PSME report notes:

do resources have objectives for this area/community that fire doesn’t? forest structure? seedlings species comp etc.

general management plan or resource management plan – link in appendix

concern about how area will recover in the long run, will we need to do anything? plant trees we lost, etc. species, is that happening on its own?

are we getting regeneration of Doug fir and other species, pondo pine, gambel oak, are we getting more mid story doug fir trees?

oaks tend to respond quicker to fire if its been hotter and dryer that would favor oaks, important fire and drought adaptation, are we seeing a permanent shift to a more oak dominanted community

pole sized trees species comp?

desired future condition instead of short term objectives – do some research on desired future condition for this type of community

pole sized are leaning towards doug fir

what is appropriate pole sized tree density? – scientific papers, cite

definitely shift in composition

*Table 1. Douglas fir (Pseudotsuga menziesii; PSME) FMH monitoring plots and measurement years.*

Table 2. Live Tree Basal Area for PSME plots that burned in stand replacing fires (PSME-03, PSME-07, PSME-08, PSME-09) with data for each species. Douglas fir rows are highlighted.

*Figure 1. Historical data visualization of PSME plots, what year they burned, and which protocols were collected.*

*Figure 2. A visualization showing missing DBHs and DBH transfer throughout the plot history.*

*Figure 3. Canopy cover from 2004 - 2023. No significant difference was found between years (p=0.14)*

*Figure 4. Canopy cover compared to total basal area per acre*

*Figure 5. Most common herbaceous species (common names) recorded from 2008 to 2023.*

*Figure 6. Percentage of grasses recorded to forbs recorded in most common herbaceous species data in Douglas fir plots.*

*Figure 7. Canopy cover data compared to count data of grasses and forbs in Douglas Fir plots.*

*Figure 8. Count of additional species recorded per plot from 2008 - 2023 for Douglas Fir plots*

*Figure 9. Douglas Fir plots fuel loading over time.*

*Figure 10a. Fuel loading (tons/acre) by size class adjusted to y scale.*

*Figure 10b. Fuel loading (tons/acre in Douglas Fir plots by size class at a fixed y scale.*

*Figure 11. Douglas Fir plot with dead and down trees.*

*Figure 12. Pole tree density from 2001 to 2023.*

*Figure 13. Overstory tree mortality from 2001 – 2023.*

Figure 14. Live tree density pre-fire, immediately post-fire, and 20 years later, separated by size class and plot.

Figure 15. Total Pre-Fire Fuel Loading, Mean Pole Tree Height, and Mean Pole Tree Density per plot compared to Post-Burn Severity Metrics

Figure 16. Map of Douglas Fir (PSME) plots on Mica Mountain. The plots circled in red had the highest burn severity with stand replacing fires and the plots circled in green had lower severity burns

Figure 17. Map of fire progression with PSME plot locations. Refer to Figure 15. for labels of each individual plot. All plots were burned on June 20th, 2003, during the fire that burned from June 17th to June 28th.

Figure 18. Douglas Fir plots seedling density over time by species and size class.

Figure 19. Climate Analyzer Normalized Reconnaissance Drought Index Data from high elevation RMD RAWS station 2000 - 2023. “NA” = insufficient data to generate reliable estimates. Data Source: GRIDMET via climateanalyzer.org

Figure 20. Live Tree Species Composition Over Time

Figure 21. Live Tree Basal Area for PSME plots that burned in non-stand replacing fires (PSME-01, PSME-02, PSME-04, PSME-05, PSME-06, PSME-10)

Figure 22. Live Tree Basal Area for PSME plots that burned in stand replacing fires (PSME-03, PSME-07, PSME-08, PSME-09)

Figure 22. Perimeter of Helen’s 2 fire (2003) and fire severity with Saguaro National Park Rincon Mountain District boundary.

Figure 24. PSME plot locations with fire severity.