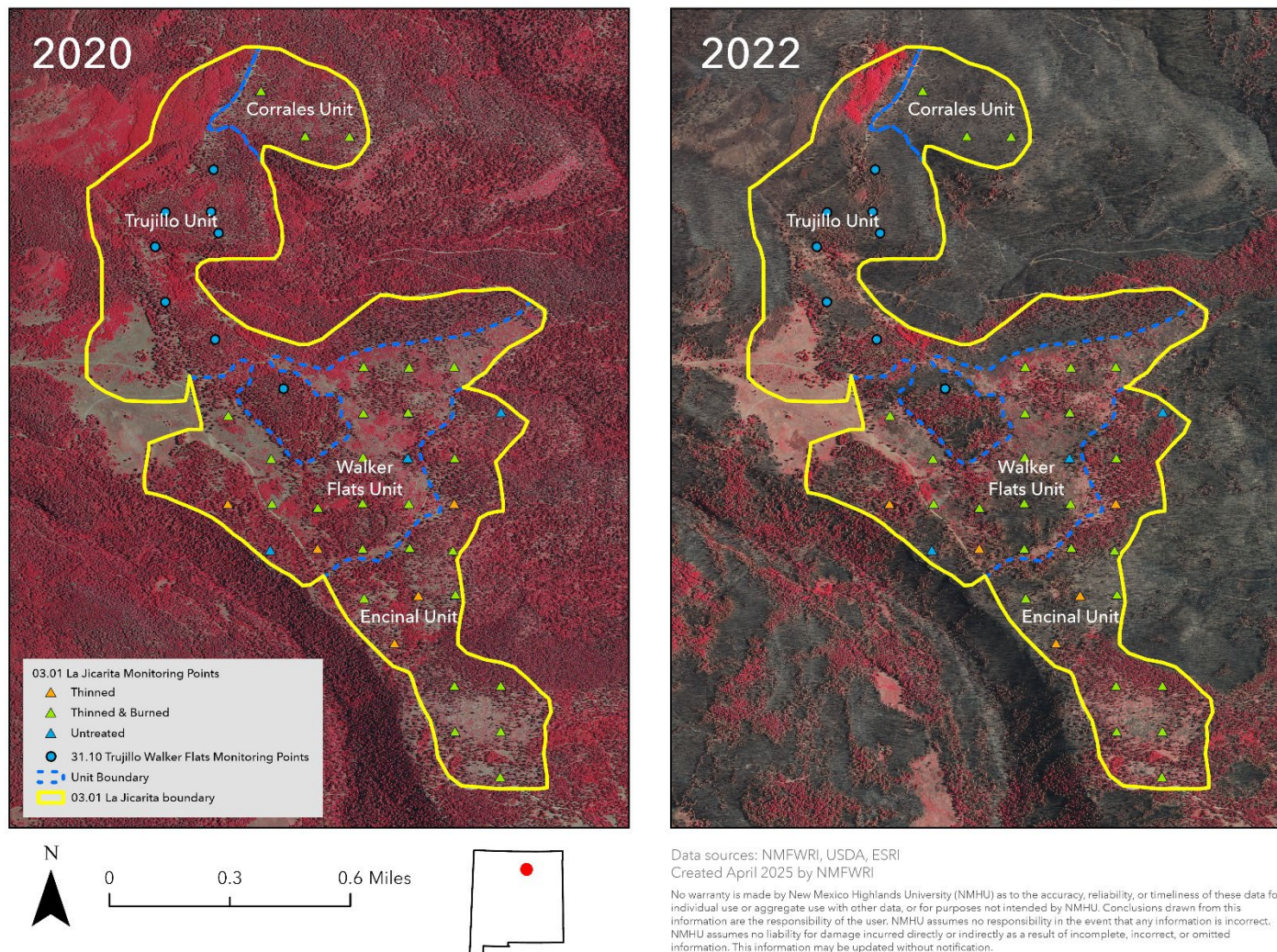


Figure 3. Map of color infrared of 03.01 La Jicarita Walker Flats CFRP project before and after the Hermit's Peak Calf Canyon fire

03.01 La Jicarita Walker Flats CFRP

Pre-fire 2020 NAIP Imagery vs Post-fire 2022 NAIP Imagery

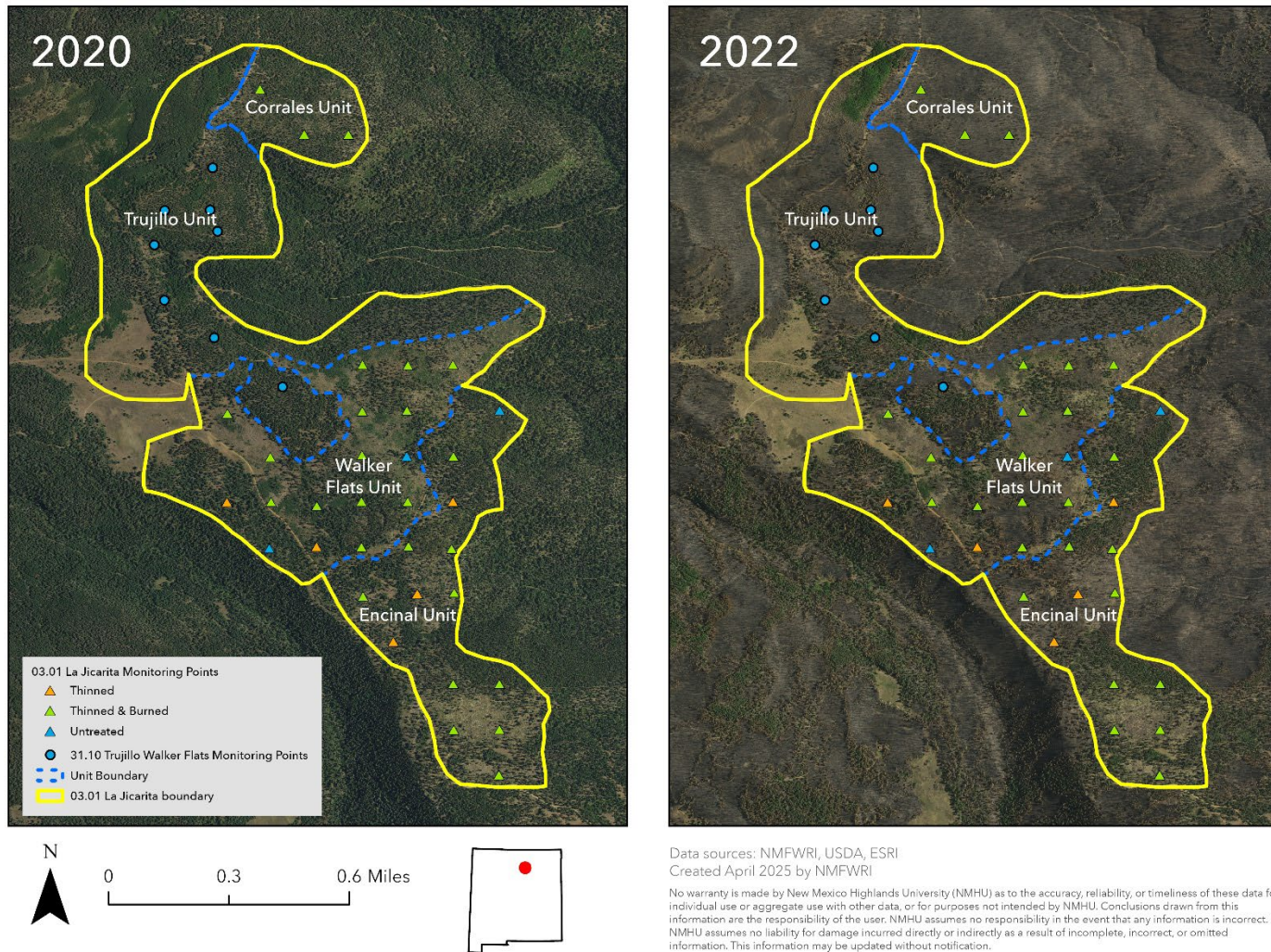
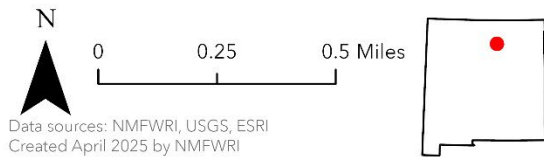
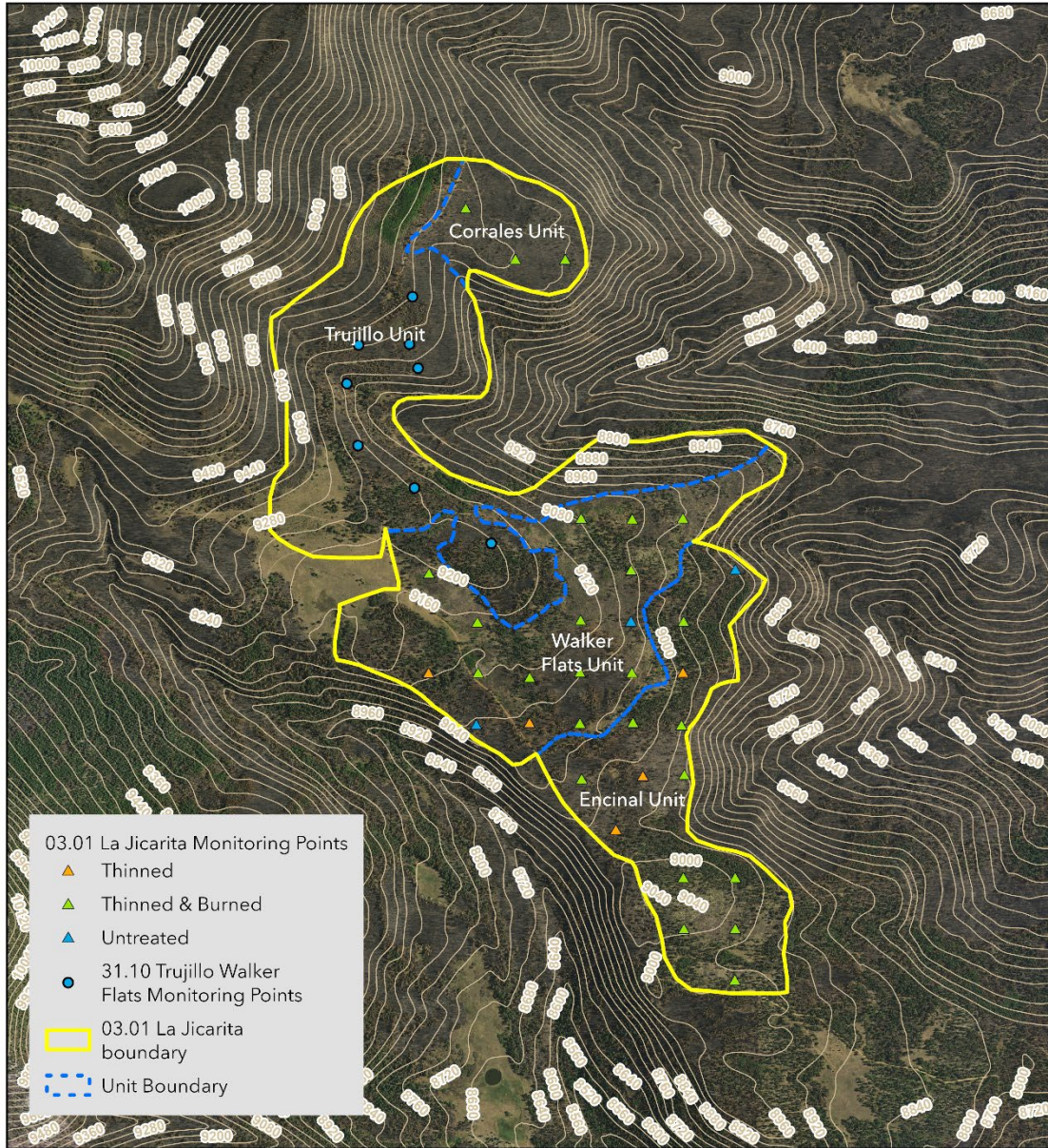


Figure 4. Map of NAIP Imagery of 03.01 La Jicarita Walker Flats CFRP Project before and after the Hermit's Peak Calf Canyon wildfire.

03.01 La Jicarita Walker Flats CFRP Monitoring Points with 20' Contours



No warranty is made by New Mexico Highlands University (NMHU) as to the accuracy, reliability, or timeliness of these data for individual use or aggregate use with other data, or for purposes not intended by NMHU. Conclusions drawn from this information are the responsibility of the user. NMHU assumes no responsibility in the event that any information is incorrect. NMHU assumes no liability for damage incurred directly or indirectly as a result of incomplete, incorrect, or omitted information. This information may be updated without notification.

Figure 5. 31.10 Walker Flats Final Phase Trujillo CFRP project with monitoring plots and contour lines

Monitoring Results

Overstory trees

The overstory (trees >1" DBH) showed high diversity with seven species represented across measurement periods (**Table 5**). In the Thinned treatment unit, quaking aspen was dominant in the growing stock across all pre-wildfire monitoring periods (**Figure 6**). Snags in the thinned unit were mostly made up of white fir (**Figure 7**). Immediately post-HPCC wildfire, most snags were quaking aspen, and the dominant growing stock species shifted to white fir and Douglas-fir, indicating high mortality of aspen.

In the unit which was thinned and burned, ponderosa pine was dominant in the growing stock 5- and 10-years post-treatment. Quaking aspen out-numbered the conifers 15-years post-treatment, however. The dominant snag in all pre-wildfire monitoring periods was Douglas-fir. Immediately post-fire, quaking aspen remained dominant in the growing stock, but also dominated the snag composition. This indicates high mortality of aspen in only a portion of plots.

In the untreated units, the growing stock was dominated by white fir and quaking aspen across all pre-fire monitoring periods; the same is true of the snag composition. No growing stock trees survived the HPCC wildfire in the untreated unit. Quaking aspen overwhelmingly made up the snag community in these plots.

Table 5. Species found in the overstory composition, by USDA species symbol, scientific name, and common name.

Species Symbol	Scientific Name	Common Name
ABCO	<i>Abies concolor</i>	white fir
PIFL2	<i>Pinus flexilis</i>	limber pine
PIPO	<i>Pinus ponderosa</i>	ponderosa pine
PIPU	<i>Picea pungens</i>	Blue spruce
POTR5	<i>Populus tremuloides</i>	quaking aspen
PSME	<i>Psuedotsuga menziesii</i>	Douglas-fir
QUGA	<i>Quercus gambelii</i>	Gambel oak
2TREE		unknown tree*

*Dead/burned and lacking identifying characteristics

Overstory Growing Stock Composition

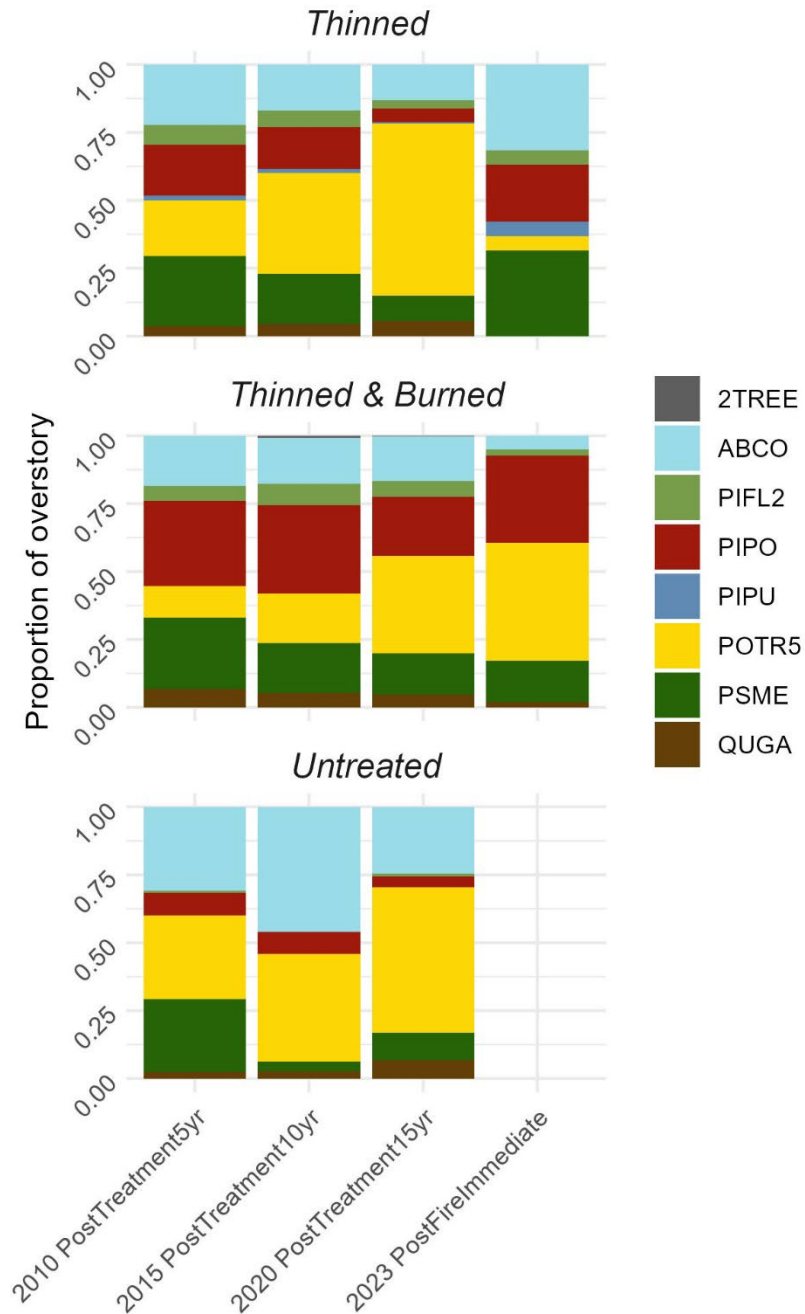


Figure 6. Growing stock species composition by status across all measurement periods for all growing stock overstory trees (>1" DBH). There were no growing stock trees in the untreated plots 2023 immediately post-wildfire.

Snag Composition by Species

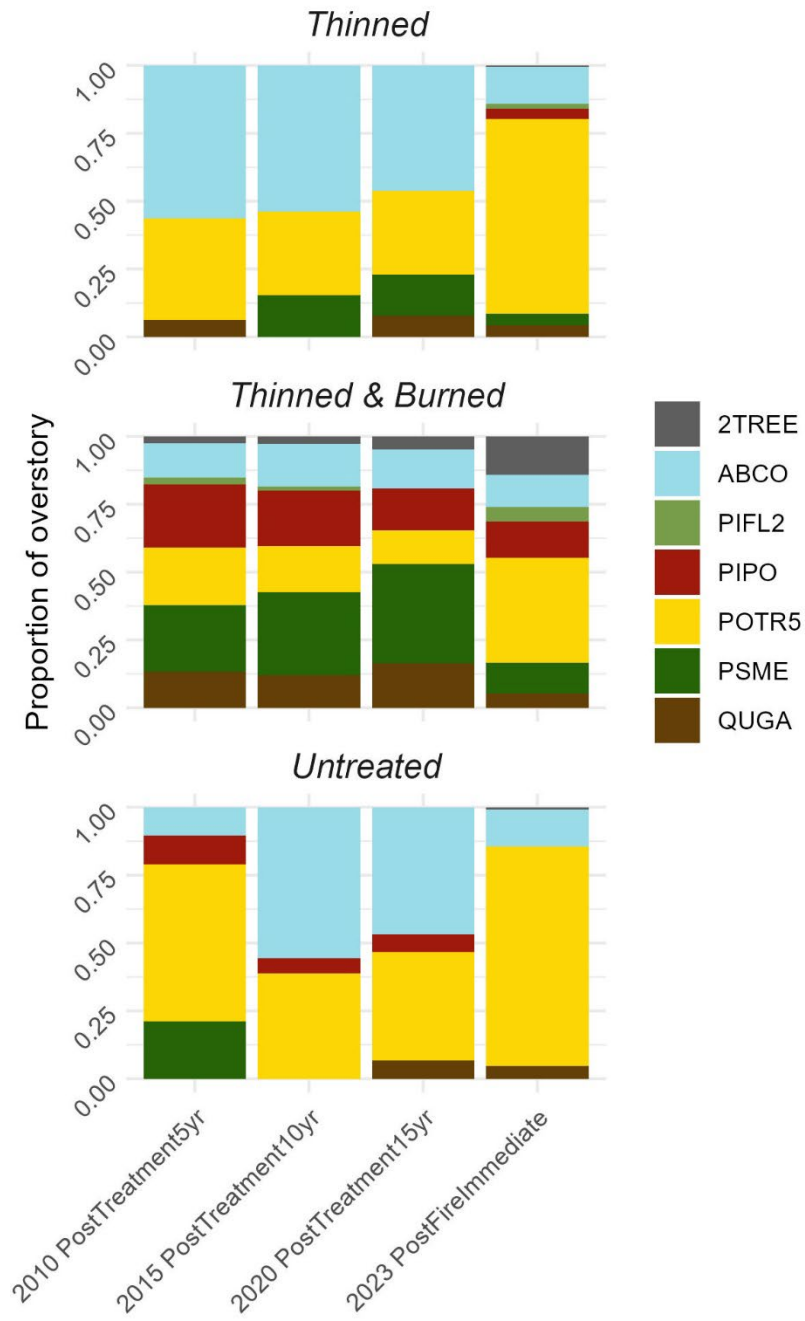


Figure 7. Snag species composition by status across all measurement periods for all growing stock overstory trees (>1" DBH).

Growing Stock

Survival

Survival was calculated across plots by comparing counts of growing stock trees immediately pre- and post-HPCC wildfire. The highest mean survival rate occurred in the unit which was thinned and burned, at 50.3% (**Figure 8**). The next highest occurred in the thinned unit, at 29%. The untreated unit had the lowest growing stock survival rate – no trees survived the fire.

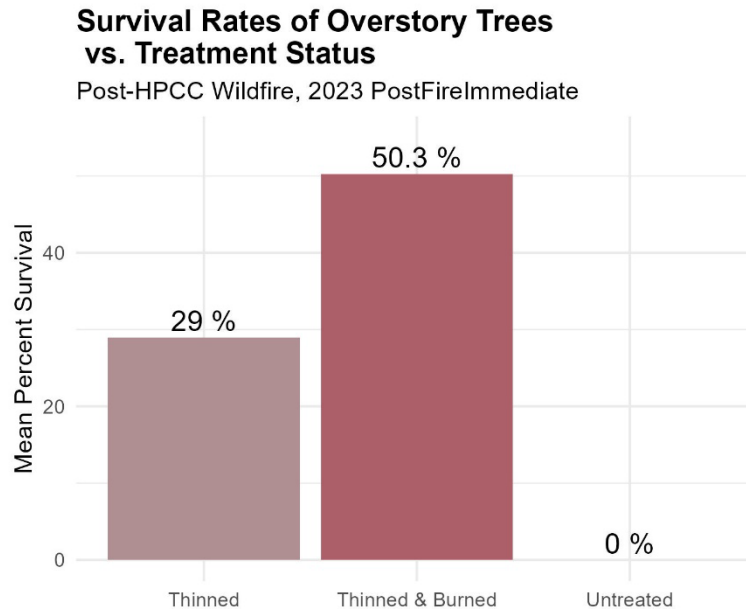


Figure 8. Percent growing stock tree survival across treatment units.

Height and Live Crown Base Height

Heights from the 2020 PostTreatment15yr monitoring period, through NMFWR1's data QC (quality control) process, were proven to be artificially inflated and therefore an inaccurate representation of these stands of trees. There is a proven positive correlation between the DBH and height of a tree, although this is species- and site-specific. Using this relationship, we performed a linear regression on the existing data for other years of monitoring for this project. The equation derived from that regression was used to infer the heights of all trees for the 2020 monitoring period. For the same reasons expressed above, Live Crown Base Heights from the 2020 PostTreatment15yr monitoring period, may not be accurate. The LCBHs of individual trees are extremely site-dependent and have a relationship with several confounding variables. Therefore, we report these values as they were collected, but emphasize that LCBH measurements from 2020 may not be an accurate representation of tree stands.

In both treated units, mean height of growing stock trees decreased across all pre-fire monitoring periods – this is consistent with the recruitment of trees that we would expect following treatments due to increased openings in the canopy (**Figure 9**). In the untreated unit, height remained relatively stable pre-fire. We observe a similar pattern in height to live crown – the treated units decreased due to young tree recruitment, while the untreated units remained stable.

No growing stock trees survived the HPCC wildfire in the untreated unit. In both treated units, mean height and mean height to live crown increased. The increase in mean height indicates that smaller trees were killed by the HPCC wildfire, while larger trees were more likely to survive. The increase in height to live crown also reflects that trend, as well as the possibility that the fire killed lower canopy branches on some trees.

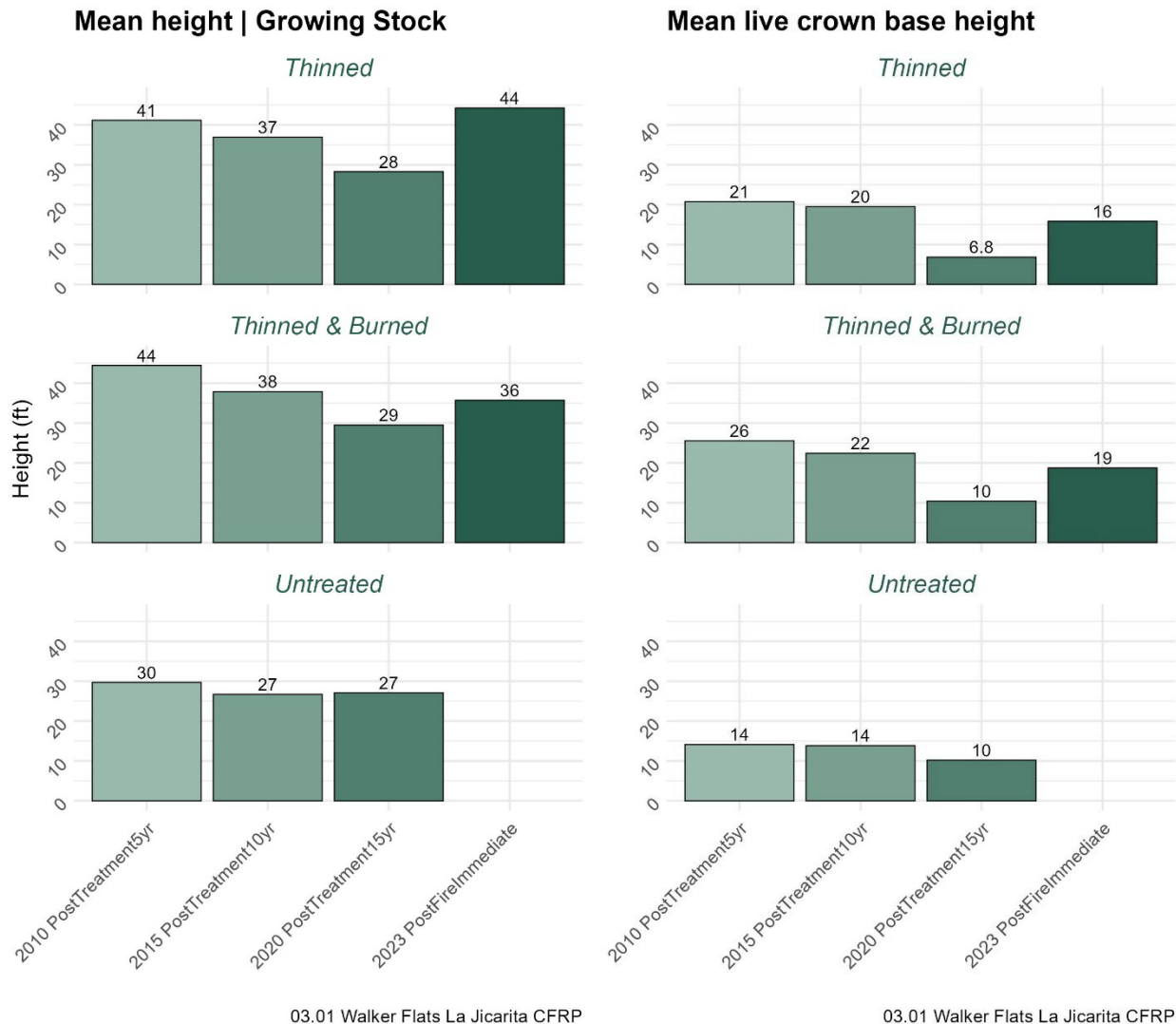


Figure 9. Mean height and live crown base height for growing stock trees (>1" DBH, live + sick status). Mean values represent averages of plot means for each monitoring and treatment status.

Basal Area, Trees per Acre, and Quadratic Mean Diameter

A breakdown of these metrics by tree species is available in the supplementary figures (**Figure 33-35**). Mean basal area of growing stock trees decreased slightly or remained stable across all treatment units, across all pre-fire monitoring periods; indicating little recruitment and limited mortality (**Figure 10**). In the thinned unit, snags per acre remained relatively stable, at 8.24 ft²/acre 15-years post-treatment (**Figure 11**). The thinned and burned unit had a mean of 31.6 ft²/acre 15-years post-treatment. This difference is indicative of the mortality of trees from the prescribed fire in 2008, which had an extremely variable intensity across the landscape; some plots burned experienced 100% mortality. Basal area of

snags in the untreated unit increased substantially from 13.8 ft²/acre 5-years post-treatment to 54.8 ft²/acre 10-years post-treatment. This may indicate a high mortality rate due to pests or disease. The following decrease to 21.9 ft²/acre 15-years post-treatment may also indicate low stability of larger or older snags.

Basal area decreased in both treatment units immediately post-fire. In the thinned unit, basal area decreased from 75.9 ft²/acre pre-fire to 67.5 ft²/acre post-fire. In the thinned and burned unit, basal area decreased from 71.7 ft²/acre pre-fire to 62.7 ft²/acre post-fire. Immediately post-fire, in the thinned unit, snag basal area increased by 84%. Snag basal area increased in the untreated unit as well, by 40%. Snag basal area decreased slightly in the thinned and burned unit. This may be due to full consumption of snags or growing stock trees by the HPCC wildfire.

The estimated trees per acre in the treated units were far lower than the untreated unit, though all units saw increases in trees per acre across post-treatment monitoring periods (**Figure 12**). Tree density in the treated plots increased only slightly from 5- to 10-years post-treatment, but both units saw a more substantial increase 15-years post-treatment. The unit which was only thinned experienced an approximate 55% increase in tree density, while the thinned and burned unit experienced an approximate increase of 32%. This demonstrates that the combination of mechanical thinning and prescribed fire has the potential to slow forest density growth rates for longer periods. However, thinning still has a strong effect – the thinned unit had 292 trees per acre 15-years post-treatment, while the untreated unit had 640 trees per acre. The density of snags across all treatment units decreased slightly across pre-fire monitoring periods, indicating low mortality and high stability of snags (**Figure 13**).

Immediately post-fire, both thinned units' trees per acre metrics decreased to a total below the initial 5-years post-treatment NMFWR monitoring period – 63.3 trees per acre in the thinned unit and 98.3 trees per acre in the thinned and burned units. The density of snags increased substantially in all treatment units due to the high severity of the HPCC wildfire. The thinned and burned unit had the lowest density at 144 snags per acre, followed by the thinned unit (368 snags per acre). The untreated unit had an average of 600 snags per acre – as is expected from the 100% mortality rate in these plots.

The quadratic mean diameter (QMD) of growing stock trees in the treated units decreased steadily across pre-fire monitoring periods, indicating that both units experienced recruitment (**Figure 14**). The QMD in the untreated unit remained stable, indicating that recruitment was limited. The QMD of snags in all units followed a similar pattern – increasing from 5- to 10-years post-treatment, before decreasing again 15-years post-treatment (**Figure 15**).

Immediately post-fire, QMD increased in both treatment units, and the QMD of snags decreased in both treated units. These metrics together indicate that smaller trees were more likely to be killed in the wildfire, while larger trees were more likely to survive. The QMD of snags in the untreated unit increased post-fire, which is again, to be expected due to the 100% mortality rate.

Mean Basal Area per Acre Growing Stock

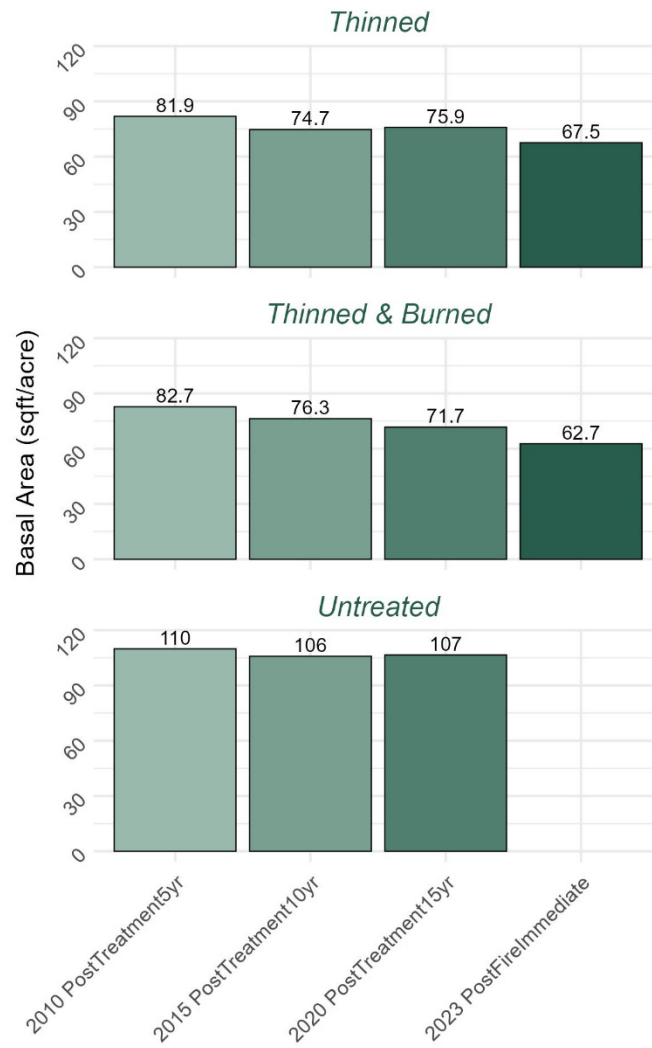


Figure 10. Mean basal area, for growing stock trees across all measurement periods (>1" DBH, live + sick status) by Treatment and Monitoring Status.

Mean Basal Area per Acre Snags

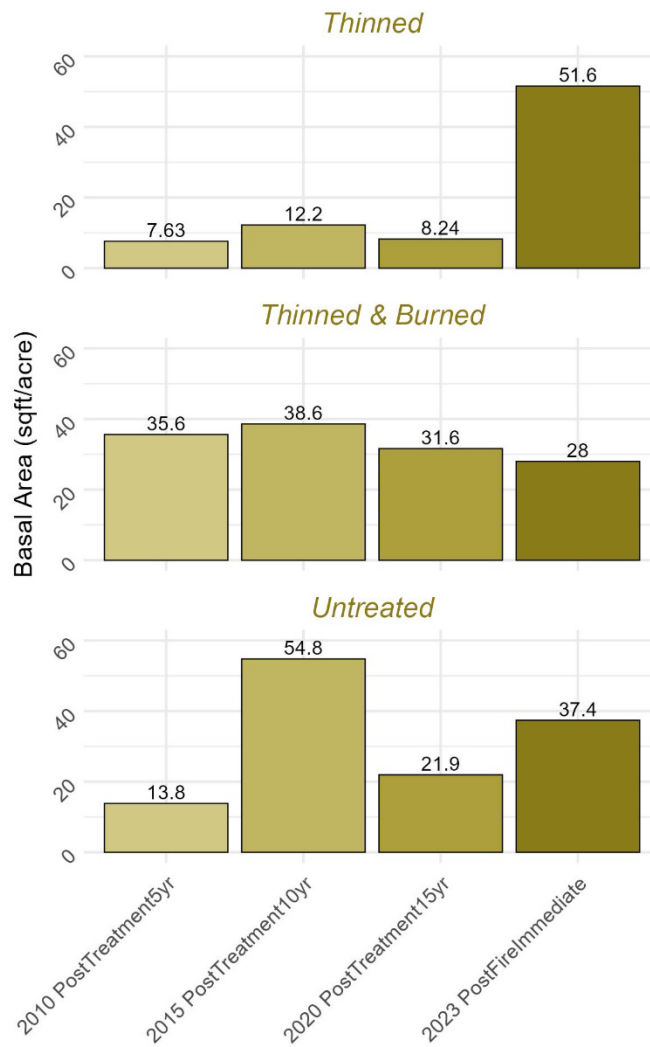
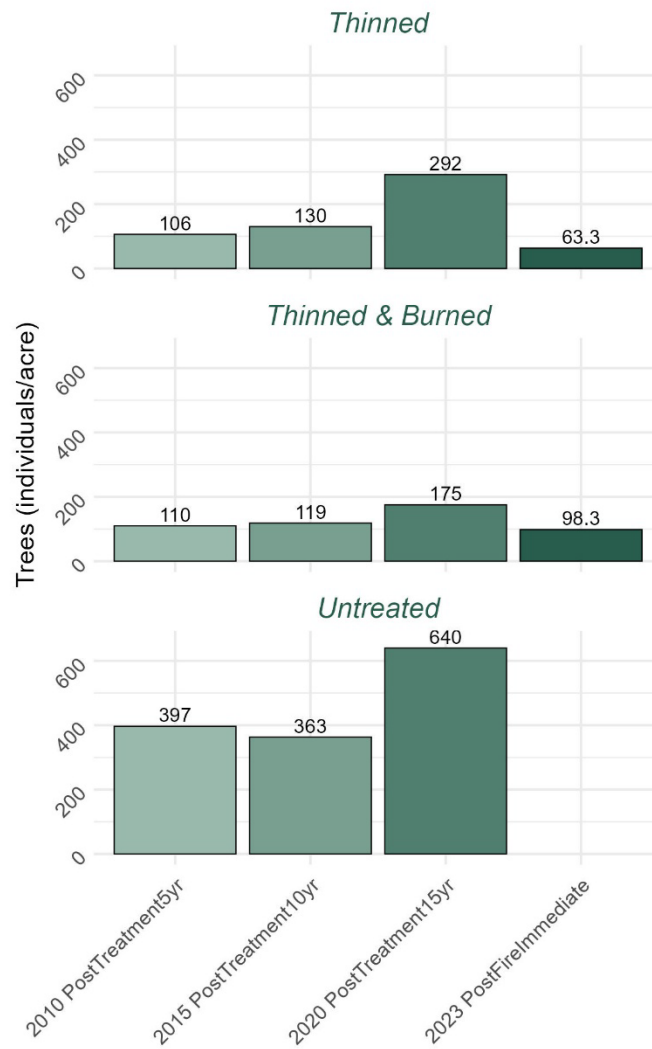


Figure 11. Mean basal area for snags across measurement periods (>1" DBH) by Treatment and Monitoring Status

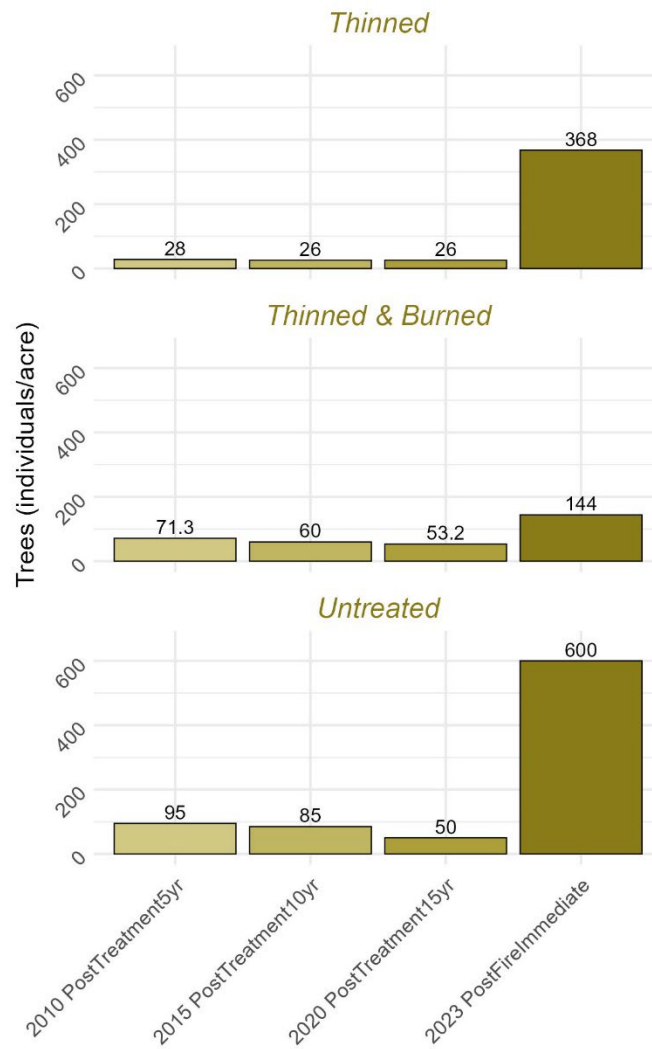
Mean trees per acre | Growing Stock



03.01 Walker Flats La Jicarita CFRP

Figure 12. Mean trees per acre for growing stock trees across all measurement periods (>1" DBH, live + sick status) by treatment status.

Mean trees per acre | Snags



03.01 Walker Flats La Jicarita CFRP

Figure 13. Mean trees per acre for snags across measurement periods (>1" DBH) by treatment unit.

**Quadratic mean diameter
Growing Stock**

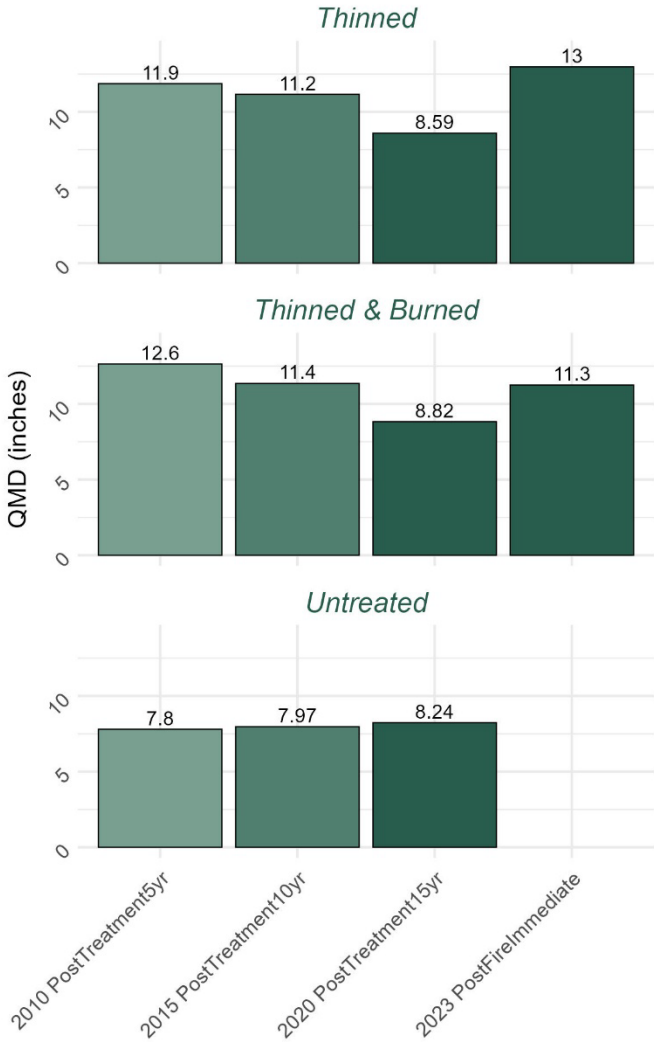


Figure 14. Quadratic mean diameter for growing stock trees across all measurement periods (>1" DBH, live + sick status) by treatment status.

Quadratic mean diameter Snags

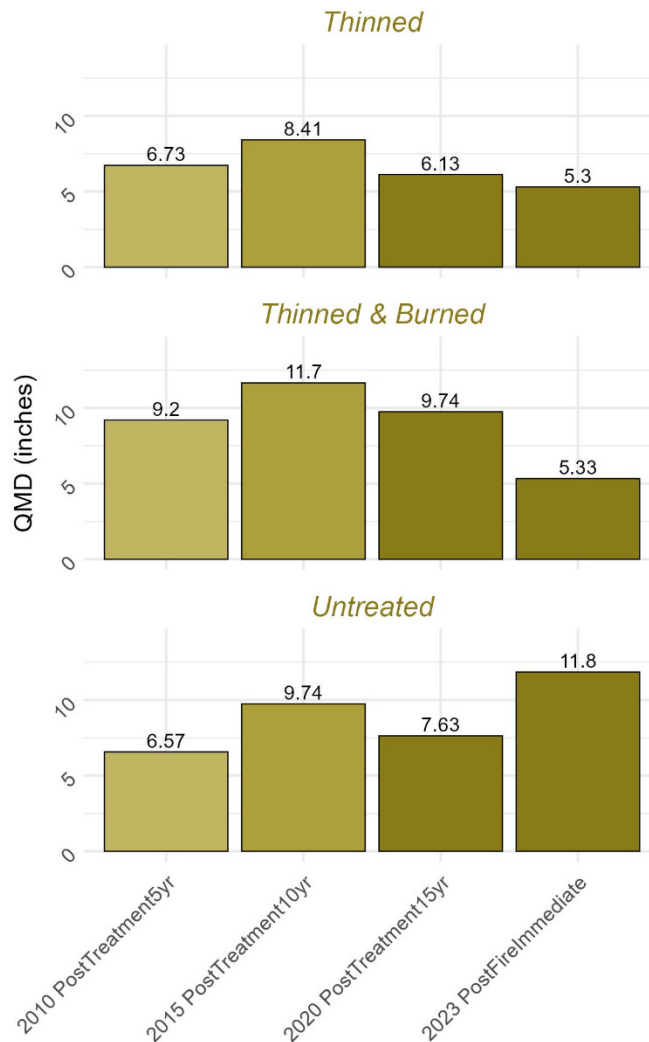


Figure 15. Quadratic mean diameter for snags across measurement periods (>1" DBH) by treatment status.

Damages

Recording damages to trees was not a required part of NMFWR protocol during the 2010 5-year post-treatment and 2015 10-year post-treatment monitoring periods. The damages shown here for those years were assigned based on comments recorded for individual trees. Low totals for damages to growing stock trees or snags in 2010 and 2015 does not indicate absence of damage or disease. Additionally, count represents the number of observations of each damage type; individual trees may have more than one damage recorded.

Across all treatment units, mistletoe, broom rusts, and bark beetles were fairly prevalent pre-wildfire (**Table 6**). Immediately post-fire, the most common damage recorded to growing stock trees was char or scorch. Counts of the aforementioned pests and diseases decreased in both treatment units – though whether this is due to mortality of trees or by an actual decrease in prevalence is uncertain.

Snags in all units pre-fire were observed to have a broken top or to be leaning, natural symptoms of decay (**Table 7**). Immediately post-fire, all snags had signs of char or scorch. There were also many observations of fungal decay, insect or bird activity, and other wounds or damages to snags; these are also natural symptoms of decay in a forest ecosystem.

Table 6. List of damages observed on growing stock trees across all measurement periods by code and description for the Corrales treatment unit.

Growing Stock Trees by Damage Code				
TxStatus	Monitoring.Status	Damage	Count	Description
Thinned	2010 PostTreatment5yr	10000	1	General insects
		27000	1	Broom rust
		99002	1	Dead top
		11000	8	Bark beetles
	2020 PostTreatment15yr	23001	5	Mistletoe
		27000	5	Broom rust
		70000	1	Human caused damage
		99026	1	Wounds or cracks
		99036	1	Fire scar (catface)
		99037	1	Leaning bole
		30000	12	Fire scar, char and/or scorch
		25000	4	Witches' broom
	2023 PostFireImmediate	10000	3	General insects
		11000	1	Bark beetles
		23001	1	Mistletoe
		27000	1	Broom rust
		41010	1	Bird damage
		50008	1	Lightning scar
		99001	1	Broken top
		99004	1	Uncharacteristic forked top, above or below DBH
Thinned & Burned	2010 PostTreatment5yr	10000	3	General insects
		23001	2	Mistletoe
		25000	2	Witches' broom
		99002	1	Dead top
	2020 PostTreatment15yr	99037	1	Leaning bole
		11000	30	Bark beetles
		23001	22	Mistletoe
		27000	9	Broom rust
		99037	7	Leaning bole
		99026	6	Wounds or cracks
		99001	4	Broken top
		99036	4	Fire scar (catface)
	2023 PostFireImmediate	22000	3	Conk fungus
		70000	3	Human caused damage
		25000	2	Witches' broom
		30000	2	Fire scar, char and/or scorch
		90000	2	Unknown cause
		10000	1	General insects
		99000	1	Physical effects of damage
		30000	102	Fire scar, char and/or scorch
Untreated	2020 PostTreatment15yr	99004	18	Uncharacteristic forked top, above or below DBH
		41010	9	Bird damage
		11000	8	Bark beetles
		99026	7	Wounds or cracks
		99036	7	Fire scar (catface)
		25000	4	Witches' broom
		40000	4	Mammal damage
		10000	3	General insects
		23001	3	Mistletoe
		99001	3	Broken top
		27000	2	Broom rust
		50008	2	Lightning scar
		90000	2	Unknown cause
		17000	1	Gall formed by pathogen/parasitic infection
		99016	1	Unusually sparse foliage
		27000	20	Broom rust
23001	9	Mistletoe		
70000	1	Human caused damage		
99026	1	Wounds or cracks		

Table 7. Counts of damages recorded to dead trees across monitoring periods by treatment status.

Snags by Damage Code					
TxStatus	Monitoring.Status	Damage	Count	Description	
Thinned	2020 PostTreatment15yr	99001	3	Broken top	
		70000	1	Human caused damage	
		99026	1	Wounds or cracks	
	2023 PostFireImmediate	30000	141	Fire scar, char and/or scorch	
		99004	28	Uncharacteristic forked top, above or below DBH	
		99001	6	Broken top	
		25000	4	Witches' broom	
		90000	2	Unknown cause	
		10000	1	General insects	
		99037	1	Leaning bole	
	2010 PostTreatment5yr	27000	1	Broom rust	
		30000	2	Fire scar, char and/or scorch	
	Thinned & Burned	2015 PostTreatment10yr	99001	3	Broken top
			99001	49	Broken top
2020 PostTreatment15yr		99037	4	Leaning bole	
		30000	2	Fire scar, char and/or scorch	
		70000	1	Human caused damage	
2023 PostFireImmediate		99036	1	Fire scar (catface)	
		30000	302	Fire scar, char and/or scorch	
		99001	31	Broken top	
		99036	22	Fire scar (catface)	
		99004	14	Uncharacteristic forked top, above or below DBH	
	99026	13	Wounds or cracks		
	41010	13	Bird damage		
	11000	10	Bark beetles		
	10000	8	General insects		
	90000	3	Unknown cause		
Untreated	2020 PostTreatment15yr	99037	2	Leaning bole	
		25000	2	Witches' broom	
	2023 PostFireImmediate	22000	1	Conk fungus	
		27000	1	Broom rust	
		99001	3	Broken top	
		30000	122	Fire scar, char and/or scorch	
		99004	10	Uncharacteristic forked top, above or below DBH	
99037	4	Leaning bole			
99001	3	Broken top			
99036	2	Fire scar (catface)			
27000	1	Broom rust			

Char & Scorch

In all post-HPCC wildfire monitoring projects, NMFWR I measured mean char and scorch heights. We define char as the highest point of blackened bark; and scorch as the highest point of heat-killed needles. Note that post-fire monitoring on this project was conducted one year after the wildfire, so the scorch metrics may not be the best indicator of fire reach due to potential needle-shed during the period immediately following the wildfire.

Immediately post-wildfire in the thinned unit, mean char height averaged 12 ft and scorch height averaged 27 ft (**Figure 16**). Mean char height in the thinned and burned unit was 11 ft and mean scorch height was 20 ft. In the untreated unit, mean char height was 33 ft; mean scorch height was 40 ft. These heights directly reflect the heights of flames and the intensity of the wildfire across the project area. Both treatment units saw a similar flame height, indicated by char heights, but the higher scorch height in the thinned unit indicates that the fire may have burned hotter across these plots than in the thinned and burned unit. Additionally, less trees were recorded to have char in the thinned (90%) versus the thinned and burned unit (78%, **Table 8**). Char heights are substantially higher in the untreated unit, recorded on 99.2% of trees. This indicator of high fire intensity is consistent with the 100% mortality rate in this unit.

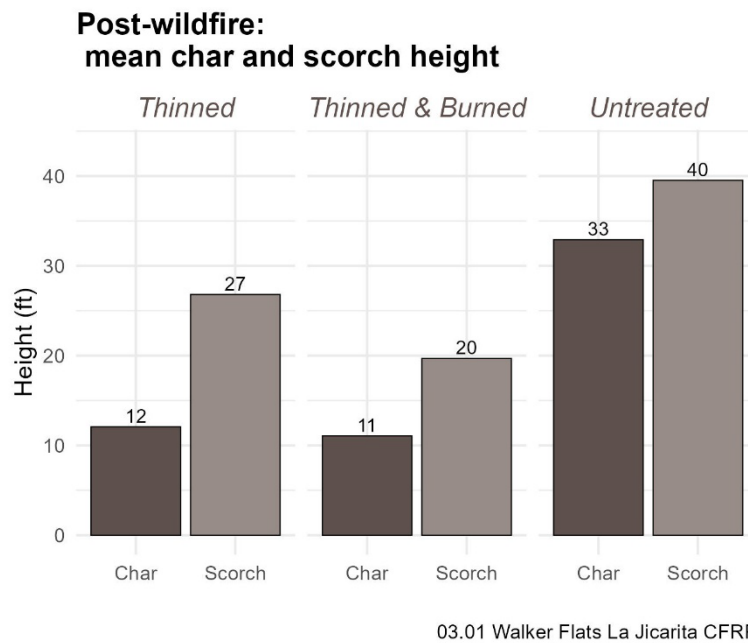


Figure 16. Mean char and scorch heights for trees measured immediately post-wildfire. Mean values represent averages of plot means for each monitoring status and each treatment unit.

Table 8. Percentages of trees with recorded char or scorch across all treatment units immediately post-wildfire.

Trees Charred or Burned in HPCC Wildfire (2022)		
Treatment Status	Percent of All Trees Charred	Percent of Live Trees Scorched
Thinned	90.1	100
Thinned & Burned	78.0	100
Untreated	99.2	

Regeneration: Trees & Shrubs

See Supplementary Figures for a breakdown of seedling and sapling densities by species (**Figure 36-38**). Note that shrub species, and any dead seedlings or saplings were not recorded 2010 PostTreatment5yr nor 2015 PostTreatment10yr. Saplings and seedlings were tallied together and not differentiated 2010 PostTreatment5yr, so all regeneration for this monitoring period is placed within the seedling demographic.

Densities of tree seedlings and saplings in the thinned unit increased steadily across all pre-fire monitoring periods (**Figure 17**). Immediately post-fire, tree seedling and sapling density spiked from 3,300 stems per acre to 14,000 per acre. (2400 individuals per acre). It should be noted that the density of dead tree seedlings and saplings also spiked; therefore, this increase reflects primarily genuine regeneration, rather than survival of tree seedlings and saplings (**Figure 18**). Across all monitoring periods, tree seedlings and saplings were dominated by quaking aspen and Gambel oak (**Figure 36**).

Shrub seedling density also decreased post-fire, from 5,200 per acre 15-years post-treatment to 5,700 individuals per acre immediately post-fire. Shrubs of sapling stature dropped immediately post-fire, from 800 per acre to 200 per acre. Dead shrubs also increased at these plots. The density of shrub species in this unit is regenerating, but individuals have yet to reach the height of their pre-fire community. The shrub regeneration was primarily made up of kinnikinnick and Woods' rose in both monitoring periods (**Figure 36**).

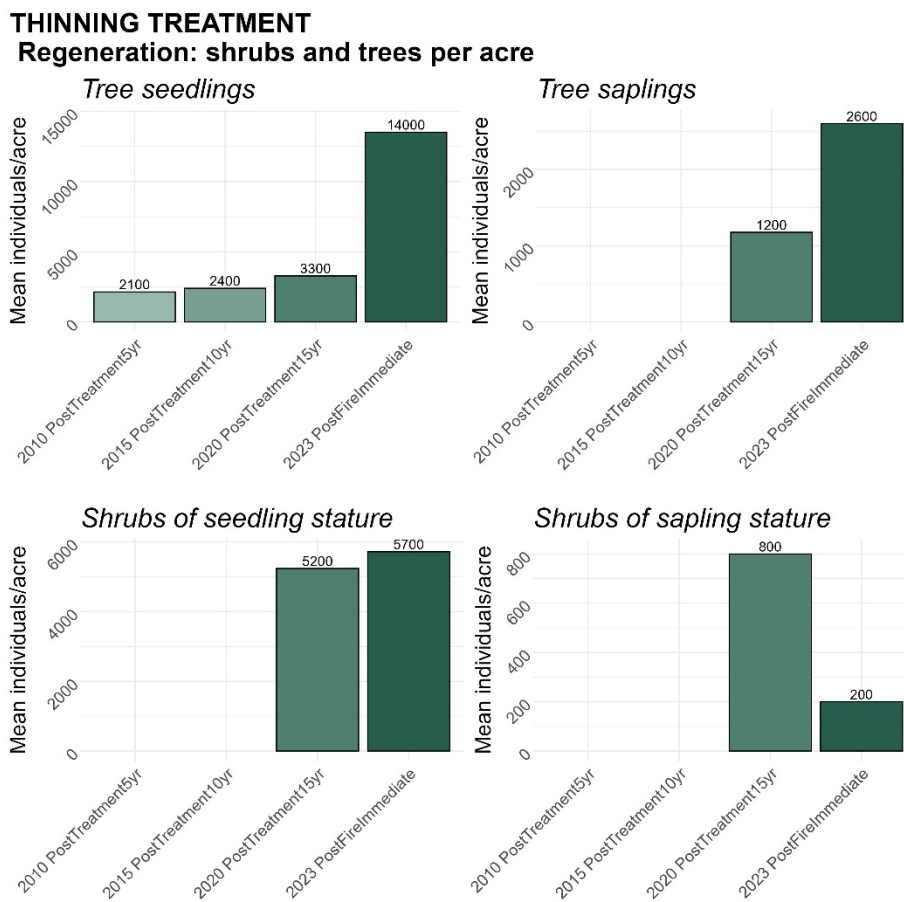


Figure 17. Regeneration densities of trees and shrubs in the seedling and saplings classes across all measurement periods for the thinned treatment unit.

THINNING TREATMENT
Regeneration: dead shrubs and trees per acre

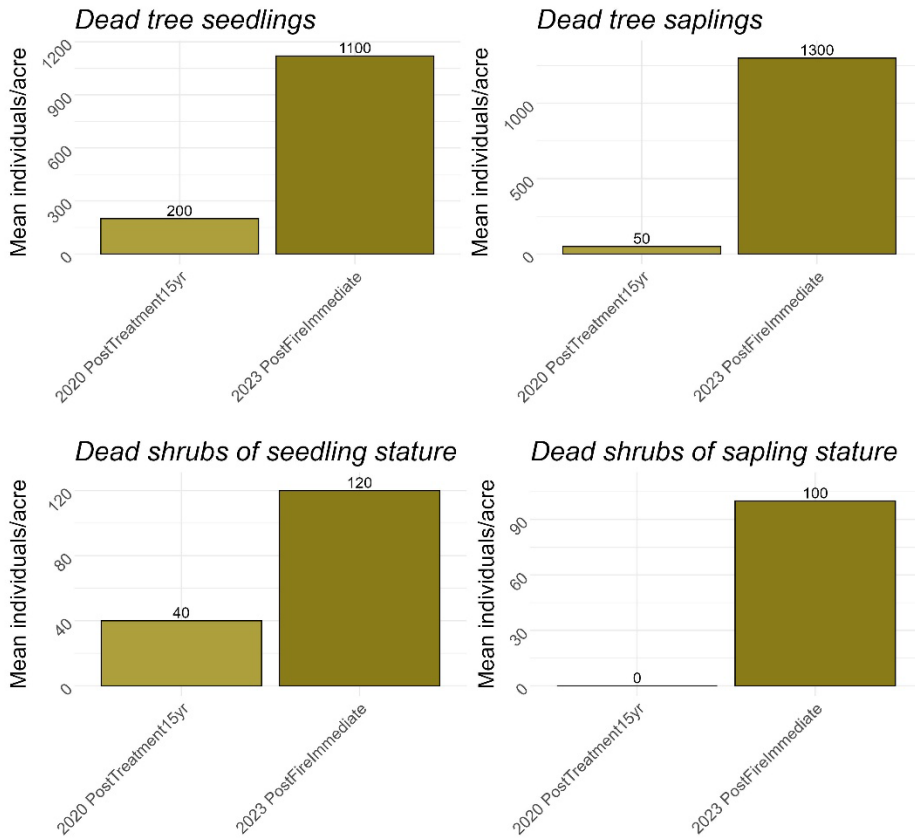


Figure 18. Regeneration densities of dead trees and shrubs in the seedling and sapling classes across all measurement periods for the thinned treatment unit. In the 2010 and 2015 measurements, crews did not differentiate between live and dead regen.

The unit which was thinned and burned displays a pattern similar to the thinned unit. Tree seedlings increased from 2010 5-years post-treatment to 2015 10-years post-treatment, before dropping again in 2020 15-years post-treatment (**Figure 19**). This drop may be due to mortality, or recruitment of seedlings into the sapling demographic (**Figure 20**). Tree saplings increase steadily from 2015 10-years post-treatment to 2023 immediately post-fire. Dead tree saplings also increased from pre- to post-fire. Although tree saplings experience mortality at these plots, new regeneration has been able to keep up with the losses. Across all monitoring periods, tree seedlings are represented mostly by quaking aspen and Gambel oak (**Figure 37**). Pre-fire, tree saplings were dominated by white fir. This species was, however, replaced by quaking aspen post-fire.

The density of shrubs of seedling and sapling statures decreased post-fire; and dead shrubs increased, in tandem. The shrub community, in both years where shrubs were measured, was dominated by creeping barberry, mountain ninebark, and Woods' rose (**Figure 37**).

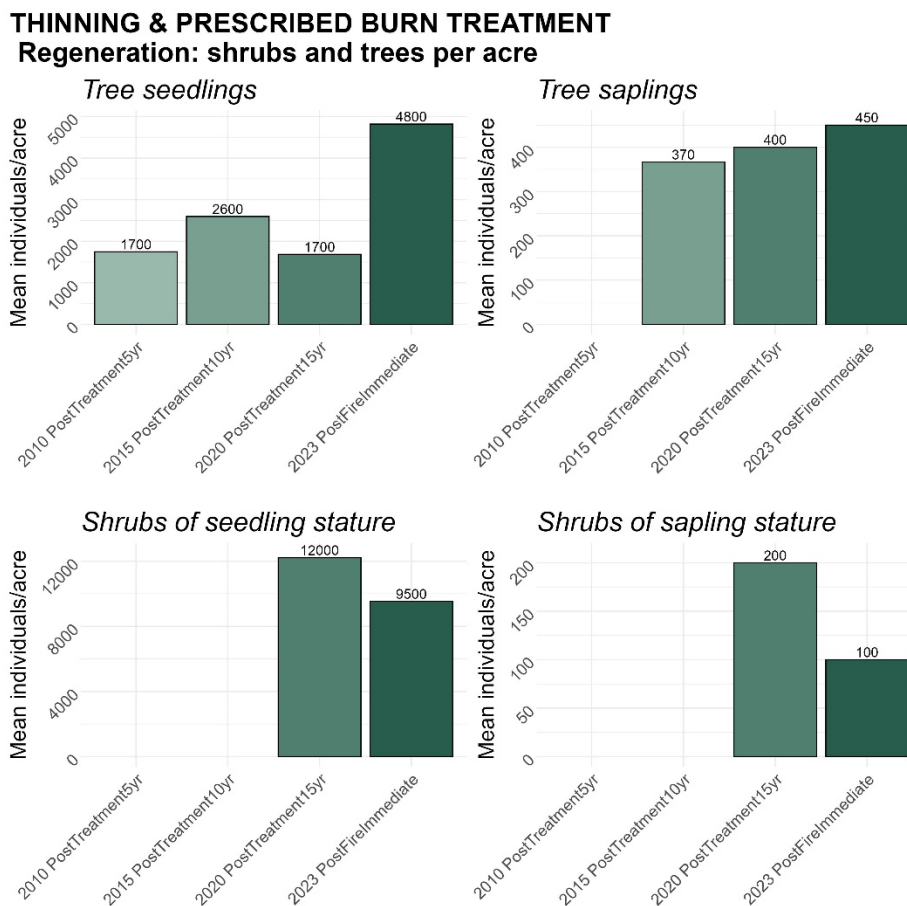


Figure 19. Regeneration densities of trees and shrubs in the seedling and saplings classes across all measurement periods for the thinned & burned treatment unit.

THINNING & PRESCRIBED BURN TREATMENT
Regeneration: dead shrubs and trees per acre

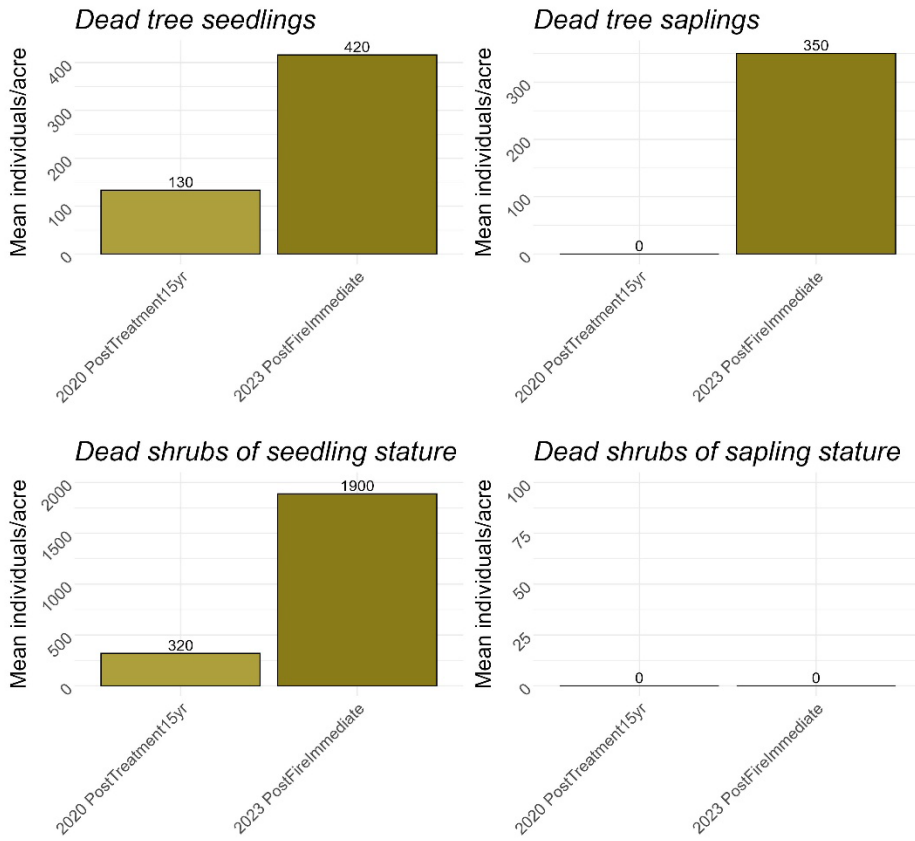


Figure 20. Regeneration densities of dead trees and shrubs in the seedling and sapling classes across all measurement periods for the thinned & burned treatment unit.

Unlike the treated units, the density of tree seedlings decreased between the 2010 and 2015 monitoring periods (**Figure 21**). Density increased from 2015 to 2020, but did not reach 2010 levels. There were no tree saplings observed in 2015, but there were 900 per acre in 2020. Pre-fire, tree regeneration was dominated by quaking aspen, Gambel oak, and white fir. Post-fire, tree seedling density increased substantially to approximately 22,000 per acre, dominated by quaking aspen and Gambel oak, which are known to re-sprout vigorously following wildfire. No tree saplings were observed post-fire. The densities of dead tree regeneration also increased post-fire (**Figure 22**).

The density of shrubs of seedling stature increased from pre- to post-fire monitoring periods, while those of sapling stature decreased to zero. Dead shrubs of seedling stature also increased following fire. Pre-fire, the shrub community at these plots was dominated by mountain-lover (**Figure 38**). Post-fire, the dominant species was Woods' rose.

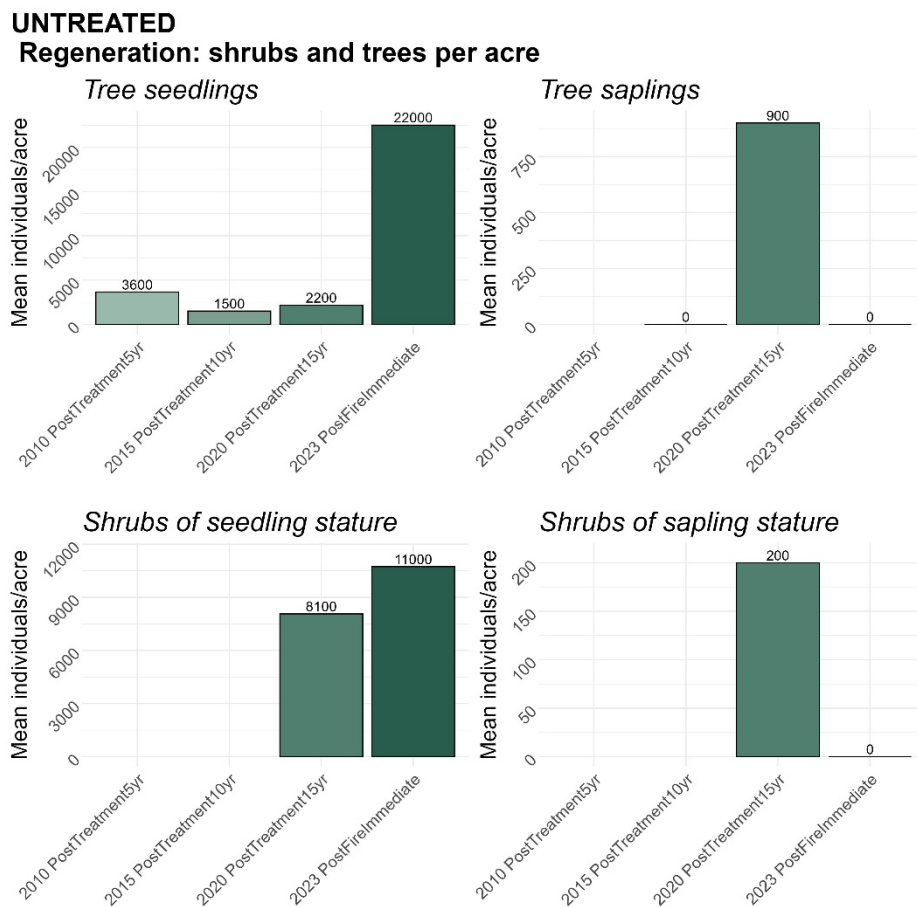


Figure 21. Regeneration densities of trees and shrubs in the seedling and saplings classes across all measurement periods for the untreated unit.

UNTREATED
Regeneration: dead shrubs and trees per acre

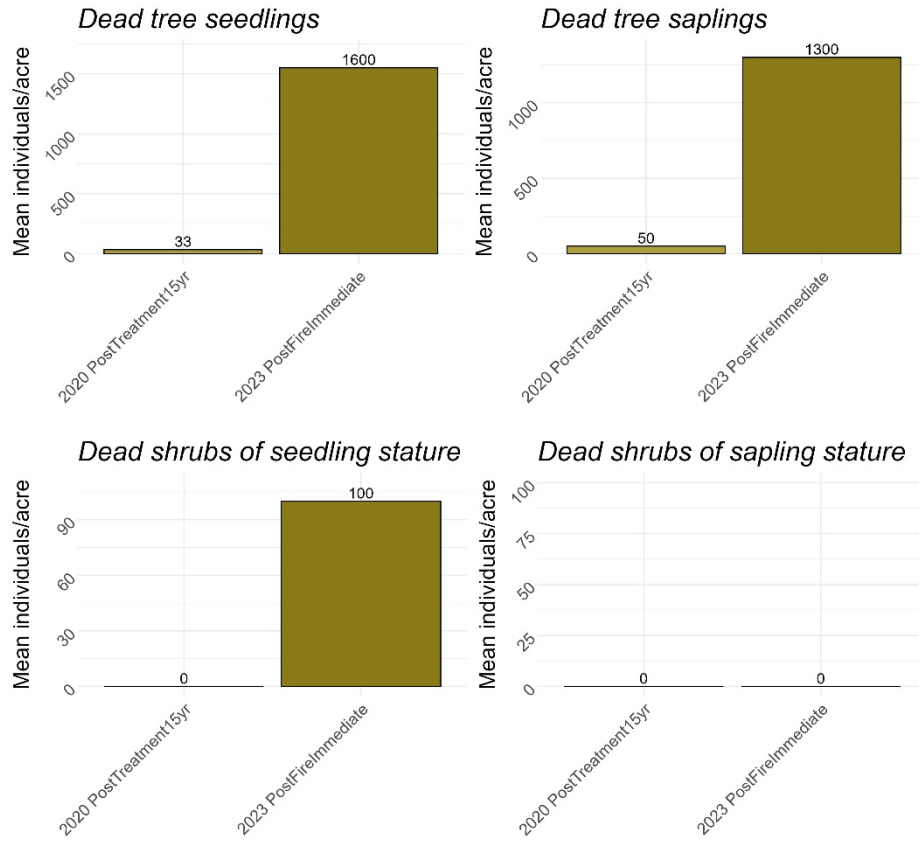


Figure 22. Regeneration densities of dead trees and shrubs in the seedling and sapling classes across all measurement periods for the untreated unit.

Understory & Forest Floor Component

Ground Cover

Ground and aerial cover was recorded in 2010 and 2015 using different protocols than in subsequent monitoring periods. These metrics are provided as supplementary tables (**Table 17**), but are not directly comparable to 2020 and 2023 metrics.

In the treated units, ground cover was dominated by litter and plant basal (the intersection of living herbaceous plants with the ground surface; **Figures 23-24**). Litter also dominated the ground cover in the untreated unit, but plant basal cover was much less – this is likely due to the dense overstory limiting light reaching the forest floor, and thereby limiting understory plant growth.

Post-fire, cover of litter, plant basal, and bole decreased in all treatment units, as is expected – fire consumes fuels. The cover of bare ground, as well as exposed rock and gravel increased, again for all treatment units. In the thinned unit, these components made up 42.2% of ground cover. In the thinned and burned unit, this component made up 52%. In the untreated unit, this component was 64.8%, with bare mineral soil itself at 43%. This is a reflection of the high severity of fire across the units, but especially in the untreated areas.

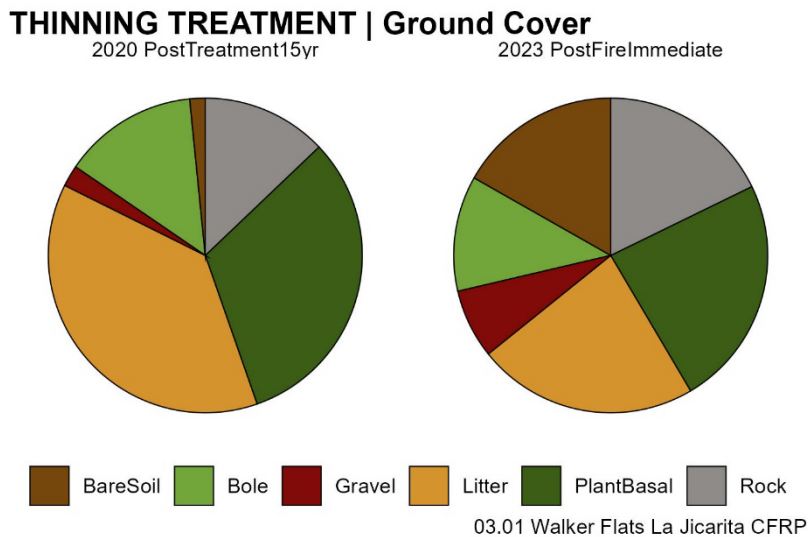


Figure 23. Mean percent ground cover by monitoring status and cover class for the thinned treatment unit.

THINNING & PRESCRIBED BURN TREATMENT | Ground Cover

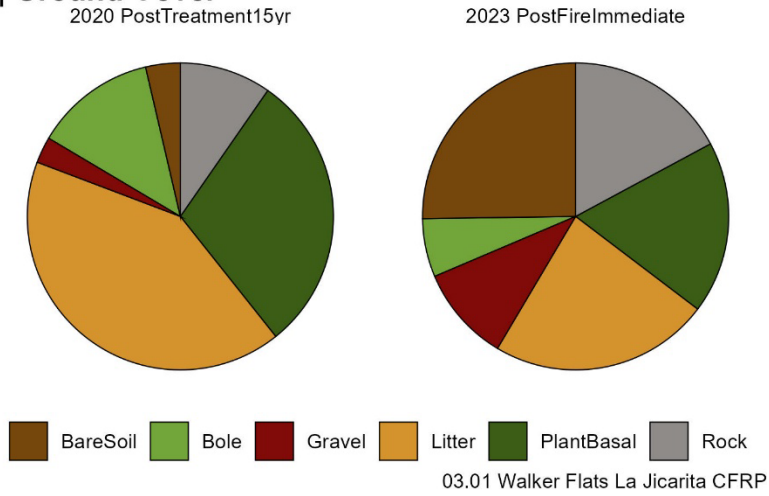


Figure 24. Mean percent ground cover by monitoring status and cover class for the thinned & burned treatment unit.

UNTREATED | Ground Cover

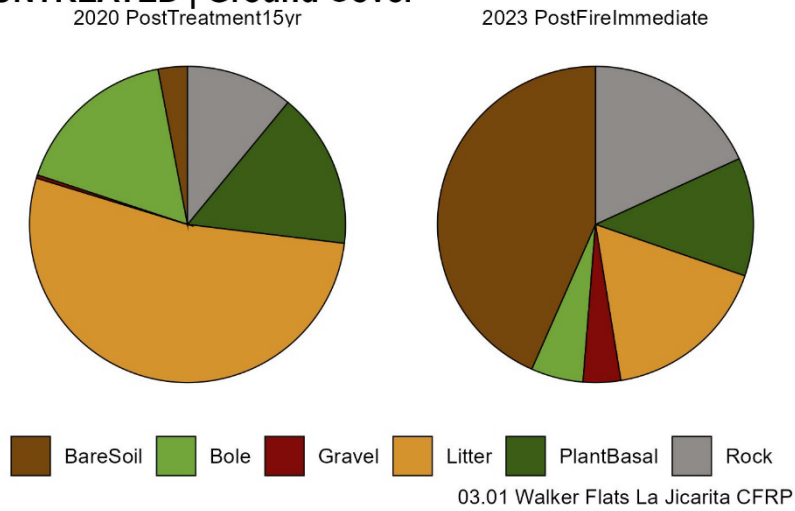


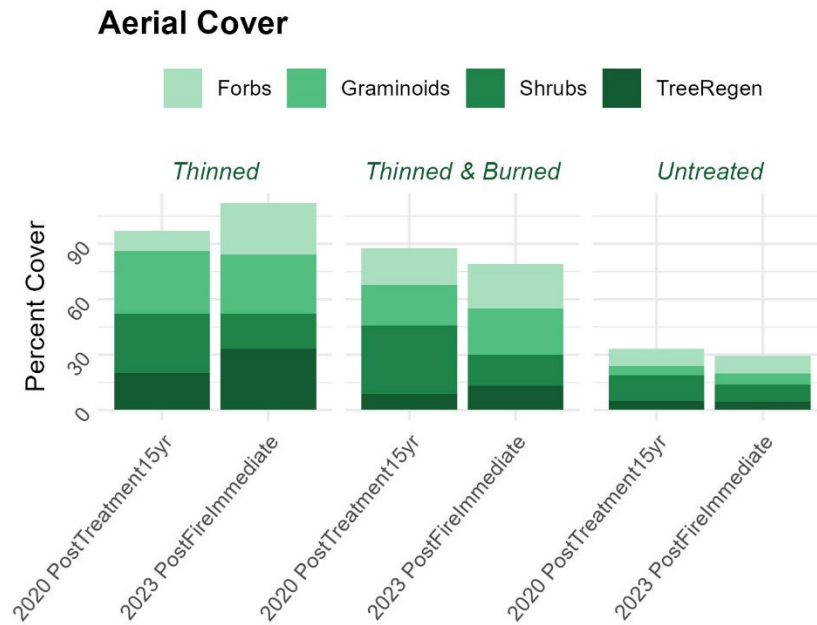
Figure 25. Mean percent ground cover by monitoring status and cover class for the untreated unit.

Table 9. Mean ground cover by monitoring and treatment status.

Ground Cover							
Treatment Status	Monitoring Status	Plant Basal	Bole	Litter	Bare Soil	Rock	Gravel
Thinned	2020 PostTreatment15yr	32	14.0	38	1.6	13.0	2.20
	2023 PostFireImmediate	24	12.0	23	17.0	18.0	7.20
Thinned & Burned	2020 PostTreatment15yr	30	13.0	42	3.7	9.8	2.80
	2023 PostFireImmediate	18	6.1	23	25.0	17.0	10.00
Untreated	2020 PostTreatment15yr	16	17.0	53	3.0	11.0	0.33
	2023 PostFireImmediate	12	5.3	17	43.0	18.0	3.80

Aerial Cover

Aerial cover is measured as the total horizontal area that a plant occupies in the understory. Pre-fire, the untreated unit had the lowest cover by understory plants, dominated by shrubs (**Figure 26, Table 10**). The thinned and burned unit had the next highest cover, also dominated by shrubs. The thinned unit had the highest cover by understory plants, dominated by graminoids, but followed closely by shrubs. Post-fire, the understory plant cover decreased in the thinned and burned as well as the untreated units. The untreated unit became dominated by forbs, followed by shrubs. The thinned and burned unit's understory transitioned to become forb- and graminoid- dominated. The thinned unit actually increased in understory plant cover, dominated by graminoids and tree seedlings and saplings.



03.01 Walker Flats La Jicarita CFRP

Figure 26. Mean percent aerial cover by monitoring and treatment status.

Table 10. Mean percent aerial cover by monitoring and treatment status.

Aerial Cover					
Treatment Status	Monitoring Status	Tree Seedlings & Saplings	Shrubs	Graminoids	Forbs
Thinned	2020 PostTreatment15yr	20	32	34	11
	2023 PostFireImmediate	33	19	32	28
Thinned & Burned	2020 PostTreatment15yr	8.7	37	22	20
	2023 PostFireImmediate	13	17	25	24
Untreated	2020 PostTreatment15yr	5	14	5	9
	2023 PostFireImmediate	4.7	9	6	9.7

Tree Canopy

Canopy cover was not recorded using consistent methodologies in 2010 and 2015, therefore NMFWR I recommends caution comparing these values to 2020 and 2023 values. Part of this has resulted in an uncertainty in 2015 canopy values, represented with a 10% error bar in the following figure (**Figure 27**).

NMFWR I measures canopy cover with a spherical concave densiometer. In the thinned unit, canopy cover remained relatively consistent across pre-fire measurement periods (**Figure 27**). The same is true for the thinned and burned, as well as the untreated unit. The thinned and burned unit, however, did drop in canopy cover from 48% in 2015 10-years post-treatment to 2020 15-years post treatment. The cause for this decrease is uncertain, but may be due to branch die-off in the overstory or simply differences in methodologies among crew members. As would be expected with the overstory tree mortality observed in the HPCC wildfire, canopy cover decreased in all units. Canopy cover percentages are now closely comparable, at 32% in the thinned unit, 21% in the thinned and burned unit, and 27% in the untreated unit.

Densiometer Canopy Cover

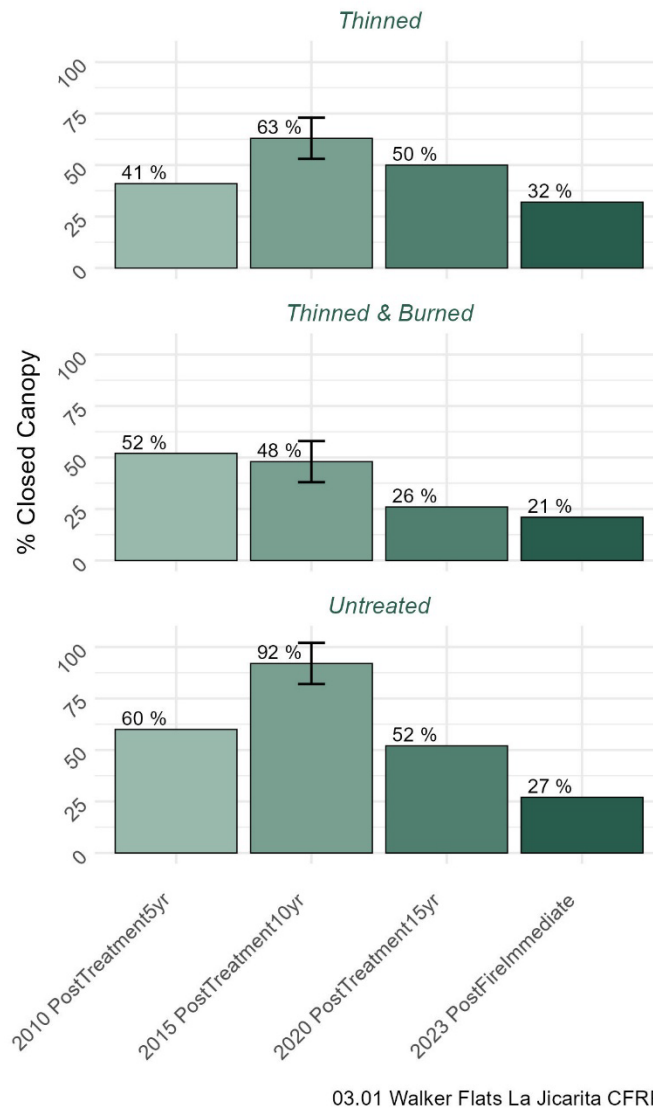


Figure 27. Mean percent closed tree canopy by monitoring and treatment status. Note the 10% error bar on measurements from the 2015 PostTreatment10yr monitoring period.

Surface Fuels Vegetation (Ladder Fuels)

Average biomass of ladder fuels in the thinned unit decreased from 160 tons per acre in 2010 to 90 tons per acre in 2015, then increased to above 2010 levels, to 570 tons per acre in 2020 (**Figure 28, Table 11**). The initial increase may be due to self-pruning of clonal species of trees, such as aspen and oak. Growth surges following disturbance, then the organisms are able to thin themselves. The large increase in 2020 was mostly composed of dead woody plants. Young trees may have died, then fell into the survey area for ladder fuels. Prior to 2020, the dominant component was live woody plants.

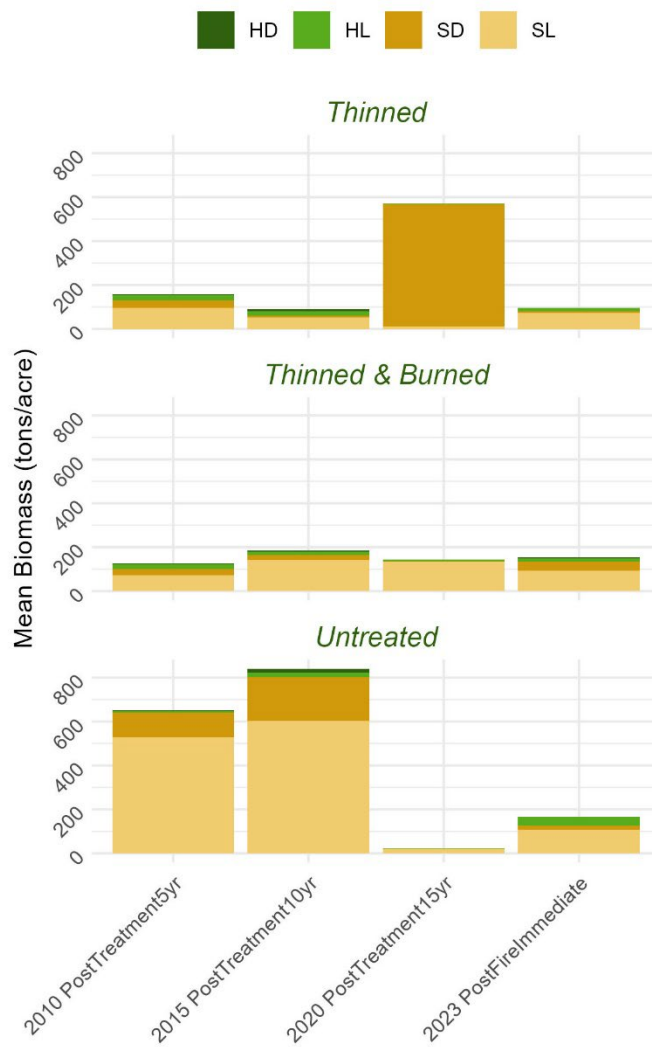
The thinned and burned unit had overall lower amounts of ladder fuels, which remained relatively consistent. Total ladder fuel biomass increased from 130 tons per acre in 2010 to 140 tons per acre in

2015. Biomass then increased slightly to 150 tons per acre. The dominant component in all three pre-fire monitoring periods was live woody plants – likely quaking aspen and Gambel oak.

The untreated unit had the overall highest biomass of ladder fuels in the 2010 and 2015 monitoring periods, at 650 and 840 tons per acre, composed mostly of live woody vegetation. This is followed by a sharp decline to 23 tons per acre in 2020. This is likely due to self-thinning of clonal species as discussed previously. Other potential reasons could include plants simply growing too large to be considered ladder fuels, or thinned individuals degrading to the point that they are considered surface fuels, not ladder fuels.

Post-fire, the ladder fuels in the thinned unit decreased substantially, to 95 tons per acre, which is slightly higher than 2015 levels. Since the dominant component pre-fire was dead woody plants, these were likely readily consumed by the fire. Live woody plants dominated the thinned units post-fire, followed by live herbaceous plants. Ladder fuels actually slightly increased immediately post-fire, to 150 tons per acre. The biomass of live woody fuels decreased, while dead woody and live and dead herbaceous plants increased. This reflects mortality due to the fire as well as a surge of post-fire regeneration. The ladder fuels in the untreated unit increased over 7-fold immediately post-fire, to 170 tons per acre. This can be attributed to the 100% mortality seen at these plots. The high intensity of the fire encourages rapid understory growth of woody and herbaceous species.

Ladder Fuels: tons per acre



03.01 Walker Flats La Jicarita CFRP

Figure 28. Mean ladder fuel biomass by vegetation type across monitoring and treatment status.

Table 11. Mean ladder fuel biomass by vegetation type across monitoring and treatment status. Total biomass of ladder fuels is also displayed.

Ladder Fuel Biomass						
Treatment Status	Monitoring Status	Vegetation	Mean % Cover	Mean Height (ft)	Mean Biomass (tons/acre)	Total Biomass (tons/acre)
Thinned	2010 PostTreatment5yr	HD	2.1	0.17	1.9	160
		HL	22	1.4	25	
		SD	2.1	1.1	33	
		SL	8.3	1.6	96	
	2015 PostTreatment10yr	HD	18	0.3	8.2	90
		HL	34	0.49	20	
		SD	1.1	0.61	8.5	
		SL	6.4	3.3	53	
	2020 PostTreatment15yr	HD	0.25	0.12	0.063	570
		HL	3.5	0.25	1.1	
		SD	10	2.8	560	
		SL	1.4	1.1	12	
2023 PostFireImmediate	HD	2.2	0.14	0.51	95	
	HL	18	0.62	14		
	SD	0.75	1.7	7.2		
	SL	8	1.7	73		
Thinned & Burned	2010 PostTreatment5yr	HD	2.3	0.44	1.6	130
		HL	22	0.83	24	
		SD	0.57	2.5	29	
		SL	9.1	1.6	71	
	2015 PostTreatment10yr	HD	14	0.31	6.5	190
		HL	26	0.42	14	
		SD	1	2.4	24	
		SL	8.8	2.5	140	
	2020 PostTreatment15yr	HD	0.59	0.17	0.19	140
		HL	17	0.24	7	
		SD	0.037	1.4	1.7	
		SL	17	1.9	130	
2023 PostFireImmediate	HD	5.3	0.32	4.8	150	
	HL	21	0.6	17		
	SD	4.7	1.8	41		
	SL	16	1.5	92		
Untreated	2010 PostTreatment5yr	HD	2.2	0.21	1.6	650
		HL	12	0.41	7.4	
		SD	6.8	5.2	110	
		SL	32	3.8	530	
	2015 PostTreatment10yr	HD	25	0.44	19	840
		HL	28	0.51	21	
		SD	6.8	4.3	200	
		SL	24	5.3	600	
	2020 PostTreatment15yr	HD	1.9	0.055	0.082	23
		HL	7.1	0.14	1.4	
		SD	0			
		SL	2.1	3.1	22	
2023 PostFireImmediate	HD	3.8	0.1	1.3	170	
	HL	34	0.95	40		
	SD	1.7	0.75	18		
	SL	22	1.3	110		

Surface Fuels

Trends in total surface fuels are fairly similar across the three treatment units. Surface fuels in tons per acre increase from 2010 to 2015, then either increase or decrease slightly in 2020, before ultimately decreasing immediately post-fire in 2023. This is consistent with the fact that litter, fine and woody fuels accumulate over time, and are consumed by wildfire.

Table 12. Fuel loads by type, monitoring status, and treatment unit.

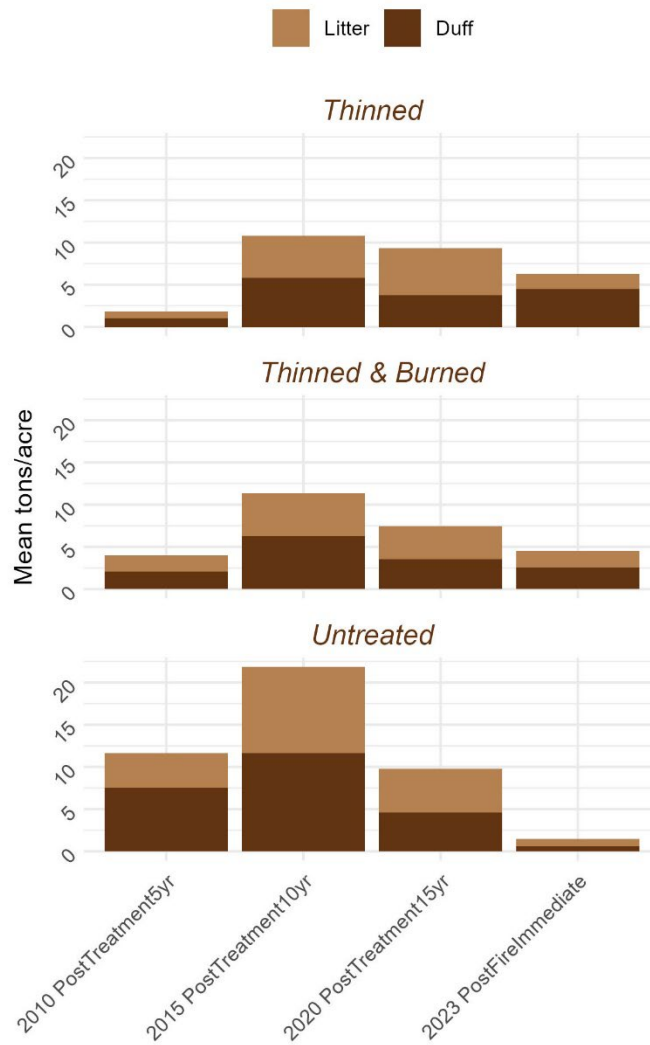
Total Surface Fuels Table											
TreatmentStatus	Monitoring Status	1-hr (tons/acre)	10-hr (tons/acre)	100-hr (tons/acre)	1000-hr sound (tons/acre)	1000-hr rotten (tons/acre)	Litter (tons/acre)	Duff (tons/acre)	Total Fine Fuels (tons/acre)	Total Wood Fuels (tons/acre)	Total Surface Fuels (tons/acre)
Thinned	2010 PostTreatment5yr	0.15	2.1	2.2	5.7	5.7	0.8	1	4.4	16	18
	2015 PostTreatment10yr	0.13	0.85	0.17	8.7	1.4	5	5.8	1.1	11	22
	2020 PostTreatment15yr	0.083	0.97	1.4	5.3		5.6	3.7	2.5	7.8	17
	2023 PostFireImmediate	0.025	0.73	0.75	7.6	1.2	1.8	4.5	1.5	10	17
Thinned & Burned	2010 PostTreatment5yr	0.058	0.92	1.6	6.6	1.3	1.9	2.1	2.6	11	15
	2015 PostTreatment10yr	0.11	0.87	0.84	8.8	12	5.1	6.3	1.8	23	34
	2020 PostTreatment15yr	0.038	0.99	2.7	14	7.9	3.9	3.6	3.7	25	33
	2023 PostFireImmediate	0.05	0.79	1.2	7.5	2.8	2	2.5	2.1	12	17
Untreated	2010 PostTreatment5yr	0.34	2.7	1.7	6.2	5.6	4.2	7.5	4.8	17	28
	2015 PostTreatment10yr	0.21	1	0.97	16	7.7	10	12	2.2	26	47
	2020 PostTreatment15yr	0.19	2	1.7	15	2.5	5.2	4.6	3.9	22	31
	2023 PostFireImmediate	0.065	0.3	0.14	7.7		0.92	0.58	0.51	8.2	9.7

Litter and Duff

In the thinned unit, litter and duff fuel loads increased by six-fold from 1.8 tons per acre 5 years post-treatment to 10.8 tons/acre 10 years post-treatment (**Table 12, Figure 29**). Litter and duff then decreased slightly to 9.3 tons/acre 15 years post-treatment. Depths of litter and duff follow a similar trend (**Table 13**).

The same trend is reflected in the thinned and burned unit, increasing from 4 tons per acre 5 years post-treatment to 11.4 tons per acre 10 years post-treatment, then decreased to 7.5 tons per acre 15 years post-treatment. This is again repeated in the untreated unit, although at higher magnitudes. Litter and duff loads in the untreated unit increased from 11.7 tons per acre 5 years post-treatment to 22 tons per acre 10 years post-treatment, then decreased to 9.8 tons per acre 15 years post-treatment. The cause of the decrease in litter and duff from 2015 to 2020 is uncertain, but may be due to disturbances unknown to NMFWR or due to differences in measurement location or protocols by crews. However, we can observe the decrease in litter and duff loads across all units following the HPC wildfire. The most substantial decrease occurred in the untreated unit, which is consistent with the other evidence we have reviewed as to the high severity of fire in this unit.

Litter & duff: tons per acre



03.01 Walker Flats La Jicarita CFRP

Figure 29. Mean litter and duff loads by monitoring and treatment status.

Table 13. Mean litter and duff depth in inches by monitoring and treatment status.

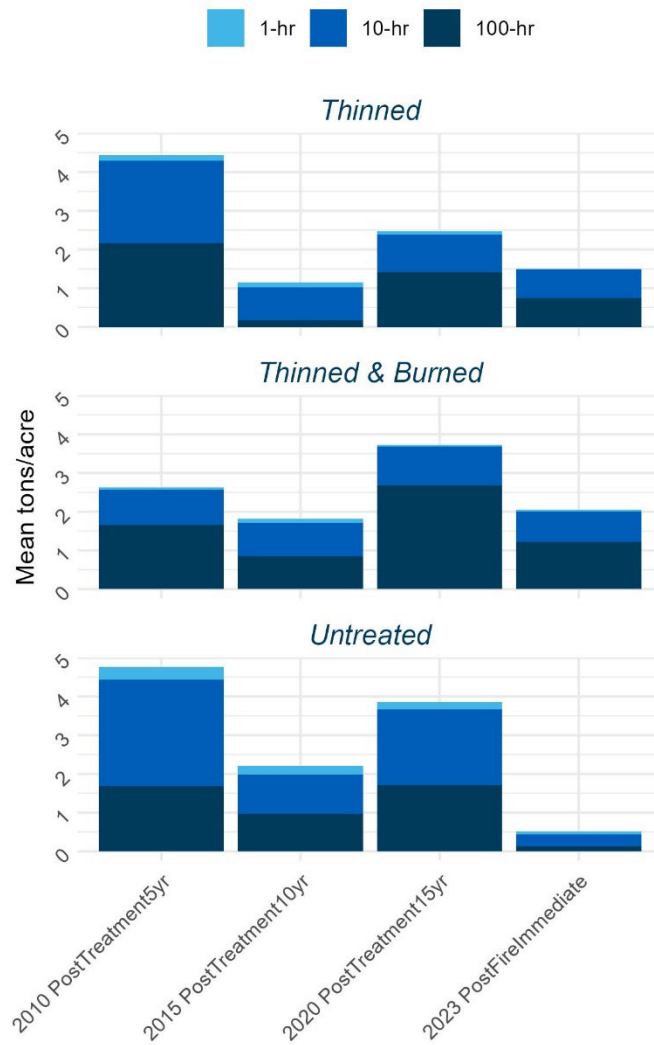
Mean Litter and Duff Depths (inches)			
Treatment Status	Monitoring Status	Litter	Duff
Thinned	2010 PostTreatment5yr	0.16	0.100
	2015 PostTreatment10yr	1.00	0.580
	2020 PostTreatment15yr	1.10	0.380
	2023 PostFireImmediate	0.36	0.450
Thinned & Burned	2010 PostTreatment5yr	0.38	0.210
	2015 PostTreatment10yr	1.00	0.630
	2020 PostTreatment15yr	0.77	0.360
	2023 PostFireImmediate	0.40	0.250
Untreated	2010 PostTreatment5yr	0.83	0.750
	2015 PostTreatment10yr	2.00	1.200
	2020 PostTreatment15yr	1.00	0.460
	2023 PostFireImmediate	0.18	0.058

Fine Fuels

All three treatment units follow a similar pattern in fine fuel loads, but at differing magnitudes (**Figure 30, Table 12**). Fine fuels decreased from 2010 5 years post-treatment to 2015 10 years post-treatment, increased in 2020 15 years post-treatment, then decreased following the 2022 HPCC wildfire. In the 5-year post-treatment period, the lowest fine fuel loads were in the thinned and burned unit, which is consistent with the prescribed fire that occurred in this unit in 2008 (2.6 tons per acre). This unit also had the lowest fine fuel loads in the closest pre-fire measurement period, 2020 (2.5 tons per acre). Initially, in 2010 5 years post-treatment, the unit which was only thinned had a fine fuel load nearly half that of the untreated unit (2.6, 4.8 tons per acre, respectively). By the closest pre-fire measurement period, the fine fuel loads of these units were nearly the same, at 3.7 and 3.9 tons per acre, respectively.

Post-fire, the thinned unit experienced a 40% consumption of fine fuels, and the thinned & burned had a comparable 43% consumption of fine fuels. The untreated plots experienced 87% consumption of fine fuels, which is consistent with other data regarding fire intensity at these plots.

Fine fuels: tons per acre



03.01 Walker Flats La Jicarita CFRP

Figure 30. Mean fine fuel loads by monitoring and treatment status.

Thousand-Hour Fuels

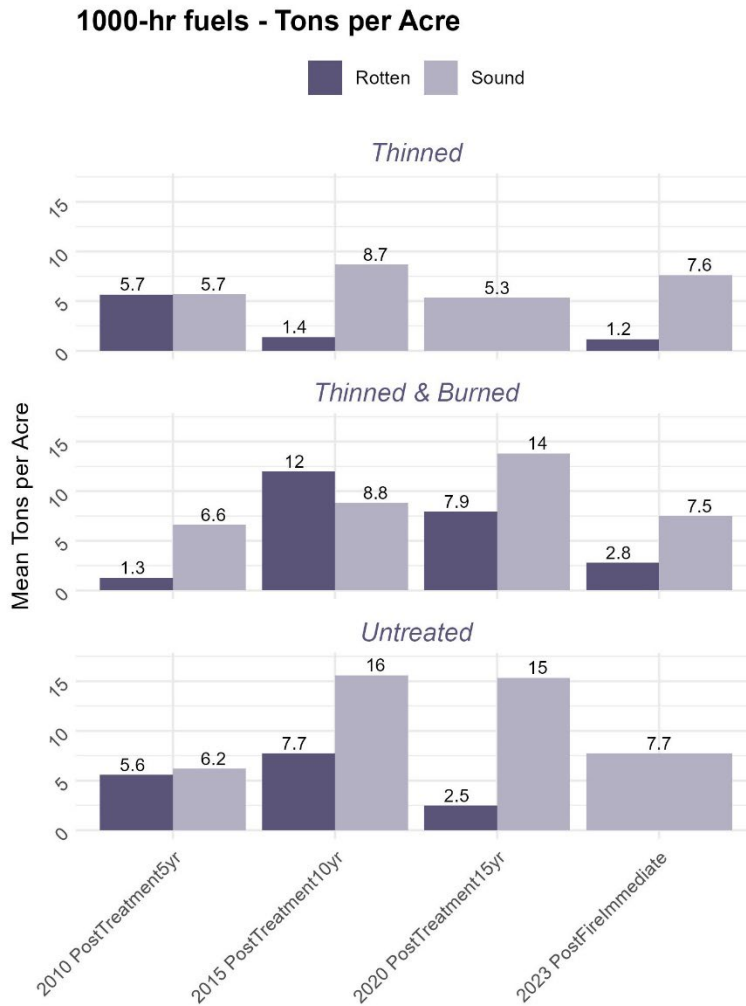
Thousand-hour fuels (fuels greater than 3 inches in diameter) are designed a decay class of 1 through 5, one being freshly downed, 5 being the most decayed. A more detailed breakdown of these definitions is available in the supplementary materials (**Table 18**). Decay classes 1-3 are referred to as “sound,” and decay classes 4 and 5 are referred to as “rotten.” NMFWR I would like to note that it can be difficult to determine the decay class of severely burned logs. For example, a relatively “fresh” log that was burned may be assigned a higher decay class due to the ratio of mass consumed. Alternatively, logs which are burned take much longer to decay naturally, because fire dries out the wood while also killing agents of decay such as insects and fungi.

In the thinned unit, rotten fuels decreased leading up to the wildfire, as is the natural progression of decay. Sound fuels increased from 2010 to 2015, but decreased in 2020 (**Figure 31**). The Walker Flats area is a fuelwood production area, and harvest of salvageable logs is common. These activities may contribute to decreases in sound fuels. An increase in any thousand-hour fuels can usually be attributed to overstory trees falling and thus transitioning to a surface fuel.

The thinned and burned unit saw an increase in rotten fuels from 2010 to 2015, then a decrease in 2020. This may be due to logs entering an advanced state of decay where they may be recorded as duff rather than a log. Sound fuels increased steadily across all monitoring periods in this unit.

The untreated plots experienced a proportional increase in rotten and sound fuels from 2010 to 2015. In 2020, rotten fuels decreased and sound fuels remained approximately the same. Immediately post-fire, the untreated unit had no rotten fuels measured, while sound fuels decreased by nearly 50%. In the thinned and burned unit, rotten and sound fuels decreased by 65 and 46%, respectively. The thinned unit had approximately equivalent load to the thinned and burned unit, but this represented an increase in both rotten and sound fuels. Note that there was an observed instability of snags and even growing

stock trees in this project unit, due to mortality, disease, and flash flooding. Therefore, these metrics are not necessarily indicative of thousand-hour fuel consumption, and may represent overstory trees falling.

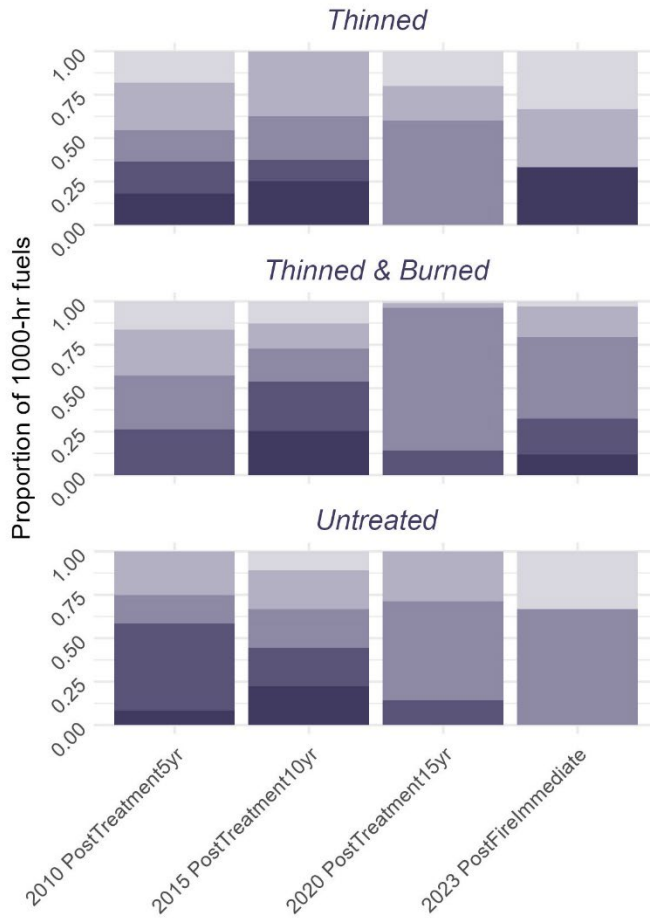


03.01 Walker Flats La Jicarita CFRP

Figure 31. Mean thousand-hour fuel loads by monitoring status for all treatment units.

1000-hr fuels by decay class

Sound fuels: Classes 1-3, Rotten fuels: 4-5



03.01 Walker Flats La Jicarita CFRP

Figure 32. Proportions of thousand-hour fuels by decay class, monitoring, and treatment status.

Photo Comparisons:

The following pages show photo comparisons from exemplary plots that display the types of changes the landscape has undergone since NMFWRRI began monitoring this project in 2010.



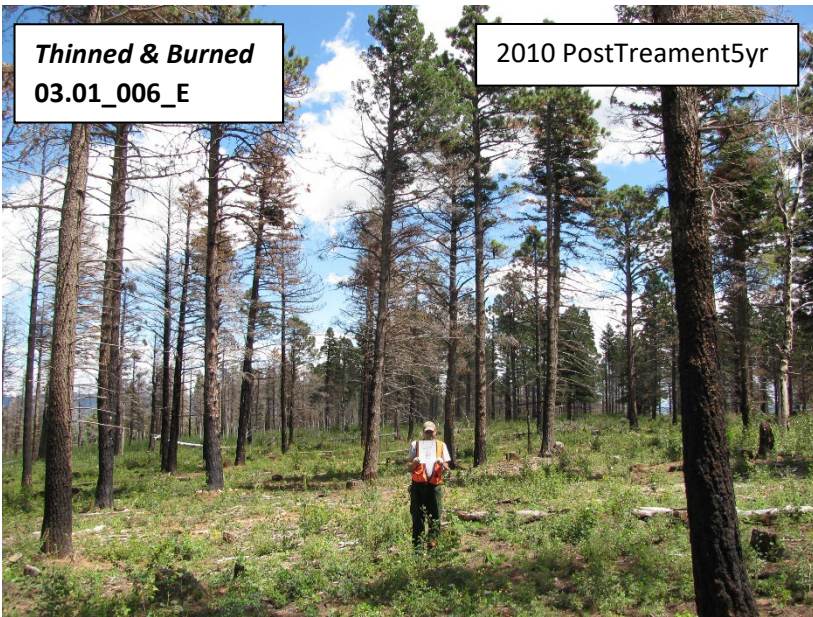
Thinned & Burned
03.01_001_N

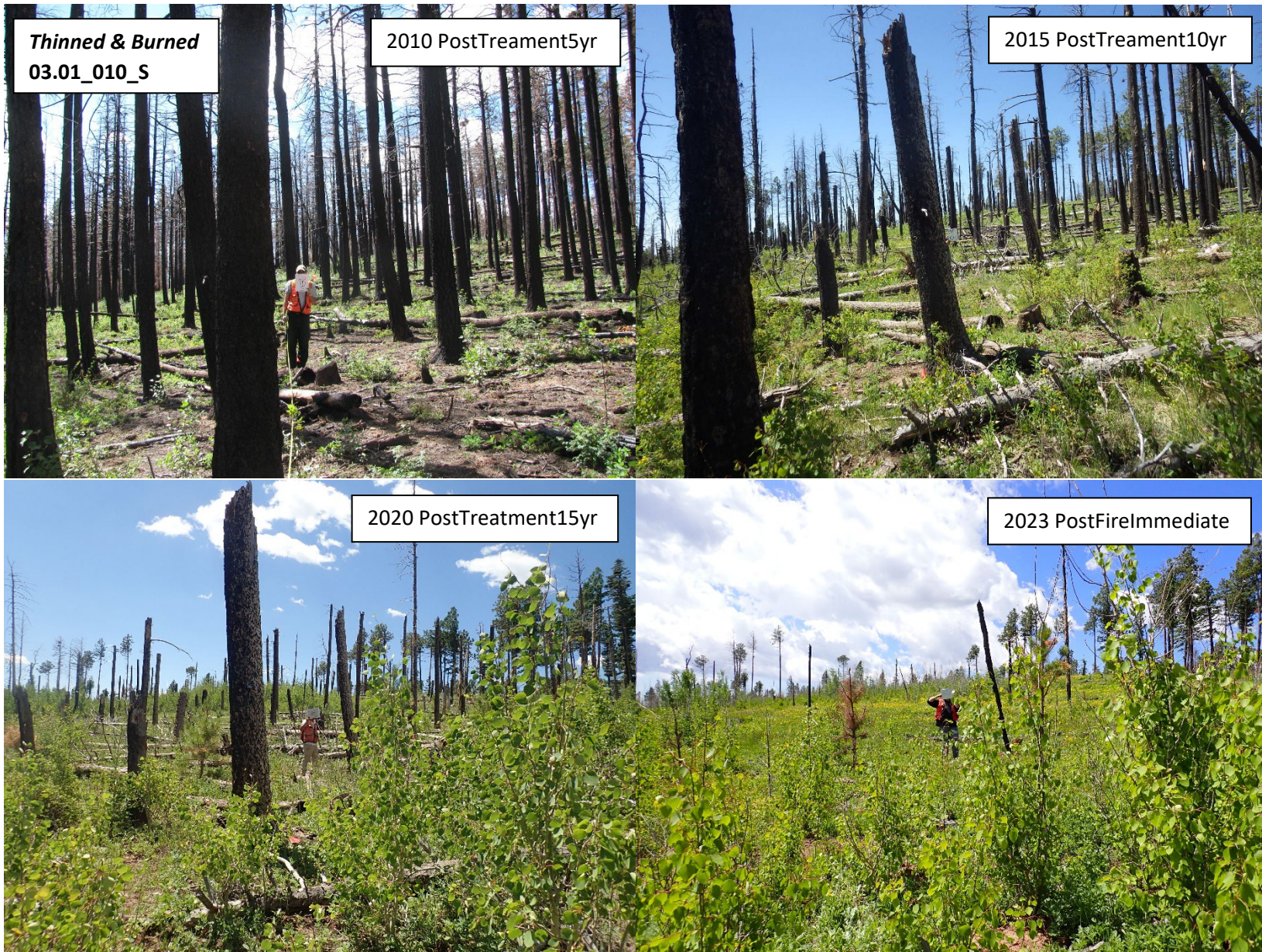
2010 PostTreatment5yr

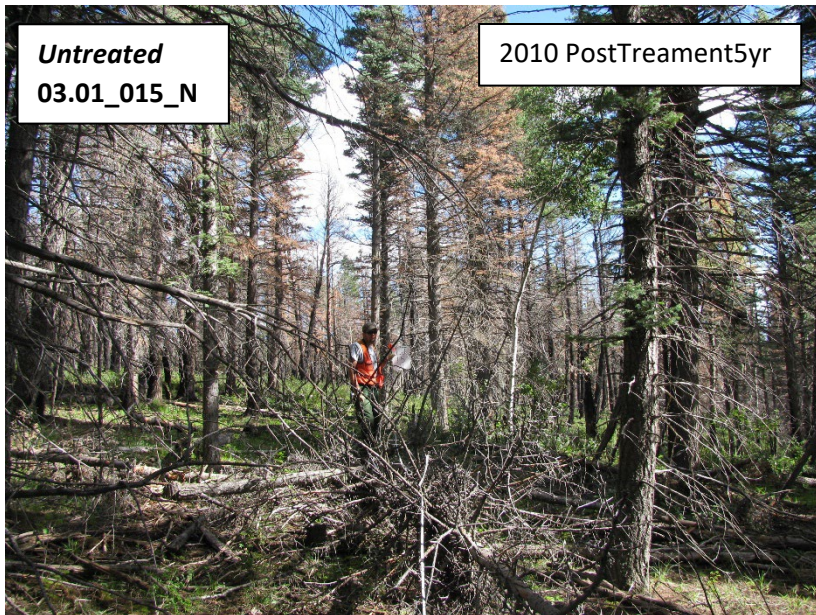
2015 PostTreatment10yr

2020 PostTreatment15yr

2023 PostFireImmediate











Thinned & Burned
03.01_028_W

2010 PostTreatment5yr



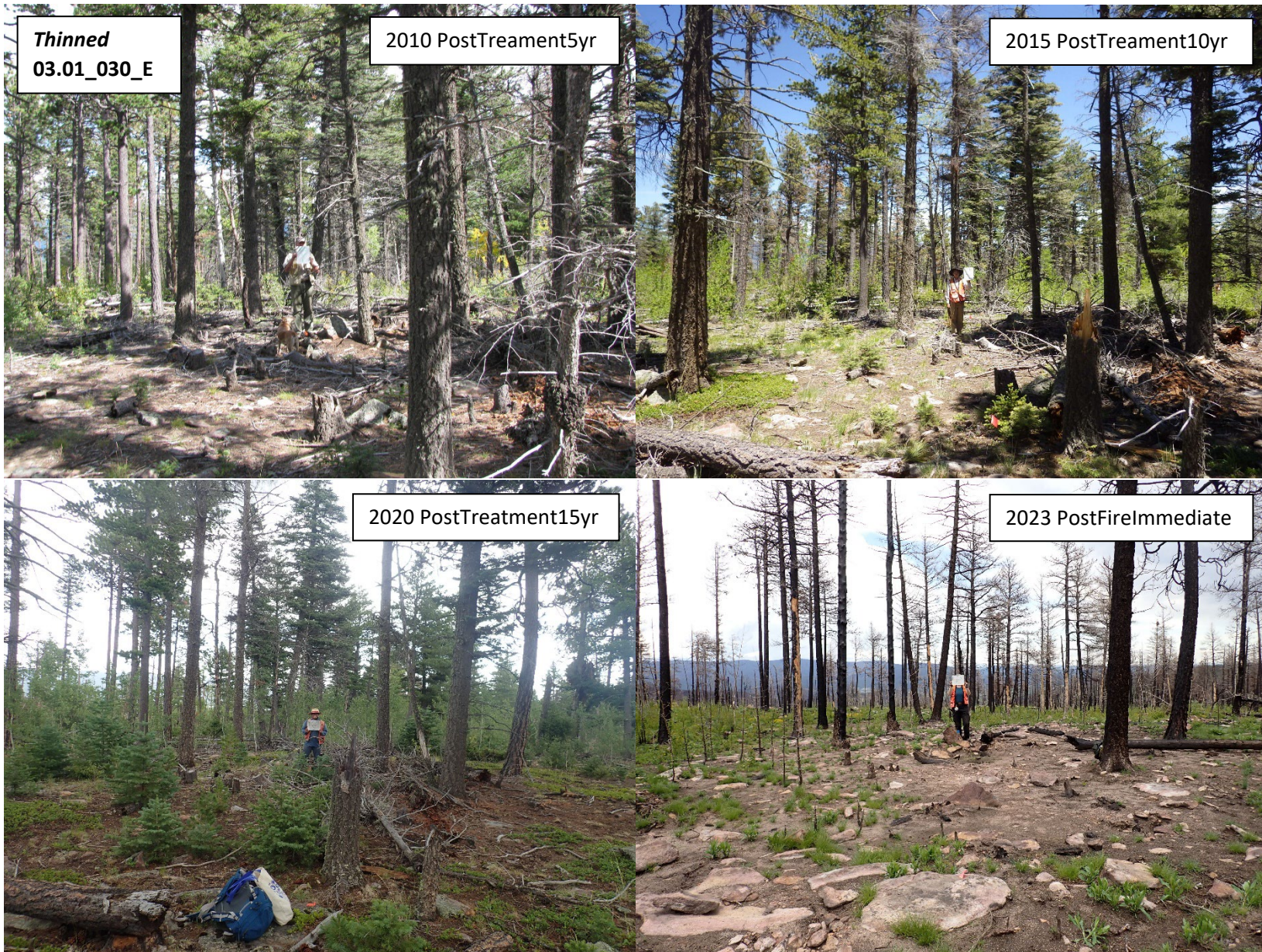
2015 PostTreatment10yr



2020 PostTreatment15yr



2023 PostFireImmediate



Additional Resources

In 2023, NMFWR I published their first version of a field manual: “Guidelines and Protocols for Monitoring Upland Forests – Field Manual.” - <https://nfmwri.org/resources/upland-forests-monitoring-field-manual/>

For more information regarding monitoring criteria and methodology please contact NMFWR I or consult the 2008 document authored by Derr, et. al., *Monitoring the Long Term Ecological Impacts Of New Mexico’s Collaborative Forest Restoration Program, New Mexico Forest Restoration Series Working Paper 5*, available on NMFWR I’s website here: <http://nfmwri.org/collaborative-forest-restoration-program/cfrp-long-term-monitoring>.

For additional information on forest health, forest insects and disease, and non-native species management see resources from the New Mexico Forest and Watershed Health Office: <https://www.emnrd.nm.gov/sfd/forest-and-watershed-health-office/>

For additional information on post-wildfire community resources, events, and recovery action strategy see the Hermit’s Peak/Calf Canyon Post-Fire Resource Hub: <https://hermits-peak-calf-canyon-fire-resources-nmhu.hub.arcgis.com/>

Works Cited

- Dahms, Cathy W &, Geils, Brian W. (July 1997) *An assessment of forest ecosystem health in the Southwest*. General Technical Report RM-GTR-295. U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.
- Derr, T., McGrath, D., Estrada, V., Krasilovsky, E., & Evans, Z. (n.d.). *MONITORING THE LONG TERM ECOLOGICAL IMPACTS OF NEW MEXICO’S COLLABORATIVE FOREST RESTORATION PROGRAM*.
- New Mexico Forest and Watershed Restoration Institute. (2024). *Guidelines and Protocols for Monitoring Upland Forests Field Manual, First Edition*.
- New Mexico Forest and Watershed Restoration Institute. (2022, August 24). *Hermit’s Peak and Calf Canyon Fire*. ArcGIS StoryMaps. <https://storymaps.arcgis.com/stories/d48e2171175f4aa4b5613c2d11875653>
- Southwest Forest Health and Wildfire Prevention Act of 2004, no. 108–317, 108th Congress (2004). <https://www.congress.gov/108/plaws/publ317/PLAW-108publ317.pdf>

Supplementary Information

Species Lists

Table 14a-b. List of observed tree and shrub species by species symbol, scientific name, and common name

Tree Species

Species Symbol	Scientific Name	Common Name
ABCO	<i>Abies concolor</i>	white fir
JUCO6	<i>Juniperus communis</i>	common juniper
PIFL2	<i>Pinus flexilis</i>	Limber pine
PIPO	<i>Pinus ponderosa</i>	ponderosa pine
PIPU	<i>Picea pungens</i>	Blue spruce
POTR5	<i>Populus tremuloides</i>	Quaking aspen
PSME	<i>Psuedotsuga menziesii</i>	Douglas-fir
QUGA	<i>Quercus gambelii</i>	Gambel oak
SABE2	<i>Salix bebbiana</i>	Bebb willow
2TREE		Unknown species*

*Dead/burned and lacking identifying characteristics

Shrub Species

Species Symbol	Scientific Name	Common Name
ARUV	<i>Arctostaphylos uva-ursi</i>	kinnickinnick
CEFE	<i>Ceanothus fendleri</i>	Fendler's ceanothus
JAAM	<i>Jamesia Americana</i>	Fivepetal cliffbush
MARE11	<i>Mahonia repens</i>	creeping barberry
PHMO4	<i>Physocarpus monogynus</i>	Mountain ninebark
PAMY	<i>Paxistima myrsinites</i>	Oregon boxleaf
PRVI	<i>Prunus virginiana</i>	Chokecherry
RIBES	<i>Ribes sp.</i>	Currant species
ROWO	<i>Rosa woodsii</i>	Woods' rose

Species Symbol	Scientific Name	Common Name
RUID	<i>Rubus idaeus</i>	American red raspberry
RUPA	<i>Rubus parviflorus</i>	thimbleberry
SHCA	<i>Shepherdia canadensis</i>	Russet buffaloberry
SYRO	<i>Symphoricarpos rotundifolius</i>	Roundleaf snowberry
UNK_003		Unknown species*

*Species could not be identified by field crew

Plot Center Coordinates

Table 15. List of plots coordinates by plot name, latitude, and longitude

Treatment Status	Plot Name*	Latitude	Longitude
Thinned	03.01_017	36.012654	-105.457067
	03.01_022	36.012708	-105.447013
	03.01_025	36.011064	-105.453068
	03.01_030	36.009380	-105.448577
	03.01_032	36.007653	-105.449635
Thinned & Burned	03.01_001	36.027583	-105.455685
	03.01_004	36.025957	-105.453711
	03.01_005	36.025954	-105.451742
	03.01_006	36.017642	-105.451066
	03.01_007	36.017629	-105.449044
	03.01_008	36.017663	-105.447043
	03.01_009	36.015854	-105.457069
	03.01_010	36.015956	-105.451066
	03.01_011	36.015992	-105.449080
	03.01_013	36.014296	-105.455144
	03.01_014	36.014375	-105.451067
	03.01_016	36.014349	-105.446999
	03.01_018	36.012668	-105.455108
	03.01_019	36.012527	-105.453070
	03.01_020	36.012700	-105.451082
	03.01_021	36.012700	-105.449029
	03.01_026	36.011063	-105.451076
	03.01_027	36.011094	-105.448981
	03.01_028	36.011015	-105.447060
	03.01_029	36.009276	-105.450995
	03.01_031	36.009428	-105.446939
	03.01_034	36.006124	-105.446959
	03.01_035	36.006132	-105.444911
	03.01_036	36.004477	-105.446927

	03.01_037	36.004491	-105.444897
	03.01_038	36.002844	-105.444906
	03.01_012	36.016026	-105.444957
Untreated	03.01_015	36.014347	-105.449074
	03.01_024	36.011002	-105.455171

*Previous iterations and records of this project use the non-standardized plot names “LJ_01”, etc.

Abbreviations & Acronyms

Table 16. List of abbreviated terms by abbreviation and definition

Acronym/Abbreviation/Term	Definition as used by NMFWRI
1-hr fuel	Woody surface debris < 0.25 inches in diameter
10-hr fuel	Woody surface debris 0.25 – 1 inch in diameter
100-hr fuel	Woody surface debris 1.0 – 3.0 inches in diameter
1000-hr fuel	Woody surface debris > 3.0 inches in diameter
CFRP	Collaborative Forest Restoration Program
DBH	Diameter at breast height (4.5 feet)
FFI	FEAT/FIREMON Integrated
FEAT	Fire Ecology Assessment Tool
FIREMON	Fire Effects Monitoring and Inventory System
HD	Herbaceous dead (dead non-woody species)
HL	Herbaceous live (live non-woody species)
NMFWRI	New Mexico Forest and Watershed Restoration Institute
USFS	United States Forest Service
Sapling	Height > 4.5 feet & DBH < 1 inch
Seedling	Height < 4.5 feet
SD	Standing dead (dead woody species)
SL	Standing live (live woody species)
“Sick”	Attribute given to trees/shrubs not expected to survive long term
SWERI	Southwest Ecological Restoration Institute
TPA	Trees per acre (trees/acre)
Tree	Height > 4.5 feet & DBH > 1 inch

Mean Percent Cover

Table 17: Mean percent cover data for plots across 2010 and 2015 monitoring periods. Different protocols were used these years.

Monitoring Status	Shrub cover	Graminoids	Forbs	Litter	Bare Soil	Rock	Gravel
2010 PostTreatment5yr	9%	12%	14%	24%	29%	12%	NA
2015 PostTreatment10yr	24%	30%	20%	43%	4%	7%	1%

1000-Hour Fuel Decay Class Descriptions

Table 18: Descriptions of 1000-hour fuel decay classes.

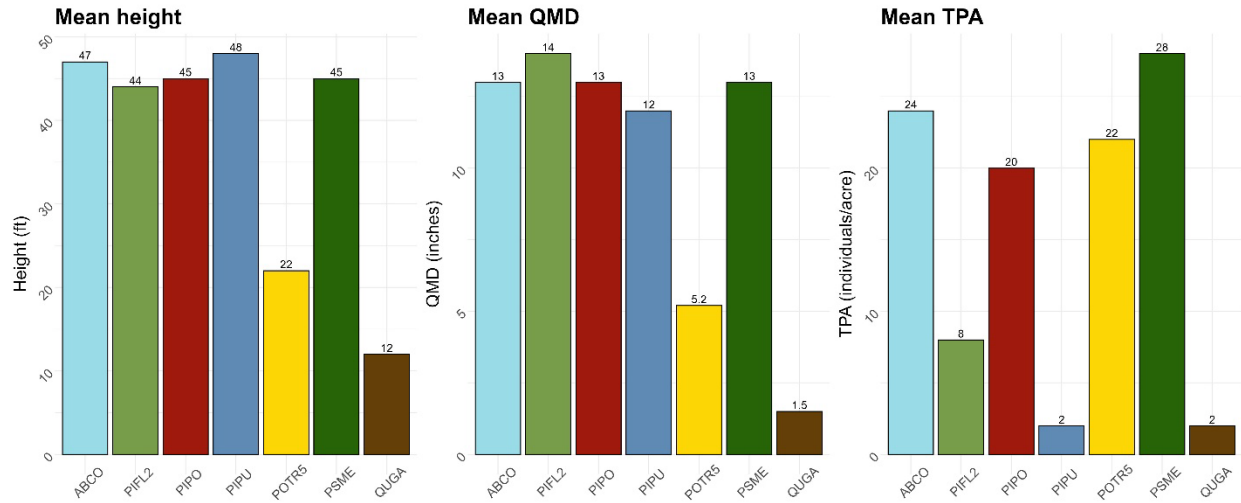
Decay Class	Description
1	All bark is intact and tight. All but the smallest twigs are attached. Old needles probably still present. Solid, freshly fallen, intact logs, hard when kicked.

2	Some bark is missing (especially on fine twigs), as are many of the smaller branches. No old needles still on branches. Hard when kicked.
3	Most of the bark is missing. Most of the branches less than 1 in. in diameter also missing, but branch stubs will not pull out. Still hard when kicked, still supports its own weight, and heartwood sound.
4	Looks like a class 3 log but the sapwood is rotten. Sounds hollow when kicked and you can probably remove wood from the outside with your boot. Pronounced sagging if suspended for even moderate distances. Branch stubs pull out.
5	Entire log is in contact with the ground. Easy to kick apart but most of the piece is above the general level of the adjacent ground. If the central axis of the piece lies in or below the duff layer then it should not be included in the CWD sampling as these pieces act more like duff than wood when burned. <i>Note: Decay class 5 pieces can be difficult to identify because they often blend into the duff and litter layers. They must still resemble a log; decomposed logs that are slightly elevation "humps" on the ground are not tallied.</i>

Tree Metrics

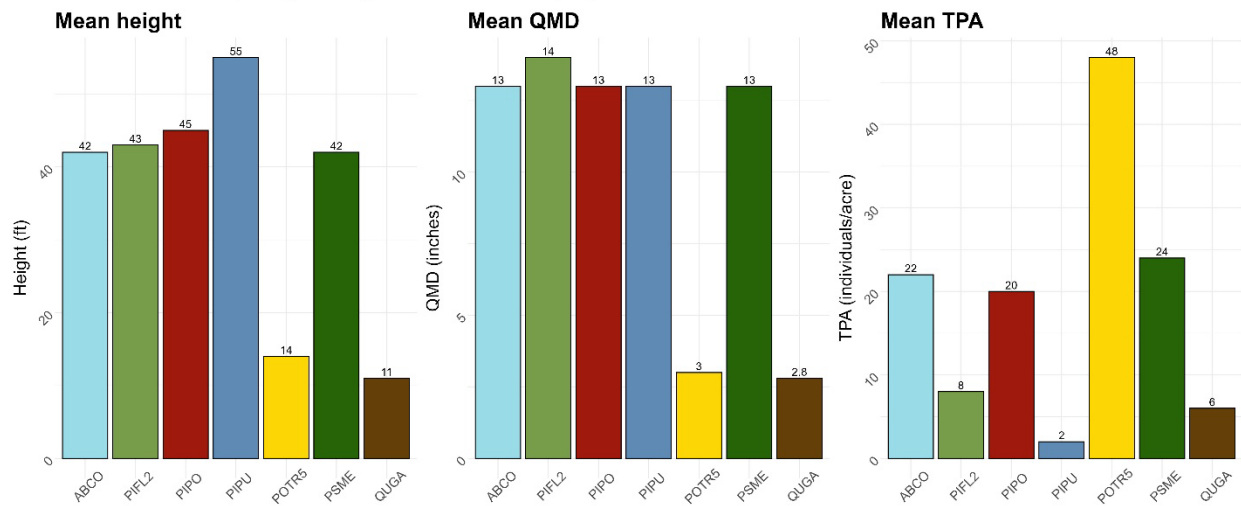
Figure 33. The following figures show tree (>1" DBH) metrics at the species level by status and measurement period for plots that received thinning treatments.

Thinning Treatment
Post-Treatment 5yrs: growing stock metrics by species



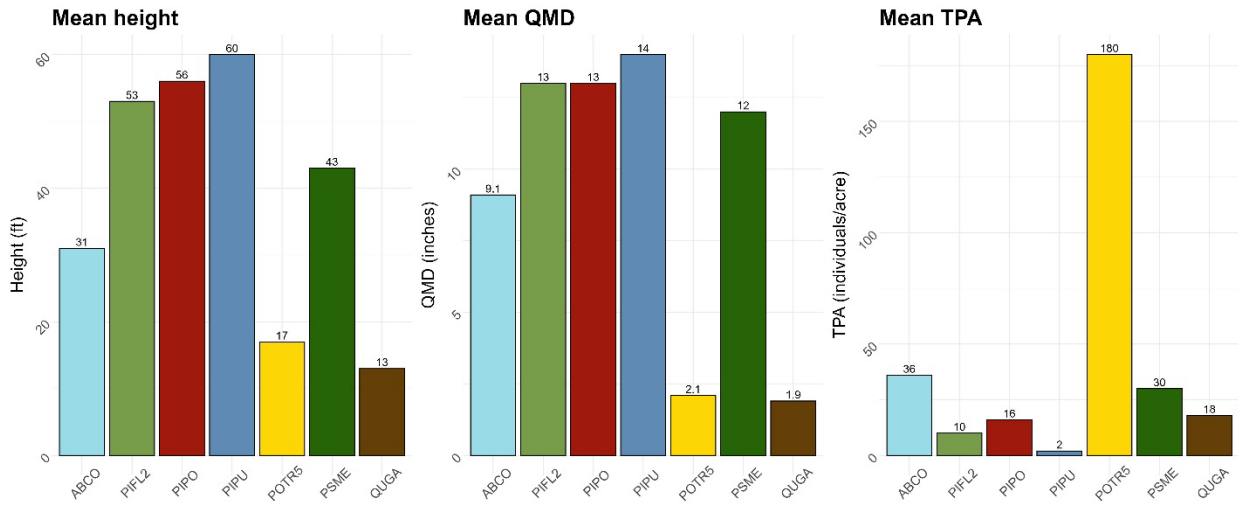
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment
Post-Treatment 10yrs: growing stock metrics by species



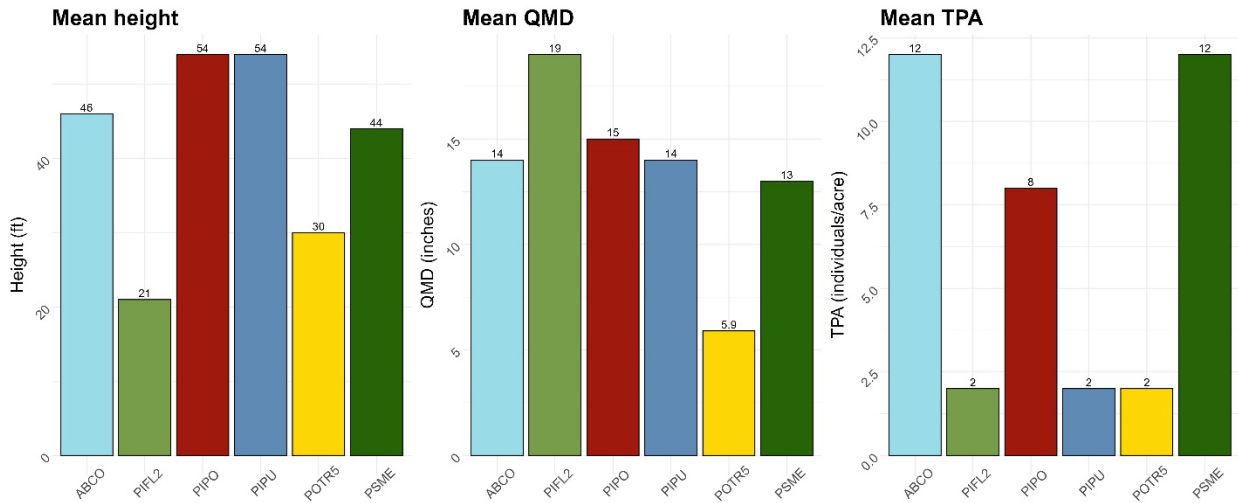
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment
Post-Treatment 15yrs: growing stock metrics by species



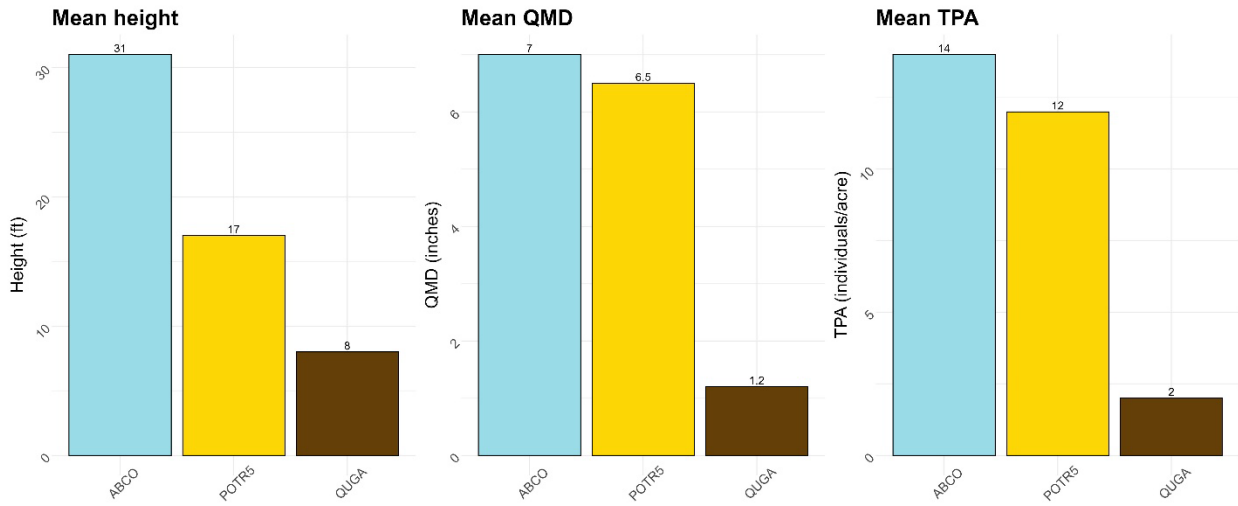
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment
Post-fire immediate: growing stock metrics by species



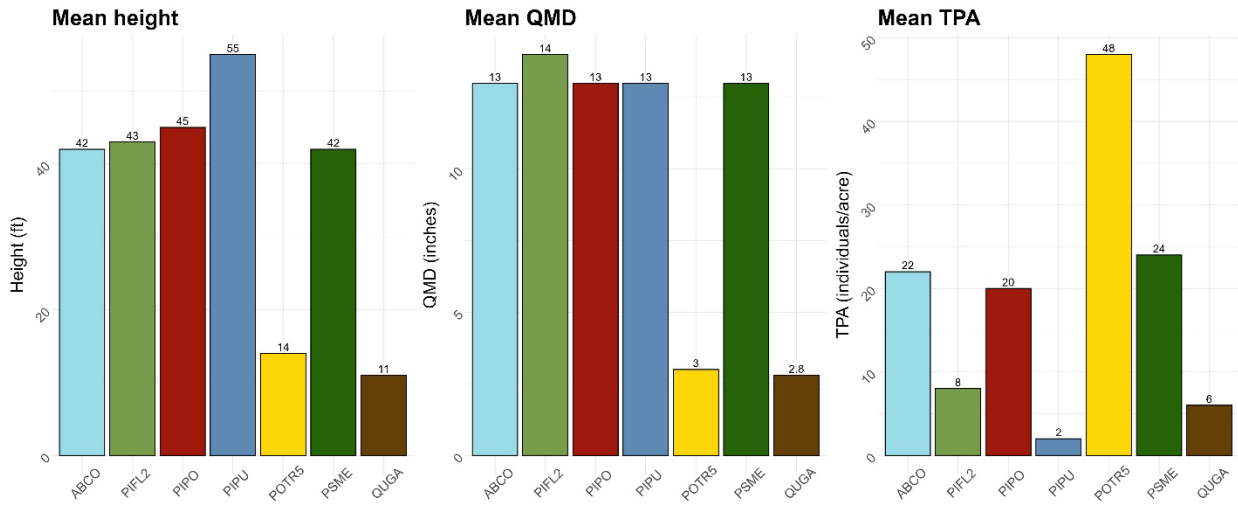
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment
Post-Treatment 5yrs: snag metrics by species



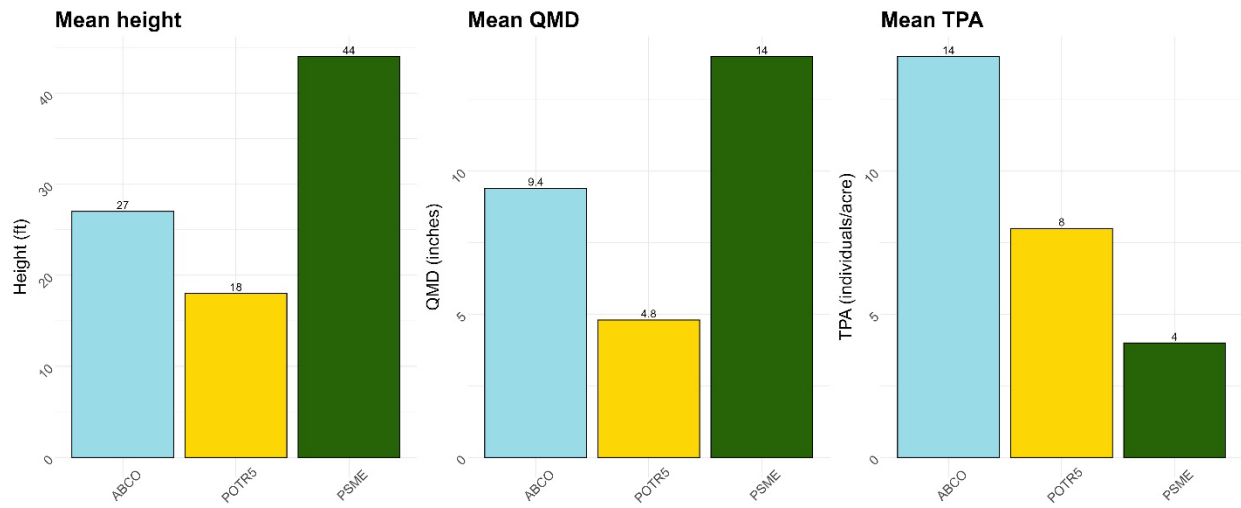
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment
Post-Treatment 10yrs: growing stock metrics by species



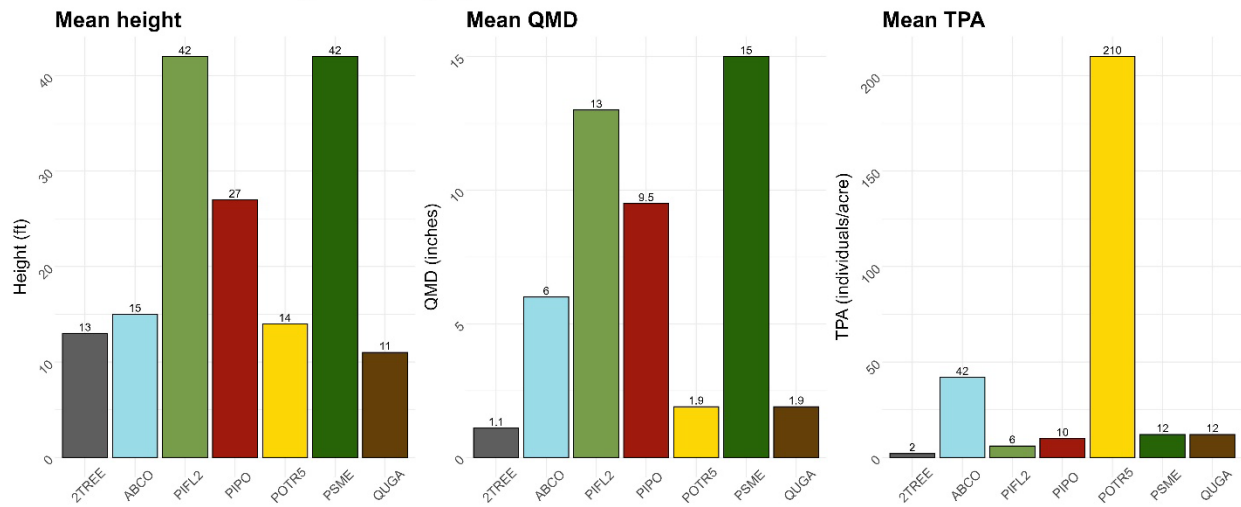
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment
Post-Treatment 10yrs: snag metrics by species



03.01 Walker Flats La Jicarita CFRP

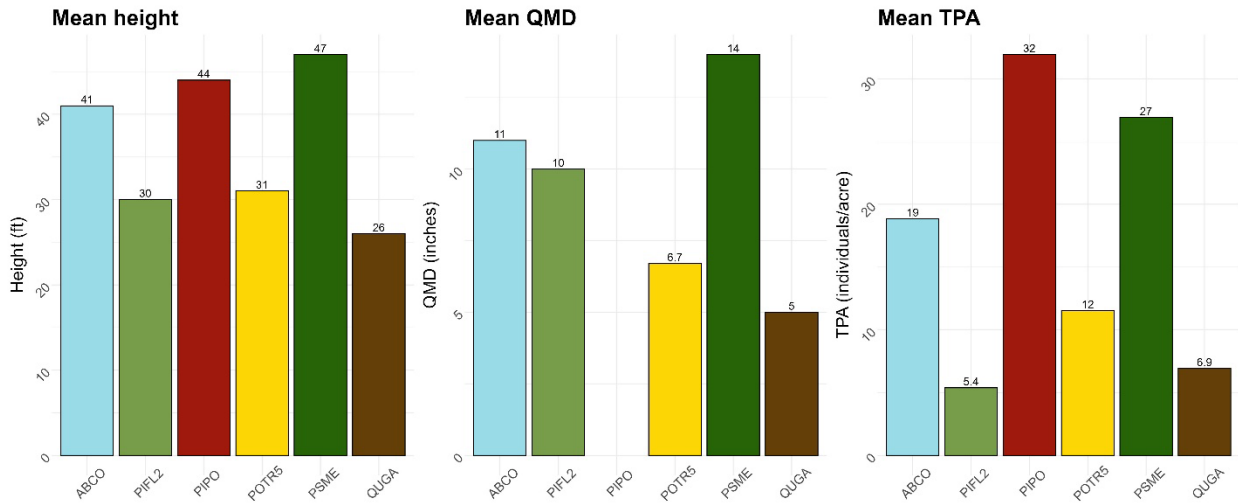
Thinning Treatment
Post-fire immediate: snag metrics by species



03.01 Walker Flats La Jicarita CFRP

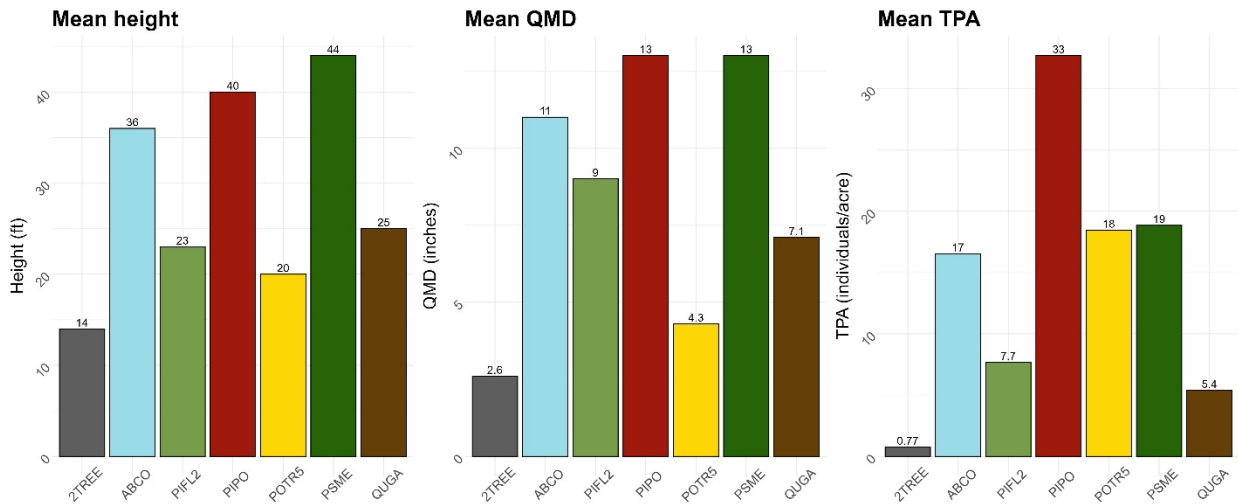
Figure 34. The following figures show tree (>1" DBH) metrics at the species level by status and measurement period for plots that received thinning and prescribed burn treatments.

Thinning & Prescribed Burn Treatment
Post-Treatment 5yrs: growing stock metrics by species



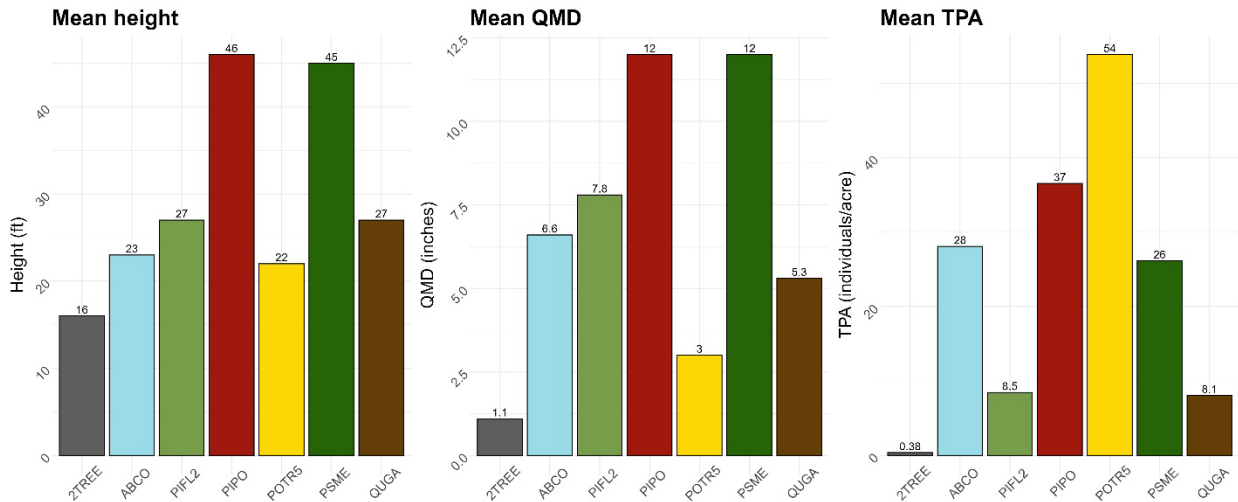
03.01 Walker Flats La Jicarita CFRP

Thinning & Prescribed Burn Treatment
Post-Treatment 10yrs: growing stock metrics by species



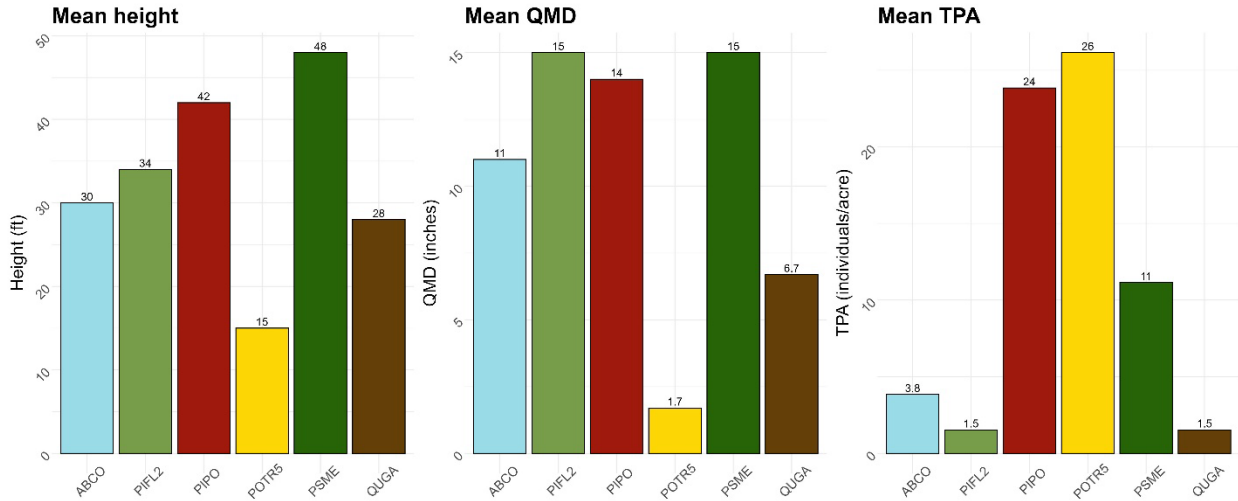
03.01 Walker Flats La Jicarita CFRP

Thinning & Prescribed Burn Treatment
 Post-Treatment 15yrs: growing stock metrics by species



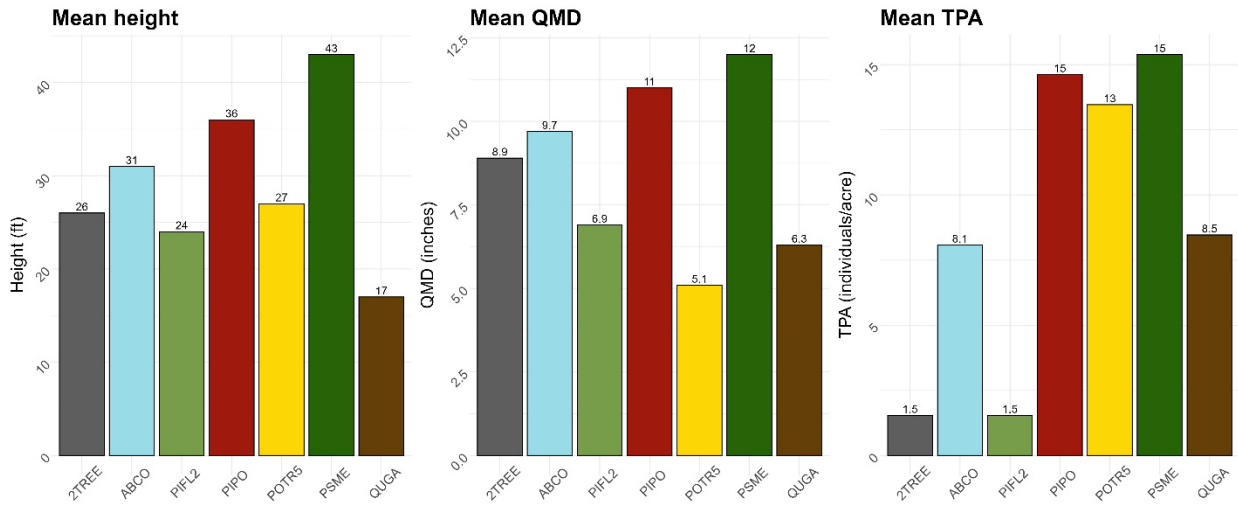
03.01 Walker Flats La Jicarita CFRP

Thinning & Prescribed Burn Treatment
 Post-fire immediate: growing stock metrics by species



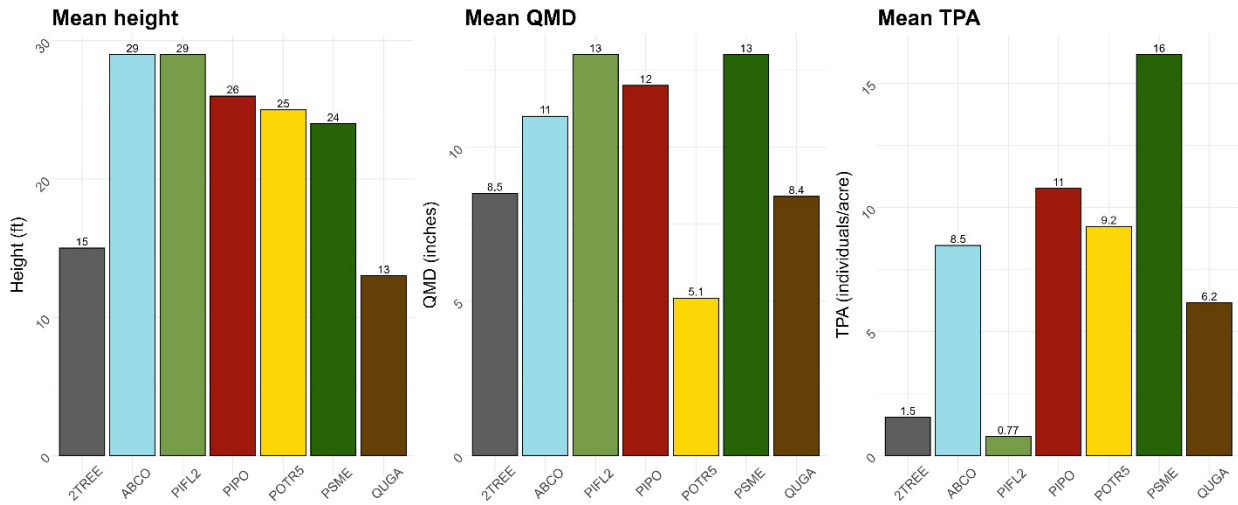
03.01 Walker Flats La Jicarita CFRP

Thinning & Prescribed Burn Treatment
Post-Treatment 5yrs: snag metrics by species



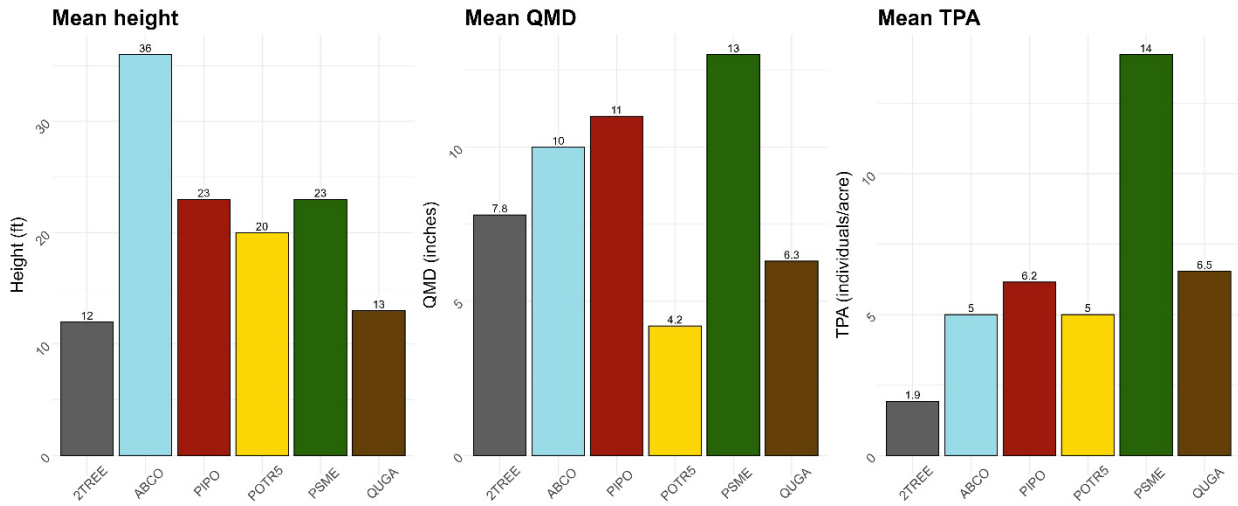
03.01 Walker Flats La Jicarita CFRP

Thinning & Prescribed Burn Treatment
Post-Treatment 10yrs: snag metrics by species



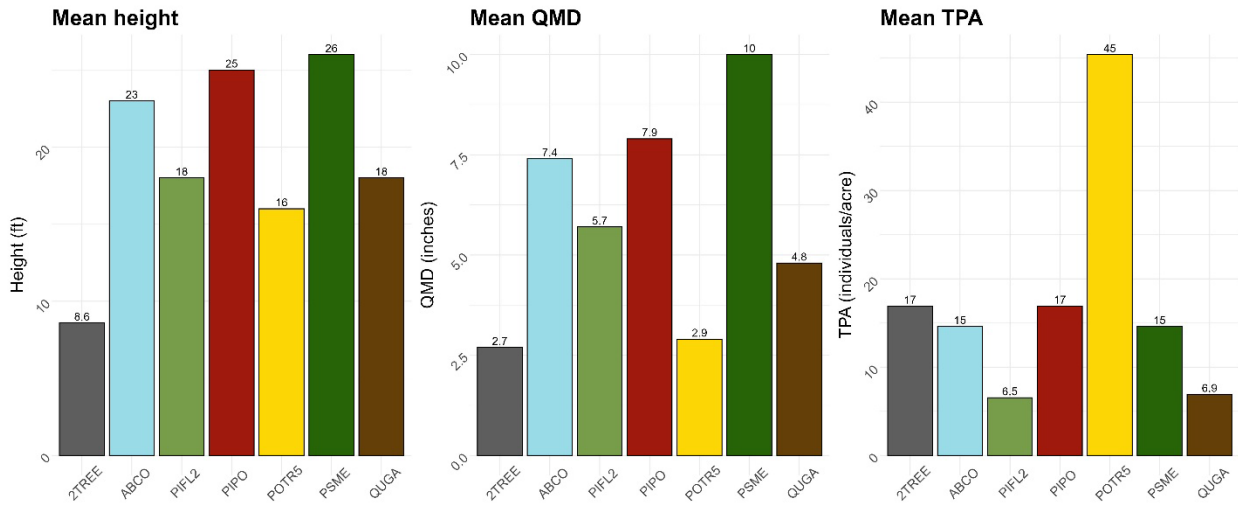
03.01 Walker Flats La Jicarita CFRP

Thinning & Prescribed Burn Treatment
Post-Treatment 15yrs: snag metrics by species



03.01 Walker Flats La Jicarita CFRP

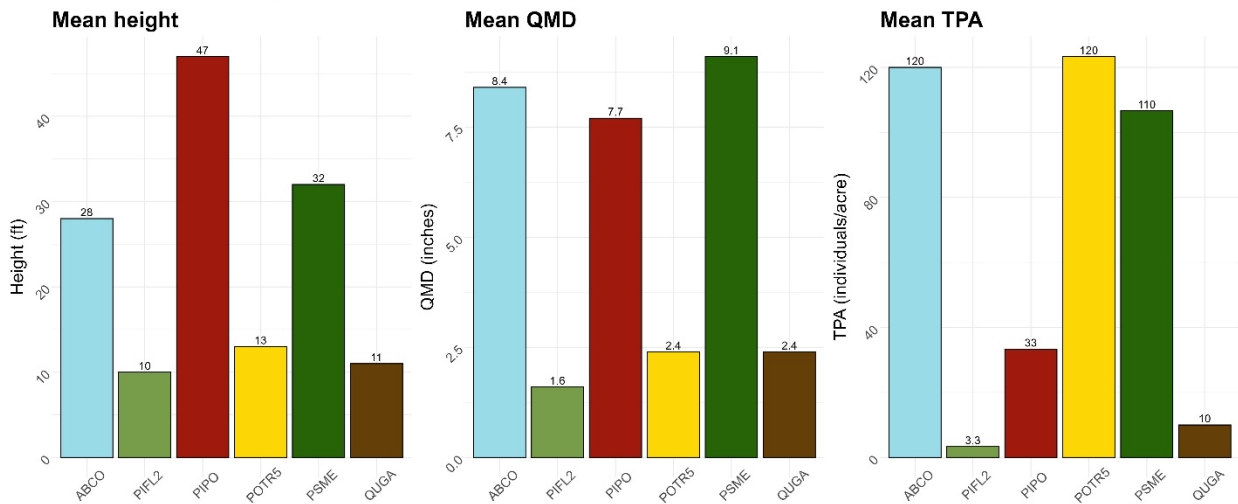
Thinning & Prescribed Burn Treatment
Post-fire immediate: snag metrics by species



03.01 Walker Flats La Jicarita CFRP

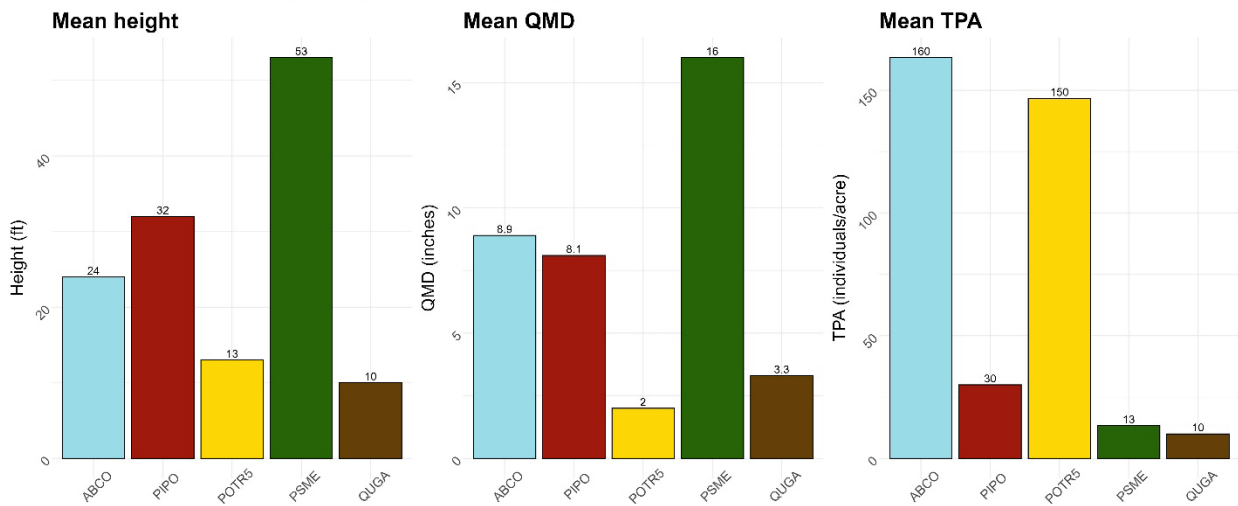
Figure 35. The following figures show tree (>1" DBH) metrics at the species level by status and measurement period for plots that received no treatments.

Untreated
Post-Treatment 5yrs: growing stock metrics by species



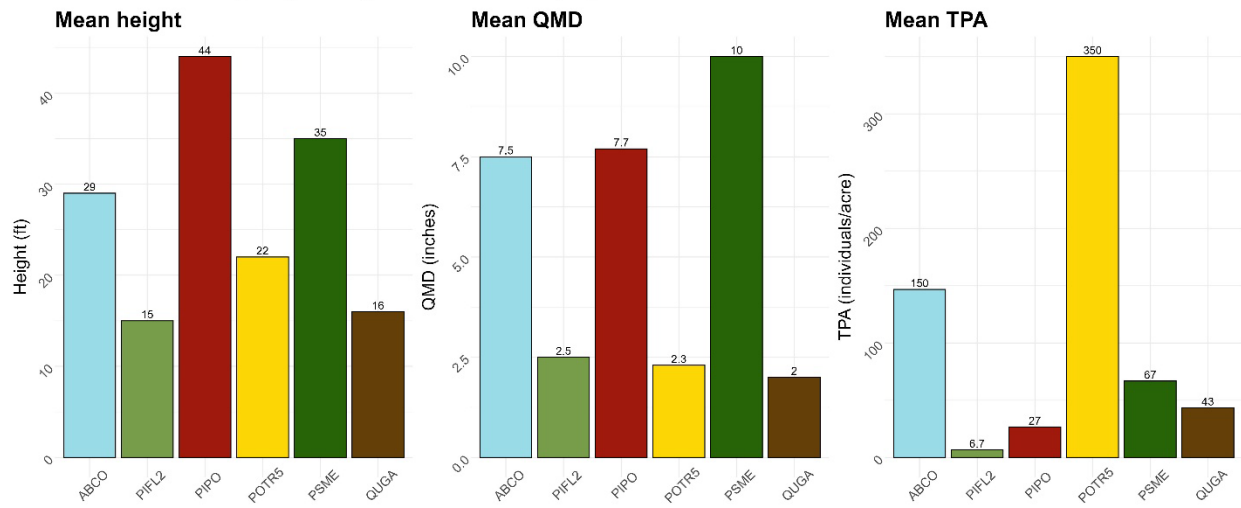
03.01 Walker Flats La Jicarita CFRP

Untreated
Post-Treatment 10yrs: growing stock metrics by species



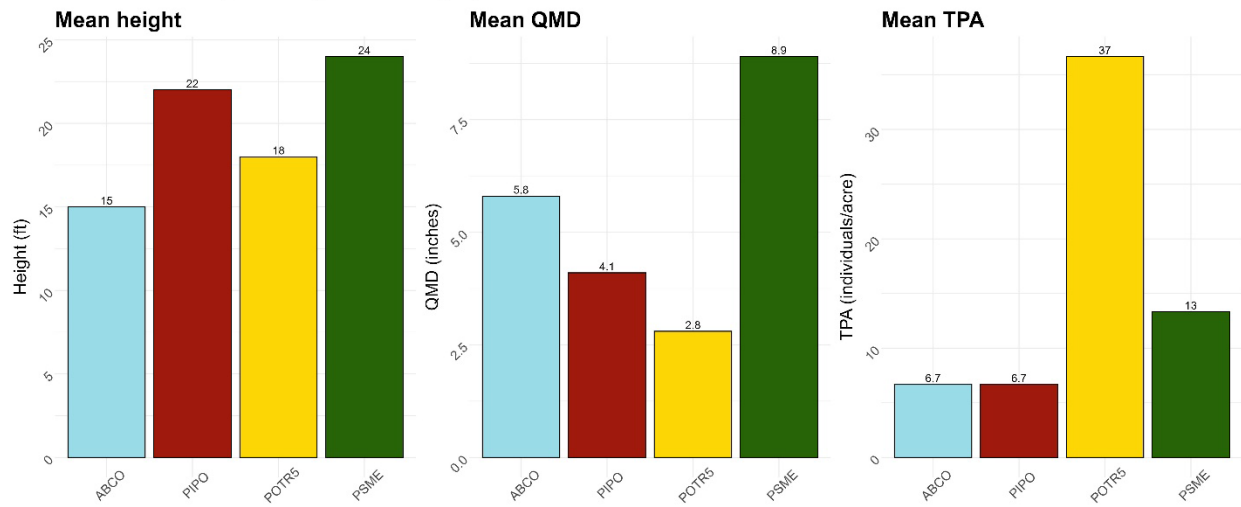
03.01 Walker Flats La Jicarita CFRP

Untreated
Post-Treatment 15yrs: growing stock metrics by species



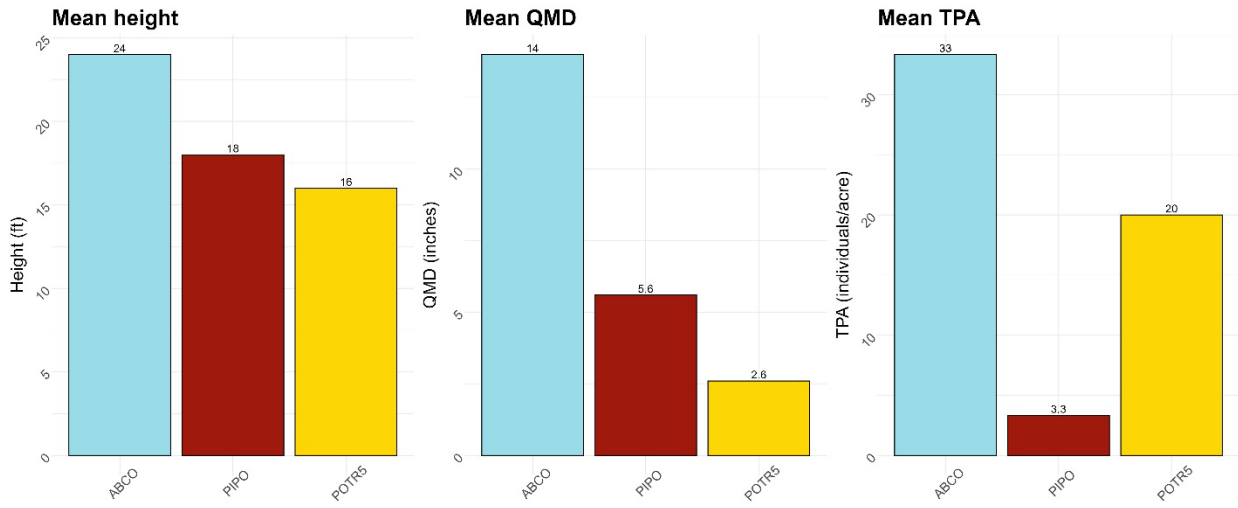
03.01 Walker Flats La Jicarita CFRP

Untreated
Post-Treatment 5yrs: snag metrics by species



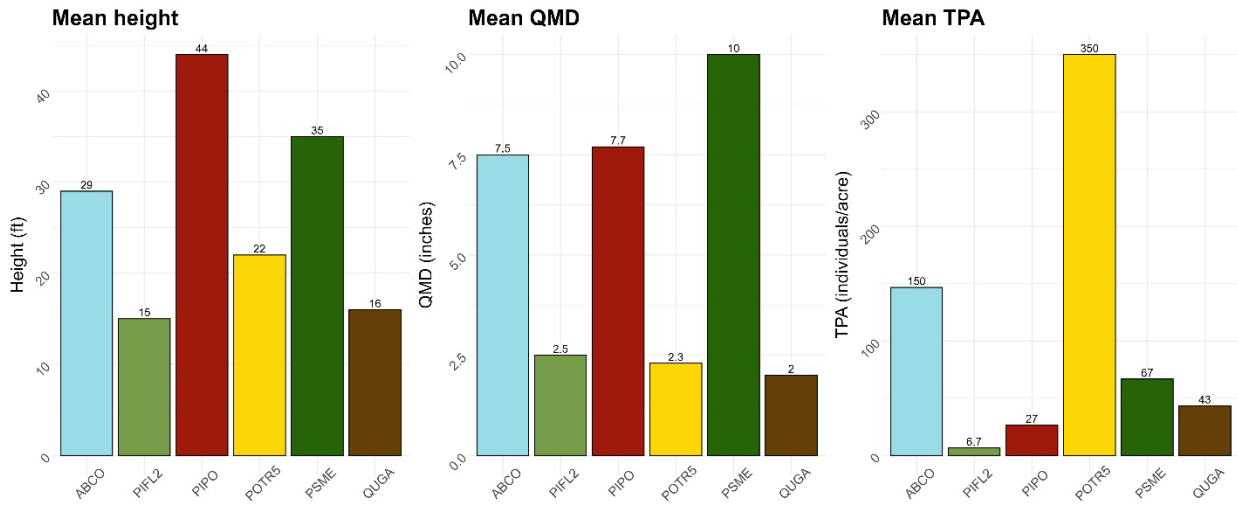
03.01 Walker Flats La Jicarita CFRP

Untreated
Post-Treatment 10yrs: snag metrics by species



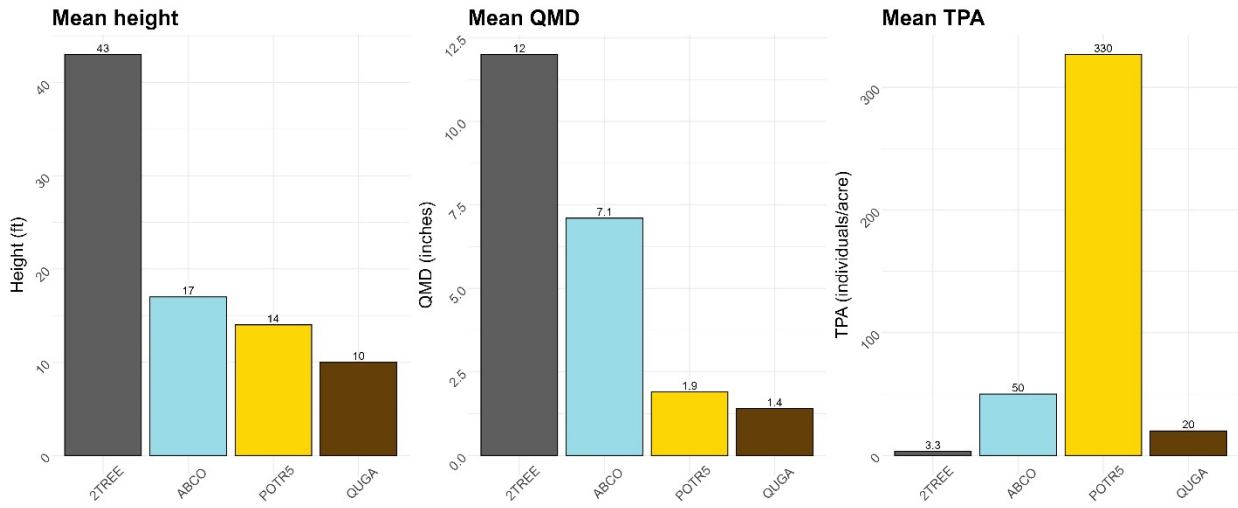
03.01 Walker Flats La Jicarita CFRP

Untreated
Post-Treatment 15yrs: growing stock metrics by species



03.01 Walker Flats La Jicarita CFRP

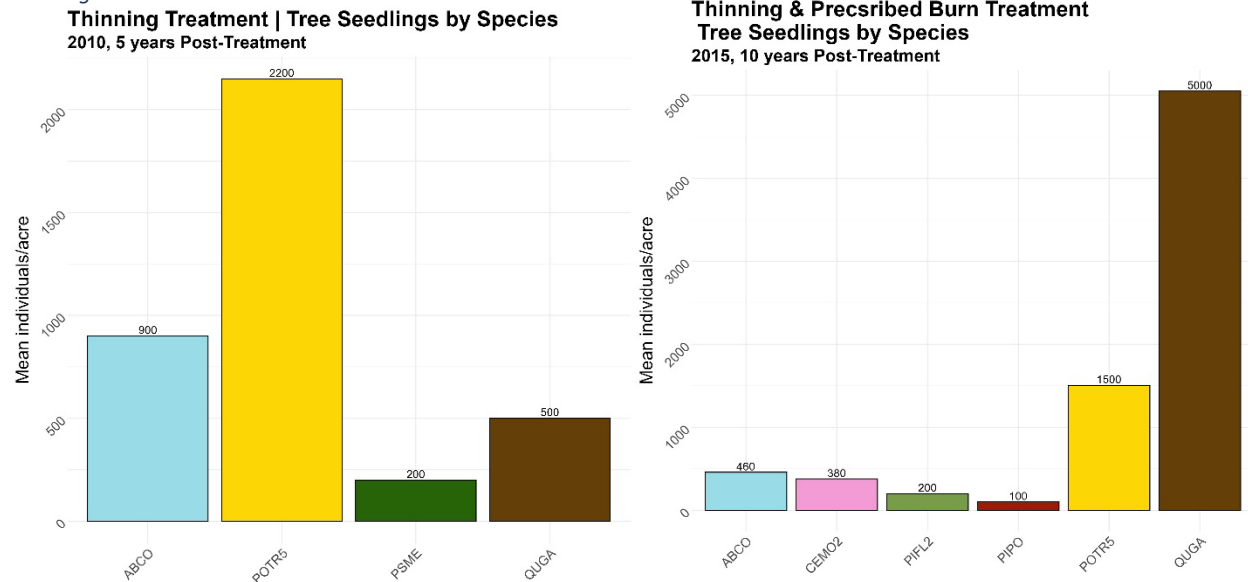
Untreated
Post-fire immediate: snag metrics by species



03.01 Walker Flats La Jicarita CFRP

Regeneration: Seedlings and Saplings

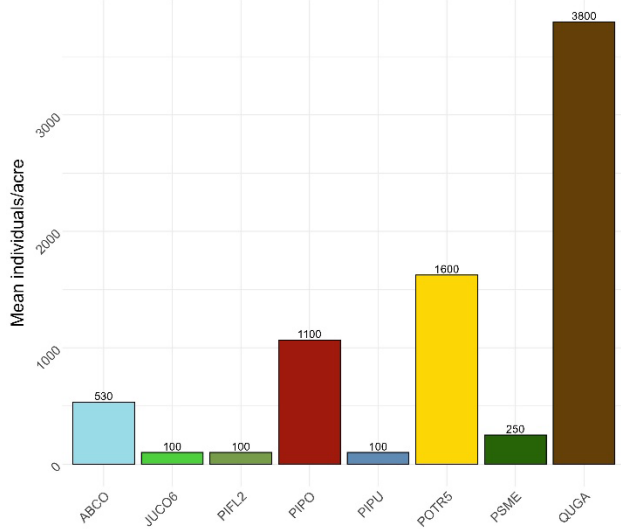
Figure 36. The following figures show seedling and sapling densities by status and measurement period for plots that received thinning treatments.



03.01 Walker Flats La Jicarita CFRP

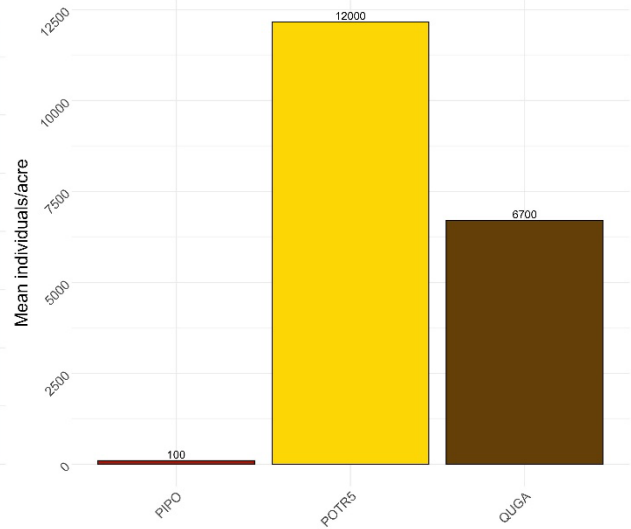
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment | Tree Seedlings by Species
2020, 15 years Post-Treatment



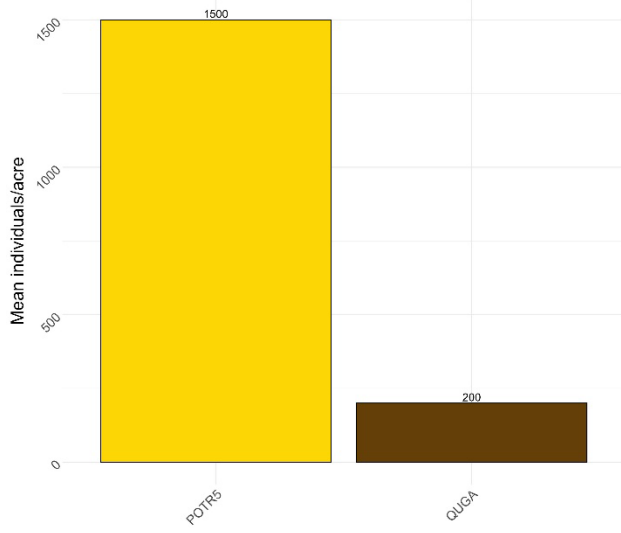
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment | Tree Seedlings by Species
2023, Immediately Post-Fire



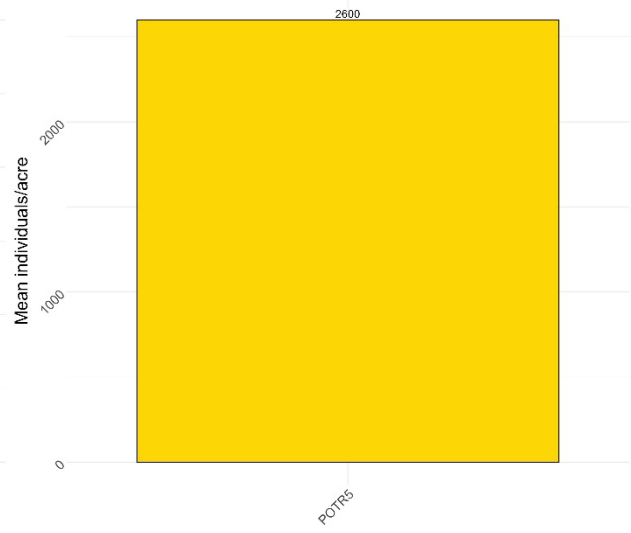
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment | Tree Saplings by Species
2020, 15 years Post-Treatment



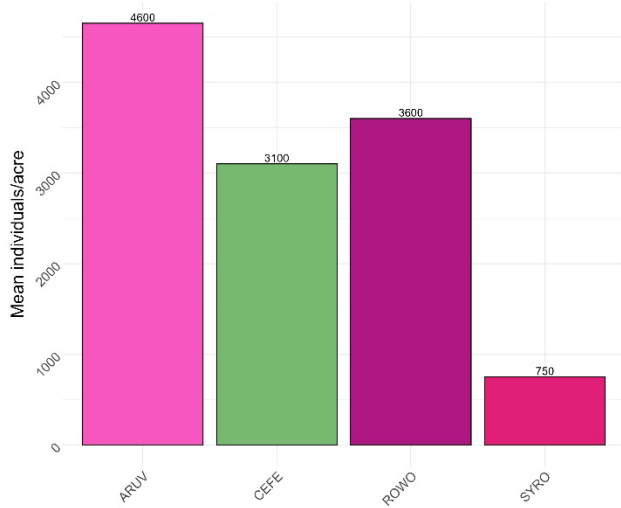
03.01 Walker Flats La Jicarita CFRP

Thinning Treatment | Tree Saplings by Species
2023, Immediately Post-Fire



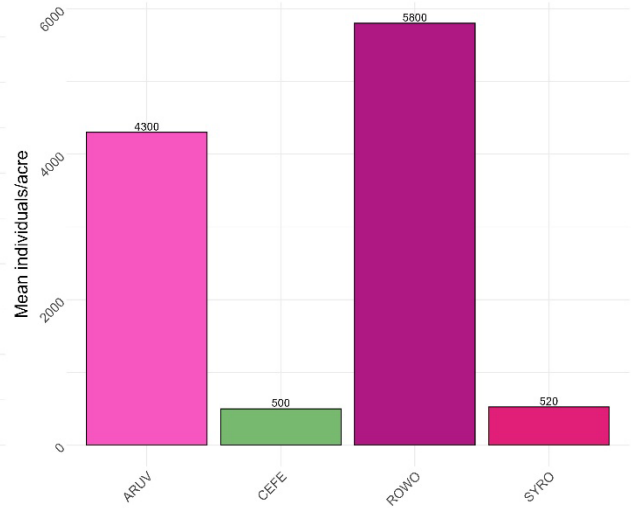
03.01 Walker Flats La Jicarita CFRP

**Thinning Treatment
Shrubs of Seedling Stature by Species**
2020, 15 years Post-Treatment



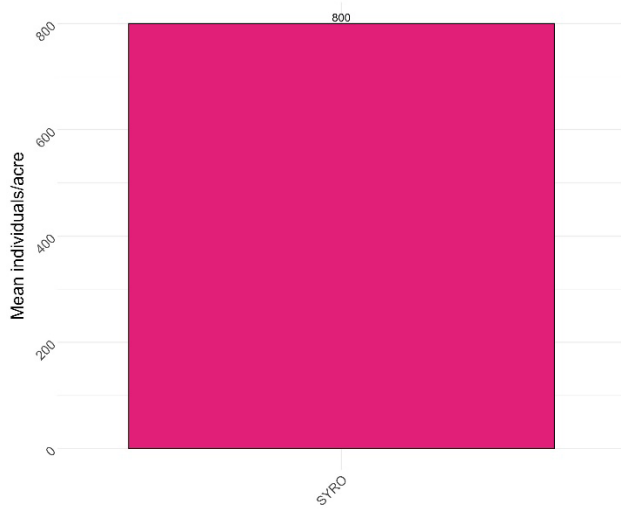
03.01 Walker Flats La Jicarita CFRP

**Thinning Treatment
Shrubs of Seedling Stature by Species**
2023, Immediately Post-Fire



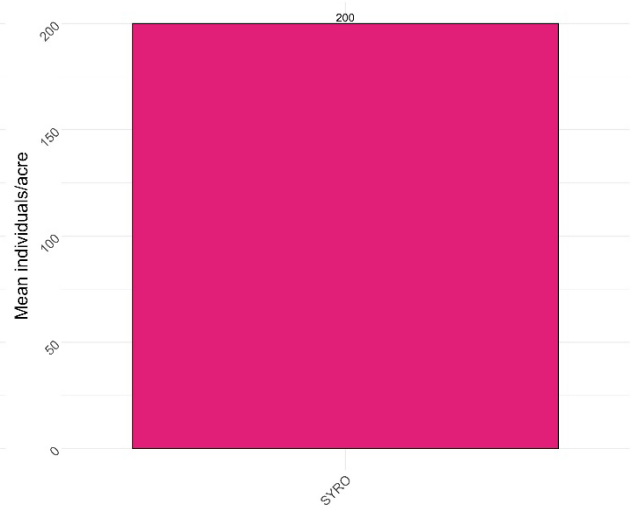
03.01 Walker Flats La Jicarita CFRP

**Thinning Treatment
Shrubs of Sapling Stature by Species**
2020, 15 years Post-Treatment



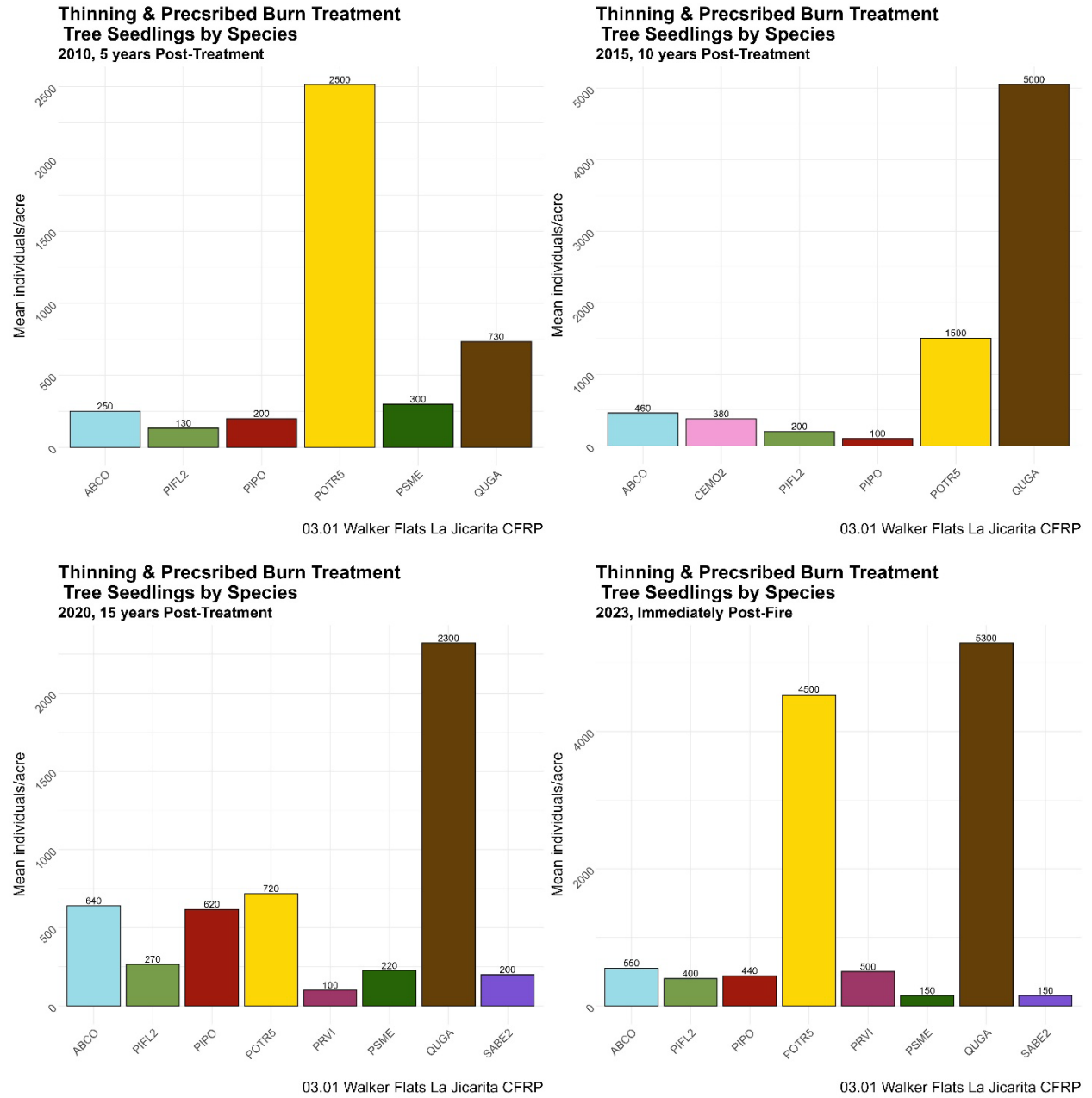
03.01 Walker Flats La Jicarita CFRP

**Thinning Treatment
Shrubs of Sapling Stature by Species**
2023, Immediately Post-Fire

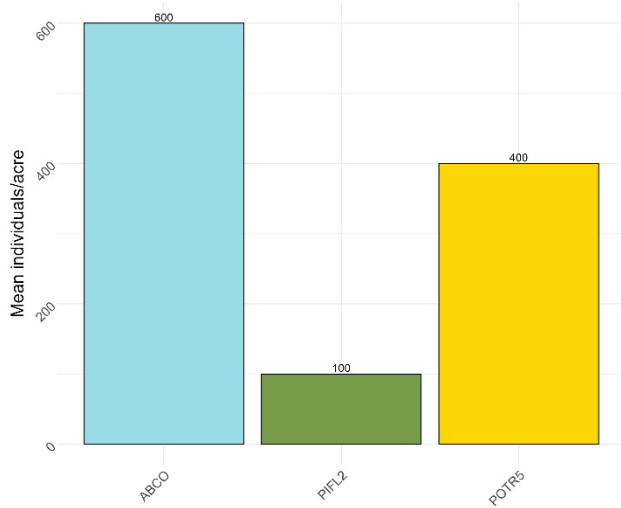


03.01 Walker Flats La Jicarita CFRP

Figure 37. The following figures show seedling and sapling densities by status and measurement period for plots that received thinning & prescribed burn treatments.

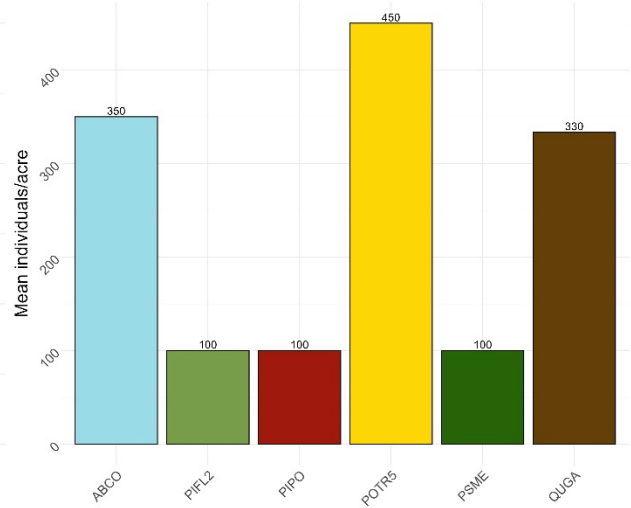


**Thinning & Prescribed Burn Treatment
Tree Saplings by Species
2015, 10 years Post-Treatment**



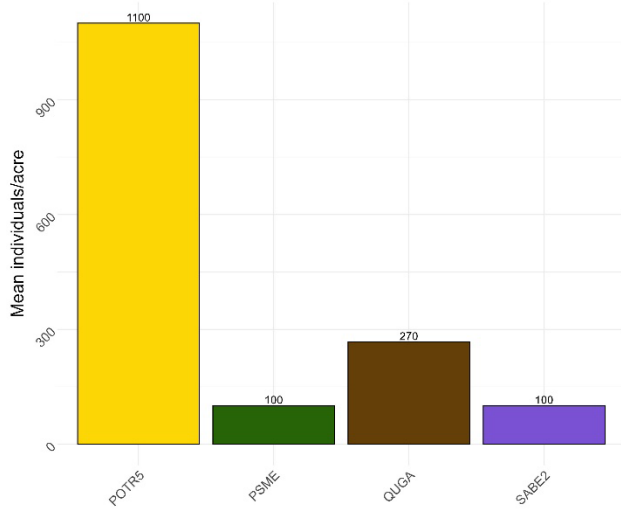
03.01 Walker Flats La Jicarita CFRP

**Thinning & Prescribed Burn Treatment
Tree Saplings by Species
2020, 15 years Post-Treatment**



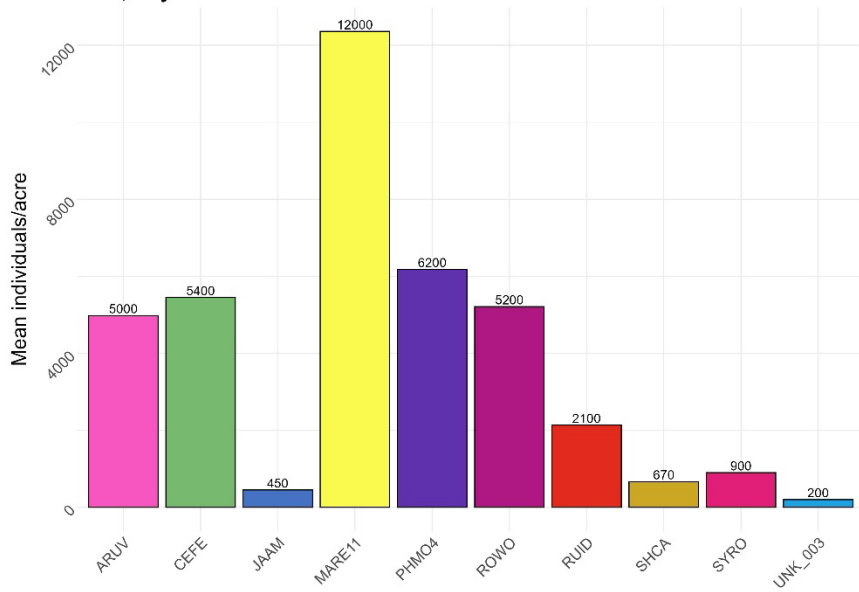
03.01 Walker Flats La Jicarita CFRP

**Thinning & Prescribed Burn Treatment
Tree Saplings by Species
2023, Immediately Post-Fire**



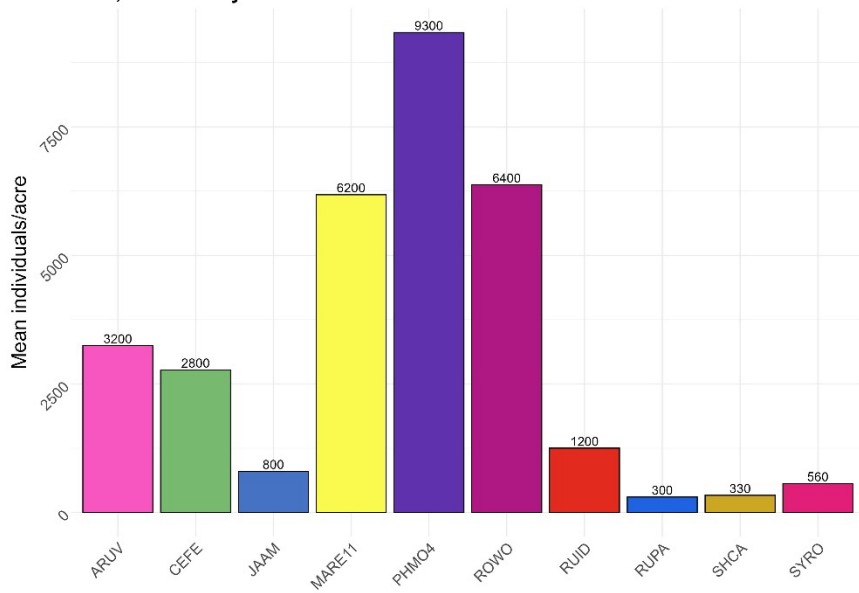
03.01 Walker Flats La Jicarita CFRP

**Thinning & Prescribed Burn Treatment
Shrubs of Seedling Stature by Species
2020, 15 years Post-Treatment**



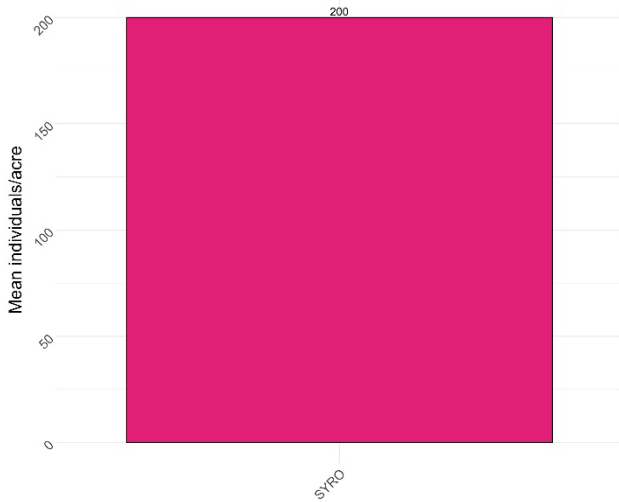
03.01 Walker Flats La Jicarita CFRP

**Thinning & Prescribed Burn Treatment
Shrubs of Seedling Stature by Species
2023, Immediately Post-Fire**



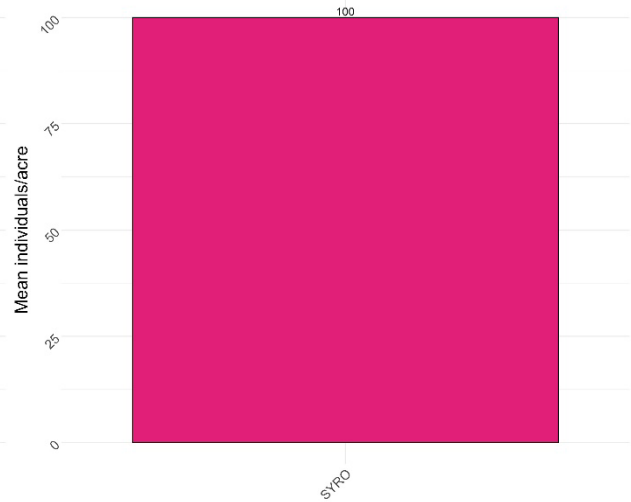
03.01 Walker Flats La Jicarita CFRP

**Thinning & Prescribed Burn Treatment
Shrubs of Sapling Stature by Species
2020, 15 years Post-Treatment**



03.01 Walker Flats La Jicarita CFRP

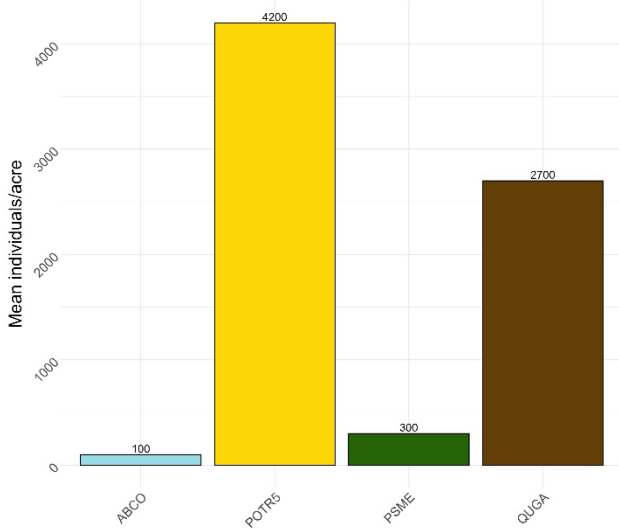
**Thinning & Prescribed Burn Treatment
Shrubs of Sapling Stature by Species
2023, Immediately Post-Fire**



03.01 Walker Flats La Jicarita CFRP

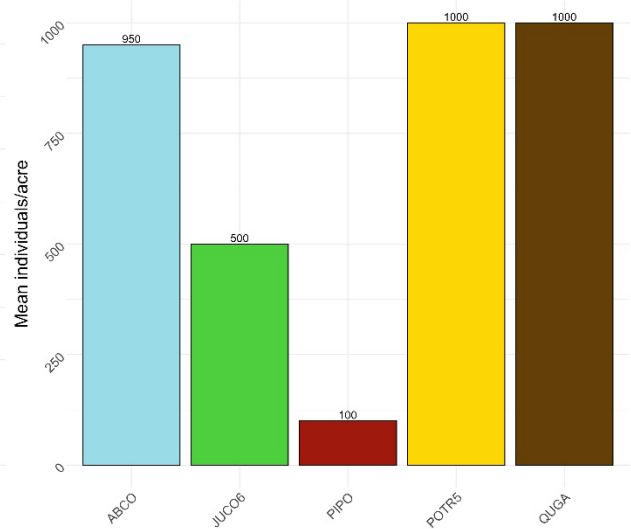
Figure 38. The following figures show seedling and sapling densities by status and measurement period for plots that received no treatments.

**Untreated | Tree Seedlings by Species
2010, 5 years Post-Treatment**



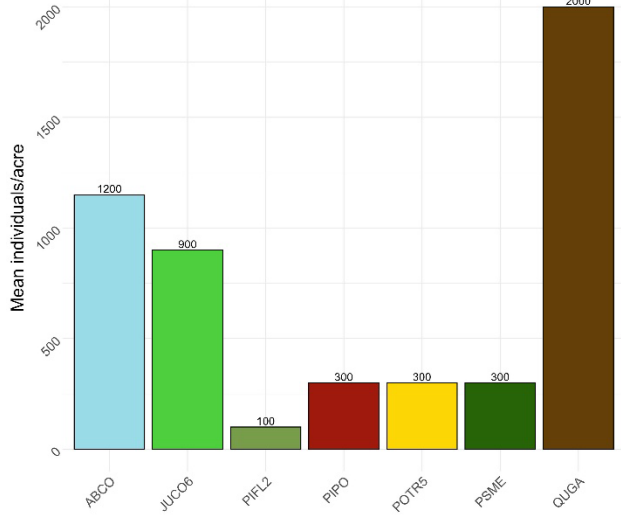
03.01 Walker Flats La Jicarita CFRP

**Untreated | Tree Seedlings by Species
2015, 10 years Post-Treatment**



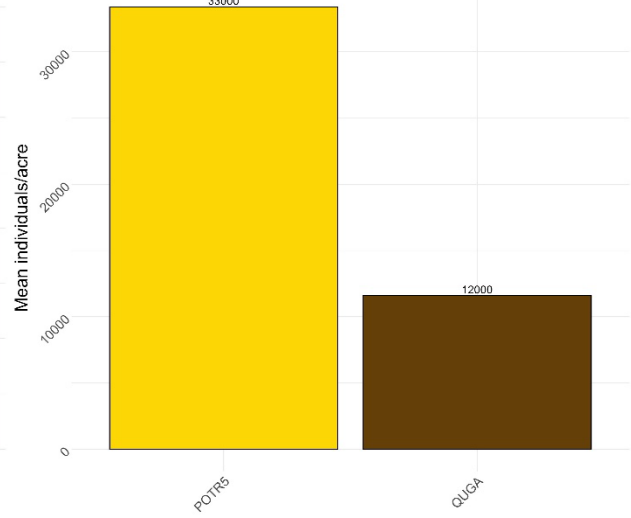
03.01 Walker Flats La Jicarita CFRP

Untreated | Tree Seedlings by Species
2020, 15 years Post-Treatment



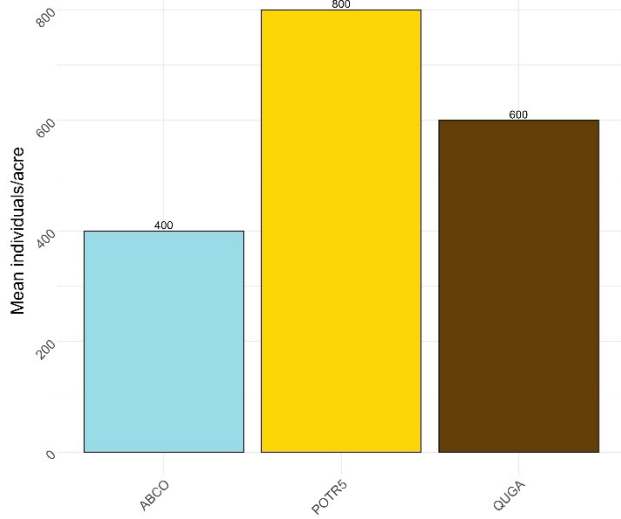
03.01 Walker Flats La Jicarita CFRP

Untreated | Tree Seedlings by Species
2023, Immediately Post-Fire



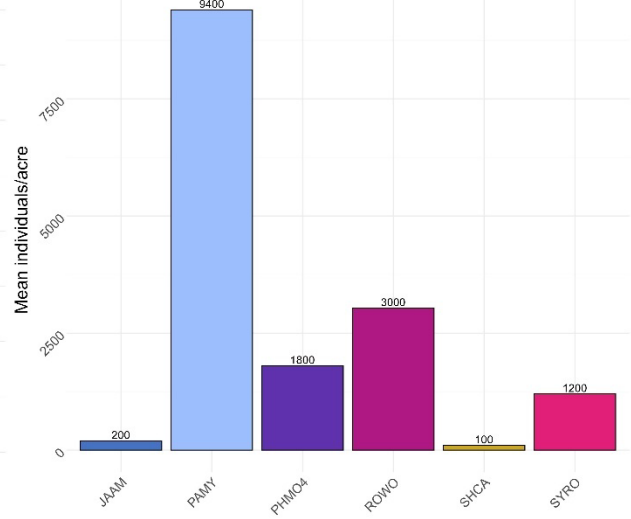
03.01 Walker Flats La Jicarita CFRP

Untreated | Tree Saplings by Species
2020, 15 years Post-Treatment



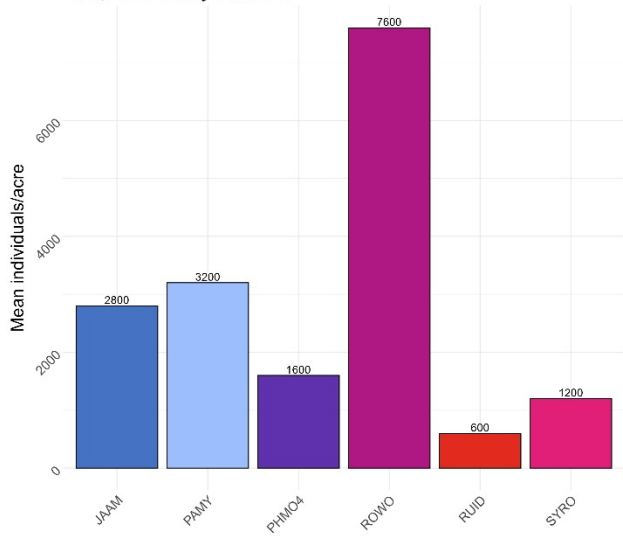
03.01 Walker Flats La Jicarita CFRP

Untreated | Shrubs of Seedling Stature by Species
2020, 15 years Post-Treatment



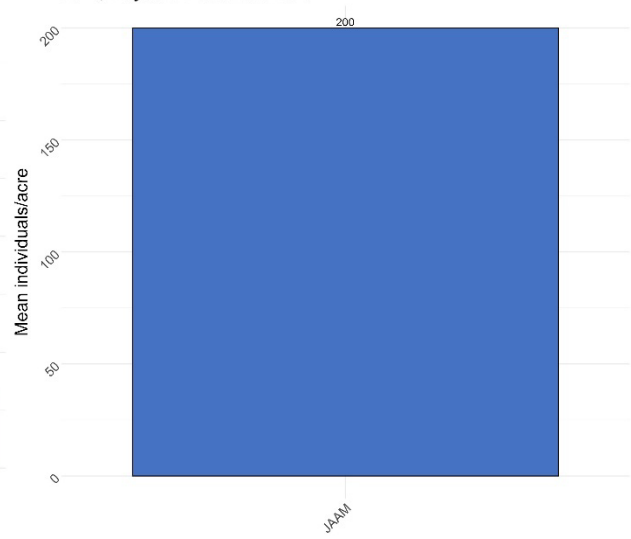
03.01 Walker Flats La Jicarita CFRP

Untreated | Shrubs of Seedling Stature by Species
2023, Immediately Post-Fire



03.01 Walker Flats La Jicarita CFRP

Untreated | Shrubs of Sapling Stature by Species
2020, 15 years Post-Treatment



03.01 Walker Flats La Jicarita CFRP

Stand Tables

Stand tables provide another way to visualize trees in an area. They represent the number of trees per acre in certain diameter classes and provide other summary values in a concise format. These are summarized across the entire project area. Stand tables for individual treatment units are available upon request.

Table 19. Stand table of species metrics for the **2010 post-treatment 5yr** monitoring period.

Stand Total	0	Saplings			Pole			Tree or Sawlog										Total by Class, Growing Stock & Dead	% by Class, Growing Stock vs Dead	
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30			32
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32		
Growing Stock (All living trees in woodland & forestland)	COUNT	0	109	30	31	34	51	62	45	45	20	6	4	2	0	0	0	0	439	0%
	TPA	0	32	8.8	9.1	10	15	18	13	13	5.9	1.8	1.2	0.59	0	0	0	0	129	69%
	BA/AC	0	0.54	0.73	1.8	3.4	8.3	14	14	18	10	3.8	3.1	1.8	0	0	0	0	80	75%
	AVE HT, HL	0	13	22	30	40	43	48	52	53	60	60	65	72	0	0	0	0	0	0%
Summary by Size Class (All living trees in woodland & forestland)	TPA		41			34			54										129	0%
	TPA %		32%			26%			42%										100%	0%
	BA/AC		1.3			13			65										80	0%
	BA/AC %		1.6%			17%			82%										100%	0%
	QMD MEAN DIA.		2.4			8.5			15										11	0%
	AVE HT, HL		18			40			54										51	0
0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dead (All dead trees in woodland & forestland)	COUNT	0	37	31	29	20	20	27	24	6	5	0	0	0	0	0	0	0	199	0%
	TPA	0	11	9.1	8.5	5.9	5.9	7.9	7.1	1.8	1.5	0	0	0	0	0	0	0	59	31%
	BA/AC	0	0.19	0.80	1.7	2.0	3.2	6.2	7.1	2.4	2.5	0	0	0	0	0	0	0	26	25%
	AVE HT, HL	0	14	22	28	27	39	43	43	47	46	0	0	0	0	0	0	0	40	0%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total for all sample trees including Growing	COUNT	0	146	61	60	54	71	89	69	51	25	6	4	2	0	0	0	0	638	0%
	TPA	0	43	18	18	16	21	26	20	15	7.4	1.8	1.2	0.59	0	0	0	0	188	100%
BA/AC	0	0.73	1.5	3.4	5.4	11	21	21	21	13	3.8	3.1	1.8	0	0	0	0	106	100%	

Woodland Species	0	Saplings			Pole			Mature Trees										by Speci	%Spe cies	
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30			32+
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32+		
QUGA Gambel oak	COUNT	0	10	4	7	2	0	0	0	0	0	0	0	0	0	0	0	0	23	
	TPA	0	2.9	1.2	2.1	0.59	0	0	0	0	0	0	0	0	0	0	0	0	6.8	5.2%
	BA/AC	0	0.06	0.11	0.40	0.19	0	0	0	0	0	0	0	0	0	0	0	0	0.76	0.94%
	AVE HT. (HL)	0	11	30	34	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Woodland Species Sub-total	COUNT	0	10	4	7	2	0	0	0	0	0	0	0	0	0	0	0	0	23	0%
	TPA	0	2.9	1.2	2.1	0.59	0	0	0	0	0	0	0	0	0	0	0	0	6.8	5.2%
	BA/AC	0	0.06	0.11	0.40	0.19	0	0	0	0	0	0	0	0	0	0	0	0	0.76	0.94%
	AVE HT. (HL)	0	11	30	34	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary by Size Class for Woodland Species	TPA		4.1			2.6			0										6.8	0%
	TPA %		61%			39%			0%										100%	
	BA/AC		0.17			0.59			0										0.76	0.0%
	BA/AC %		22%			78%			0%										100%	
	QUADRATIC MEAN DIA.		2.7			6.4			0										4.5	0%
	AVE HT. (HL)		24			34			0										32	0

Forestland Species	0	Saplings			Pole			Mature Trees										Total by Species & Coverture	%Species for all G-Stock		
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30			32	
ABCO	COUNT	0	26	3	7	10	13	16	11	7	2	2	1	0	0	0	0	0	98	0	
White fir	TPA	0	7.6	0.88	2.1	2.9	3.8	4.7	3.2	2.1	0.59	0.59	0.29	0	0	0	0	0	29	22%	
	BA/AC	0	0.12	0.08	0.41	0.99	2.1	3.7	3.3	2.8	1.0	1.2	0.78	0	0	0	0	0	17	21%	
	AVE HT. (HL)	0	13	18	26	37	45	48	56	54	59	70	62	0	0	0	0	0	0	0	0
PIPO	COUNT	0	7	0	6	9	18	21	14	17	5	3	2	0	0	0	0	0	102	0	
Ponderosa pine	TPA	0	2.1	0	1.8	2.6	5.3	6.2	4.1	5.0	1.5	0.88	0.59	0	0	0	0	0	30	23%	
	BA/AC	0	0.04	0	0.35	0.88	2.9	4.9	4.3	6.8	2.6	2.0	1.5	0	0	0	0	0	26	33%	
	AVE HT. (HL)	0	9.2	0	37	46	39	47	50	53	56	54	67	0	0	0	0	0	0	0	0
PSME	COUNT	0	18	2	5	8	14	19	18	17	11	1	1	2	0	0	0	0	116	0	
Douglas-fir	TPA	0	5.3	0.59	1.5	2.4	4.1	5.6	5.3	5.0	3.2	0.29	0.29	0.59	0	0	0	0	34	26%	
	BA/AC	0	0.07	0.04	0.27	0.82	2.3	4.4	5.6	7.1	5.7	0.60	0.82	1.8	0	0	0	0	29	37%	
	AVE HT. (HL)	0	11	28	25	34	45	48	52	54	60	56	64	72	0	0	0	0	0	0	0
PIFL2	COUNT	0	3	4	1	0	2	3	2	4	1	0	0	0	0	0	0	0	20	0	
Limber pine	TPA	0	0.88	1.2	0.29	0	0.59	0.88	0.59	1.2	0.29	0	0	0	0	0	0	0	5.9	4.6%	
	BA/AC	0	0.01	0.08	0.06	0	0.33	0.64	0.55	1.6	0.53	0	0	0	0	0	0	0	3.8	4.8%	
	AVE HT. (HL)	0	9.8	15	23	0	38	44	45	46	48	0	0	0	0	0	0	0	0	0	0
PIPU	COUNT	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1.0	0	
Colorado blue spruce	TPA	0	0	0	0	0	0	0.29	0	0	0	0	0	0	0	0	0	0	0.29	0.23%	
	BA/AC	0	0	0	0	0	0	0.24	0	0	0	0	0	0	0	0	0	0	0.24	0.30%	
	AVE HT. (HL)	0	0	0	0	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0
POTR5	COUNT	0	45	17	5	5	4	2	0	0	1	0	0	0	0	0	0	0	79	0	
Aspen	TPA	0	13	5.0	1.5	1.5	1.2	0.59	0	0	0.29	0	0	0	0	0	0	0	23	18%	
	BA/AC	0	0.24	0.41	0.28	0.53	0.57	0.46	0	0	0.55	0	0	0	0	0	0	0	3.0	3.8%	
	AVE HT. (HL)	0	16	21	28	43	51	52	0	0	81	0	0	0	0	0	0	0	0	0	0
Forestland Species Sub-total	COUNT	0	99	26	24	32	51	62	45	45	20	6	4	2	0	0	0	0	416	0%	
	TPA	0	29	7.6	7.1	9.4	15	18	13	13	5.9	1.8	1.2	0.59	0	0	0	0	122	95%	
	BA/AC	0	0.49	0.62	1.4	3.2	8.3	14	14	18	10	3.8	3.1	1.8	0	0	0	0	79	99%	
	AVE HT. (HL)	0	14	20	29	40	43	48	52	53	60	60	65	72	0	0	0	0	0	0	0
Summary by Size Class for Forestland Species	TPA		37			31						54							122	0%	
	TPA %		30%			26%						44%							100%		
	BA/AC		1.1			13						65							79	0%	
	BA/AC %		1.4%			16%						82%							100%		
	QUADRATIC MEAN DIA.		2.3			8.7						15							11	0%	
	AVE HT. (HL)		17			41						54							51	0	

Table 20. Stand table of species metrics for the 2015 post-treatment 10yr monitoring period.

Stand Total	0	Saplings			Pole			Tree or Sawlog										Total by Class, Growing Stock & Dead	% by Class, Growing Stock vs Dead	
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30			32
Growing Stock (All living trees in woodland & forestland)	COUNT	0	153	29	25	31	40	54	38	37	20	6	5	1	0	0	0	0	439	0%
	TPA	0	45	8.5	7.4	9.1	12	16	11	11	5.9	1.8	1.5	0.29	0	0	0	0	129	72%
	BA/AC	0	0.66	0.66	1.4	3.0	6.4	12	12	15	10	3.7	3.9	0.86	0	0	0	0	70	69%
	AVE HT, HL	0	12	18	27	33	39	44	50	52	57	58	65	55	0	0	0	0	0	0%
Summary by Size Class (All living trees in woodland & forestland)	TPA		54			28							47					129	0%	
	TPA %		41%			22%							37%					100%	0%	
	BA/AC		1.3			11							58					70	0%	
	BA/AC %		1.9%			16%							83%					100%	0%	
	QMD MEAN DIA.		2.1			8.4							15					9.9	0.0	
	AVE HT, HL		15			36							52					49	0	
0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Dead (All dead trees in woodland & forestland)	COUNT	0	17	23	25	14	20	30	16	14	9	2	1	1	0	0	0	0	172	0%
	TPA	0	5.0	6.8	7.4	4.1	5.9	8.8	4.7	4.1	2.6	0.59	0.29	0.29	0	0	0	0	51	28%
	BA/AC	0	0.06	0.58	1.4	1.4	3.2	6.8	4.7	5.6	4.5	1.3	0.74	0.91	0	0	0	0	31	31%
	AVE HT, HL	0	14	16	23	30	25	26	27	27	40	36	13	13	0	0	0	0	28	0%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Total for all sample trees including Growing	COUNT	0	170	52	50	45	60	84	54	51	29	8	6	2	0	0	0	0	611	0%
	TPA	0	50	15	15	13	18	25	16	15	8.5	2.4	1.8	0.59	0	0	0	0	180	100%
	BA/AC	0	0.73	1.2	2.8	4.4	9.6	19	16	21	14	5.0	4.6	1.8	0	0	0	0	101	100%

Woodland Species	0	Saplings			Pole			Mature Trees										Total by Species	%Species for all G-Stock	
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30			32+
QUGA	COUNT	0	3	3	6	7	1	0	0	0	0	0	0	0	0	0	0	0	20	
Gambel oak	TPA	0	0.88	0.88	1.8	2.1	0.29	0	0	0	0	0	0	0	0	0	0	0	5.9	4.6%
	BA/AC	0	0.02	0.07	0.35	0.65	0.14	0	0	0	0	0	0	0	0	0	0	0	1.2	1.8%
	AVE HT. (HL)	0.00	12	10	28	23	28	0	0	0	0	0	0	0	0	0	0	0	0	0
Woodland Species Sub-total	COUNT	0	3	3	6	7	1	0	0	0	0	0	0	0	0	0	0	0	20	0%
	TPA	0	0.88	0.88	1.8	2.1	0.29	0	0	0	0	0	0	0	0	0	0	0	5.9	4.6%
	BA/AC	0	0.02	0.07	0.35	0.65	0.14	0	0	0	0	0	0	0	0	0	0	0	1.2	1.8%
	AVE HT. (HL)	0	12	10	28	23	28	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary by Size Class for Woodland Species	TPA		1.8			4.1							0						5.9	0%
	TPA %		30%			70%							0%						100%	
	BA/AC		0.09			1.1							0						1.2	0%
	BA/AC %		7%			93%							0%						100%	
	QUADRATIC MEAN DIA.		3.1			7.1							0						6.2	0%
	AVE HT. (HL)		11			25													24	0

Forestland Species	0	Saplings			Pole			Mature Trees										Total by Species & Coverture	%Species for all G-Stock	
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32		
ABCO	COUNT	0	39	2	6	10	10	16	6	8	6	2	2	0	0	0	0	0	107	0
White fir	TPA	0	11	0.59	1.8	2.9	2.9	4.7	1.8	2.4	1.8	0.59	0.59	0	0	0	0	0	31	24%
	BA/AC	0	0.21	0.05	0.33	1.01	1.6	3.7	1.9	3.2	3.05	1.2	1.5	0	0	0	0	0	18	26%
	AVE HT. (HL)	0	11	20	20	35	41	45	55	53	59	55	58	0	0	0	0	0	0	0
PIPO	COUNT	0	11	5	3	7	17	19	16	18	4	2	3	0	0	0	0	0	105	0
Ponderosa pine	TPA	0	3.2	1.5	0.88	2.1	5.0	5.6	4.7	5.3	1.2	0.59	0.88	0	0	0	0	0	31	24%
	BA/AC	0	0.04	0.11	0.18	0.66	2.7	4.3	4.9	7.3	2.1	1.3	2.3	0	0	0	0	0	26	37%
	AVE HT. (HL)	0	5.9	11	31	33	37	44	50	51	62	59	69	0	0	0	0	0	0	0
PSME	COUNT	0	4	1	1	6	7	14	13	8	8	2	0	1	0	0	0	0	65	0
Douglas-fir	TPA	0	1.2	0.29	0.29	1.8	2.1	4.1	3.8	2.4	2.4	0.59	0	0.29	0	0	0	0	19	15%
	BA/AC	0	0.04	0.02	0.05	0.61	1.10	3.2	4.1	3.3	3.9	1.2	0	0.86	0	0	0	0	18	26%
	AVE HT. (HL)	0	13	13	25	33	39	45	50	55	55	61	0	55	0	0	0	0	0	0
PIFL2	COUNT	0	7	4	2	0	1	4	2	3	2	0	0	0	0	0	0	0	25	0
Limber pine	TPA	0	2.1	1.2	0.59	0	0.29	1.2	0.59	0.88	0.59	0	0	0	0	0	0	0	7.4	5.7%
	BA/AC	0	0.02	0.09	0.11	0	0.17	0.87	0.60	1.2	1.0	0	0	0	0	0	0	0	4.0	5.8%
	AVE HT. (HL)	0	9.2	12	24	0	28	39	42	48	49	0	0	0	0	0	0	0	0	0
PIPU	COUNT	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1.0	0
Colorado blue spruce	TPA	0	0	0	0	0	0	0.29	0	0	0	0	0	0	0	0	0	0	0.29	0.23%
	BA/AC	0	0	0	0	0	0	0.26	0	0	0	0	0	0	0	0	0	0	0.26	0.38%
	AVE HT. (HL)	0	0	0	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0
POTR5	COUNT	0	89	14	7	1	4	0	1	0	0	0	0	0	0	0	0	0	116	0
Aspen	TPA	0	26	4.1	2.1	0.29	1.2	0	0.29	0	0	0	0	0	0	0	0	0	34	26%
	BA/AC	0	0.33	0.33	0.39	0.12	0.62	0	0.28	0	0	0	0	0	0	0	0	0	2.1	3.0%
	AVE HT. (HL)	0	13	23	31	60	48	0	51	0	0	0	0	0	0	0	0	0	0	0
Forestland Species Sub-total	COUNT	0	150	26	19	24	39	54	38	37	20	6	5	1	0	0	0	0	419	0%
	TPA	0	44	7.6	5.6	7.1	11	16	11	11	5.9	1.8	1.5	0.29	0	0	0	0	123	95%
	BA/AC	0	0.64	0.59	1.1	2.4	6.2	12	12	15	10	3.7	3.9	0.86	0	0	0	0	68	98%
	AVE HT. (HL)	0	12	19	26	35	39	44	50	52	57	58	65	55	0	0	0	0	0	0
Summary by Size Class for Forestland Species	TPA		52		24							47							123	0%
	TPA %		42%				20%					38%							100%	
	BA/AC		1.2				9.7					58							68	0%
	BA/AC %		1.8%			14%						84%							100%	
	QUADRATIC MEAN DIA.		2.1				8.6					15							10	0%
AVE HT. (HL)		15				37					52							49	0	

Table 21. Stand table of forestland species metrics for the 2020 post-treatment 15yr measurement period

Stand Total	0	Saplings			Pole			Tree or Sawlog										Total by Class, Growing Stock & Dead	% by Class, Growing Stock vs Dead		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30			32	
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32			
Growing Stock	COUNT	12	495	50	33	25	32	46	36	36	22	10	0	3	0	1	0	0	801	0%	
(All living trees in woodland & forestland)	TPA	3.5	146	15	9.7	7.4	9.4	13.5	10.6	10.6	6.5	2.9	0	0.9	0	0.3	0	0	236	86%	
	BA/AC	0.01	2.1	1.2	1.9	2.5	5.2	10.8	11.2	14.8	11.3	6.3	0	2.6	0	1.2	0	0	71	77%	
	AVE HT, HL	16	18	26	34	43	51	55	56	65	66	72	0	65	0	80	0	0	0	0	0%
Summary by Size Class (All living trees in woodland & forestland)	TPA		164			26							45						236	0%	
	TPA %		70%			11%							19%						100%	0%	
	BA/AC		3.3			9.6							58						71	0%	
	BA/AC %		4.6%			14%							82%						100%	0%	
	QMD MEAN DIA.		1.9			8.2							15						7.4	0%	
	AVE HT, HL		21			46						63							59	0	
0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Dead (All dead trees in woodland & forestland)	COUNT	1	25	14	15	12	17	23	11	8	4	1	0	1	0	0	0	0	132	0%	
	TPA	0.3	7.4	4.1	4.4	3.5	5.0	6.8	3.2	2.4	1.2	0.3	0	0.3	0	0	0	0	39	14%	
	BA/AC	0	0.2	0.4	0.8	1.3	2.8	5.2	3.3	3.3	2.0	0.6	0	0.9	0	0	0	0	21	23%	
	AVE HT, HL	13	13	18	32	35	21	27	24	25	43	17	0	18	0	0	0	0	27	0%	
0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Total for all sample trees including Growing	COUNT	13	520	64	48	37	49	69	47	44	26	11	0	4	0	1	0	0	933	0%	
	TPA	4	153	19	14	11	14	20	14	13	7.6	3.2	0	1.2	0	0.3	0	0	274	100%	
	BA/AC	0.01	2.3	1.6	2.7	3.8	7.9	16	15	18	13	7.0	0	3.5	0	1.2	0	0	92	100%	

Woodland Species	0	Saplings			Pole			Mature Trees											by	%Spe
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32+	Speci	cies
QUGA	COUNT	0	24	5	12	2	0	0	0	0	0	0	0	0	0	0	0	0	43	
Gambel oak	TPA	0	7.1	1.5	3.5	0.59	0	0	0	0	0	0	0	0	0	0	0	0	13	5.4%
	BA/AC	0	0.12	0.10	0.66	0.20	0	0	0	0	0	0	0	0	0	0	0	0	1.1	1.5%
	AVE HT. (HL)	0	14	21	33	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Woodland Species Sub-total	COUNT	0	24	5	12	2	0	0	0	0	0	0	0	0	0	0	0	0	43	0%
	TPA	0	7.1	1.5	3.5	0.59	0	0	0	0	0	0	0	0	0	0	0	0	13	5.4%
	BA/AC	0	0.12	0.10	0.66	0.20	0	0	0	0	0	0	0	0	0	0	0	0	1.1	1.5%
	AVE HT. (HL)	0	14	21	33	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary by Size Class for Woodland Species	TPA		8.5			4.1							0						13	0%
	TPA %		67%			33%							0%						100%	
	BA/AC		0.22			0.86							0						1.1	0%
	BA/AC %		20%			80%							0%						100%	
	QUADRATIC MEAN DIA.		2.2			6.2							0						4.0	0%
	AVE HT. (HL)		17			34							0						31	0

Forestland Species	0	Saplings			Pole			Mature Trees											Total by Species & Covertype	%Species for all G-Stock
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32		
ABCO	COUNT	0	95	2	2	8	9	12	5	2	4	2	0	1	0	0	0	0	142	0
White fir	TPA	0	28	0.59	0.59	2.4	2.6	3.5	1.5	0.59	1.2	0.59	0	0.29	0	0	0	0	42	18%
	BA/AC	0	0.41	0.04	0.12	0.81	1.5	2.9	1.6	0.84	2.0	1.2	0	0.85	0	0	0	0	12	17%
	AVE HT. (HL)	0	14	18	32	45	54	55	62	64	64	76	0	61	0	0	0	0	0	0
PIPO	COUNT	0	19	4	7	9	12	16	16	18	6	4	0	1	0	1	0	0	113	
Ponderosa pine	TPA	0	5.6	1.2	2.1	2.6	3.5	4.7	4.7	5.3	1.8	1.2	0	0.29	0	0.29	0	0	33	14%
	BA/AC	0	0.11	0.08	0.39	0.93	2.0	3.6	4.9	7.5	3.1	2.6	0	0.86	0	1.2	0	0	27	38%
	AVE HT. (HL)	0	10	18	34	42	51	53	56	66	65	72	0	75	0	80	0	0	0	0
PSME	COUNT	0	28	8	2	5	8	14	10	14	10	3	0	1	0	0	0	0	103	
Douglas-fir	TPA	0	8.2	2.4	0.59	1.5	2.4	4.1	2.9	4.1	2.9	0.88	0	0.29	0	0	0	0	30	13%
	BA/AC	0	0.13	0.19	0.12	0.49	1.2	3.3	3.2	5.7	5.2	2.0	0	0.92	0	0	0	0	22	31%
	AVE HT. (HL)	0	14	25	34	41	51	57	51	65	68	71	0	60	0	0	0	0	0	0
PIFL2	COUNT	1	14	6	2	0	0	4	2	1	2	1	0	0	0	0	0	0	33	
Lumber pine	TPA	0.29	4.1	1.8	0.59	0	0	1.2	0.59	0.29	0.59	0.29	0	0	0	0	0	0	9.7	4.1%
	BA/AC	0	0.08	0.18	0.14	0	0	0.96	0.64	0.38	1.1	0.60	0	0	0	0	0	0	4.0	5.7%
	AVE HT. (HL)	13	13	23	28	0	0	61	59	74	60	60	0	0	0	0	0	0	0	0
PIPU	COUNT	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1.0	
Colorado blue spruce	TPA	0	0	0	0	0	0	0	0.29	0	0	0	0	0	0	0	0	0	0.29	0.12%
	BA/AC	0	0	0	0	0	0	0	0.30	0	0	0	0	0	0	0	0	0	0.30	0.42%
	AVE HT. (HL)	0	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0
POTR5	COUNT	11	315	25	8	1	3	0	2	1	0	0	0	0	0	0	0	0	366	
Aspen	TPA	3.2	93	7.4	2.4	0.29	0.88	0	0.59	0.29	0	0	0	0	0	0	0	0	108	46%
	BA/AC	0.01	1.3	0.56	0.47	0.13	0.49	0	0.57	0.43	0	0	0	0	0	0	0	0	3.9	5.5%
	AVE HT. (HL)	17	21	30	40	57	50	0	47	57	0	0	0	0	0	0	0	0	0	0
Forestland Species Sub-total	COUNT	12	471	45	21	23	32	46	36	36	22	10	0	3	0	1	0	0	758	0%
	TPA	3.5	139	13	6.2	6.8	9.4	14	11	11	6.5	2.9	0	0.88	0	0.29	0	0	222.9	95%
	BA/AC	0.01	2.0	1.1	1.2	2.4	5.2	11	11	15	11	6.3	0	2.6	0	1.17	0	0	70	98%
	AVE HT. (HL)	16	18	26	35	44	51	55	56	65	66	72	0	65	0	80	0	0	0	0
Summary by Size Class for Forestland Species	TPA		155			22						45							223	0%
	TPA %		70%			10%						20%							100%	
	BA/AC		3.1			8.8						58							70	0%
	BA/AC %		4.4%			12%						83%							100%	
	QUADRATIC MEAN DIA.		1.9			8.5						15							7.6	0%
	AVE HT. (HL)		21			47						63							59	0

Table 22. Stand table of forestland species metrics for the 2023 post-wildfire immediate measurement period

Stand Total	0	Saplings			Pole			Tree or Sawlog											Total by Class, Growing Stock & Dead	% by Class, Growing Stock vs Dead
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32		
Growing Stock (All living trees in woodland & forestland)	COUNT	3	94	3	6	6	6	24	24	20	12	12	2	0	0	0	0	0	212	0%
	TPA	0.88	28	0.88	1.8	1.8	1.8	7.1	7.1	5.9	3.5	3.5	0.59	0	0	0	0	0	62	25%
	BA/AC	0	0.42	0.06	0.38	0.63	0.97	5.6	7.4	8.5	6.2	7.4	1.6	0	0	0	0	0	39	60%
	AVE HT, HL	11	15	26	28	31	41	44	47	51	57	55	71	0	0	0	0	0	0	0%
Summary by Size Class (All living trees in woodland & forestland)	TPA		29			5.3							28					62	0%	
	TPA %		47%			8.5%							44%					100%	0%	
	BA/AC		0.48			2.0							37					39	0%	
	BA/AC %		1.2%			5.1%							94%					100%	0%	
	QMD MEAN DIA.		1.7			8.3							16					11	0%	
	AVE HT, HL		16			35							52					51	0	
0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Dead (All dead trees in woodland & forestland)	COUNT	9	458	37	29	17	29	17	15	7	5	0	1	1	0	0	0	0	625	0%
	TPA	2.6	135	11	8.5	5.0	8.5	5.0	4.4	2.1	1.5	0	0.29	0.29	0	0	0	0	184	75%
	BA/AC	0.01	1.9	0.92	1.5	1.7	4.7	3.9	4.8	2.7	2.5	0	0.76	0.96	0	0	0	0	26	40%
	AVE HT, HL	9	13	19	20	29	38	35	48	49	59	0	73	58	0	0	0	0	40	0%
0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Total for all sample trees including Growing	COUNT	12	552	40	35	23	35	41	39	27	17	12	3	1	0	0	0	0	837	0%
	TPA	3.5	162	12	10	6.8	10	12	11	7.9	5.0	3.5	0.88	0.29	0	0	0	0	246	100%
	BA/AC	0.01	2.3	0.98	1.8	2.3	5.7	9.5	12	11	8.7	7.4	2.3	0.96	0	0	0	0	66	100%

Woodland Species	0	Saplings			Pole			Mature Trees											by Spec	%Species	
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32+			
QUGA Gambel oak	COUNT	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	
	TPA	0	0	0	0.88	0.29	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	1.9%
	BA/AC	0	0	0	0.19	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0.29	0.74%
	AVE HT. (HL)	0	0	0	28	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Woodland Species Sub-total	COUNT	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	0%
	TPA	0	0	0	0.88	0.29	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	1.9%
	BA/AC	0	0	0	0.19	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0.29	0.74%
	AVE HT. (HL)	0	0	0	28	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary by Size Class for Woodland Species	TPA		0			1.2							0						1.2	0%	
	TPA %		0%			100%							0%						100%		
	BA/AC		0			0.29							0						0.29	0%	
	BA/AC %		0%			100%							0%						100%		
	QUADRATIC MEAN DIA.		0			6.7							0						6.7	0%	
	AVE HT. (HL)		0			29							0						29	0	

Forestland Species	0	Saplings			Pole			Mature Trees										Total by Species & Covertypes	%Species for all G-Stock		
Diameter Class	0	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32			
ABCO	COUNT	0	4	0	1	1	2	1	3	0	1	3	0	0	0	0	0	0	16	0	
White fir	TPA	0	1.2	0	0.29	0.29	0.59	0.29	0.88	0	0.29	0.88	0	0	0	0	0	0	4.7	7.5%	
	BA/AC	0	0.02	0	0.07	0.09	0.28	0.24	0.88	0	0.48	1.8	0	0	0	0	0	0	3.8	9.7%	
	AVE HT. (HL)	0	10	0	25	37	35	44	47	0	55	58	0	0	0	0	0	0	0	0	0
PIPO	COUNT	0	10	0	0	2	3	15	11	14	4	5	2	0	0	0	0	0	66	0	
Ponderosa pine	TPA	0	2.9	0	0	0.59	0.88	4.4	3.2	4.1	1.2	1.5	0.59	0	0	0	0	0	19	31%	
	BA/AC	0	0.05	0	0	0.23	0.52	3.5	3.5	5.9	2.0	3.1	1.6	0	0	0	0	0	20	52%	
	AVE HT. (HL)	0	7.4	0	0	27	46	42	50	50	61	56	71	0	0	0	0	0	0	0	0%
PSME	COUNT	0	1	0	1	2	1	8	9	5	5	3	0	0	0	0	0	0	35	0	
Douglas-fir	TPA	0	0.29	0	0.29	0.59	0.29	2.4	2.6	1.5	1.5	0.88	0	0	0	0	0	0	10	17%	
	BA/AC	0	0.01	0	0.07	0.22	0.17	1.9	2.8	2.2	2.6	2.0	0	0	0	0	0	0	12	30%	
	AVE HT. (HL)	0	12	0	28	33	38	46	44	55	60	61	0	0	0	0	0	0	0	0	0%
PIFL2	COUNT	0	1	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	5.0	0	
Limber pine	TPA	0	0.29	0	0	0	0	0	0	0.29	0.59	0.29	0	0	0	0	0	0	1.5	2.4%	
	BA/AC	0	0	0	0	0	0	0	0	0.38	1.1	0.60	0	0	0	0	0	0	2.1	5.3%	
	AVE HT. (HL)	0	7.0	0	0	0	0	0	0	43	44	21	0	0	0	0	0	0	0	0	0%
PIPU	COUNT	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1.0	0	
Colorado blue spruce	TPA	0	0	0	0	0	0	0	0.29	0	0	0	0	0	0	0	0	0	0.29	0.47%	
	BA/AC	0	0	0	0	0	0	0	0.30	0	0	0	0	0	0	0	0	0	0.30	0.76%	
	AVE HT. (HL)	0	0	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0%
POTR5	COUNT	3	78	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	85	0	
Aspen	TPA	0.88	23	0.88	0.29	0	0	0	0	0	0	0	0	0	0	0	0	0	25	40%	
	BA/AC	0	0.33	0.06	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0.46	1.2%	
	AVE HT. (HL)	11	16	26	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Forestland Species Sub-total	COUNT	3	94	3	3	5	6	24	24	20	12	12	2	0	0	0	0	0	208	0%	
Summary by Size Class for Forestland Species	TPA	0.88	28	0.88	0.88	1.47	1.8	7.1	7.1	5.9	3.5	3.5	0.59	0	0	0	0	0	61	98%	
	BA/AC	0.0	0.42	0.06	0.19	0.54	0.97	5.6	7.4	8.5	6.2	7.4	1.6	0	0	0	0	0	39	99%	
	AVE HT. (HL)	11	15	26	28	31	41	44	47	51	57	55	71	0	0	0	0	0	0	0	0%
	TPA %		29			4.1							28						61	0%	
BA/AC %		48%			6.7%							45%						100%		0%	
QUADRATIC MEAN DIA.		0.48			1.7							37						39		0%	
AVE HT. (HL)		1.2%			4.4%							94%						100%			
		1.7			8.7							16						11		0%	
		16			37							52						51		0	
