

Hello all, my name is JonahMaria Weeks and I am currently a Masters student at UC Davis where I am studying how high severity fires impact understory plant diversity in conifer forests. As a recipient of the Mary DeDecker Botanical Grant I wanted to look at the effects of fire severity in Eastern Sierra yellow-pine communities. This past August, Jesse Miller (botanist and post-doctoral researcher with UC Davis) and I conducted a post-fire study across the area burned by the Walker Fire in 2015. We surveyed 32 sixty-square-meter plots in areas that had burned with varying severity and collected information about all understory plant species present. We then looked at the relationship between fire severity and total understory richness (Figure 1) and also broke down our plant data into common plant groupings (forbs, graminoids, and shrubs) to determine if the effect of fire severity varied between plant groups.

The analyses conducted using these data show only a weak statistical relationship between fire severity and plant richness. However, this does not prove or even necessarily indicate that there is not a strong effect of fire severity on plant communities. We conducted our study only a year after the fire, and there was very little precipitation in that time period. Because of these factors, it is possible that the plant communities had not yet reached their maximum response to the fire. We also plan to consider the functional traits of the plants in future analyses to determine if the signal of the effect of fire severity is being lost or dampened by the current groupings. Other plant community metrics such as species evenness may also be important factors in helping determine the role that fire severity plays on yellow-pine communities in the Eastern Sierra.

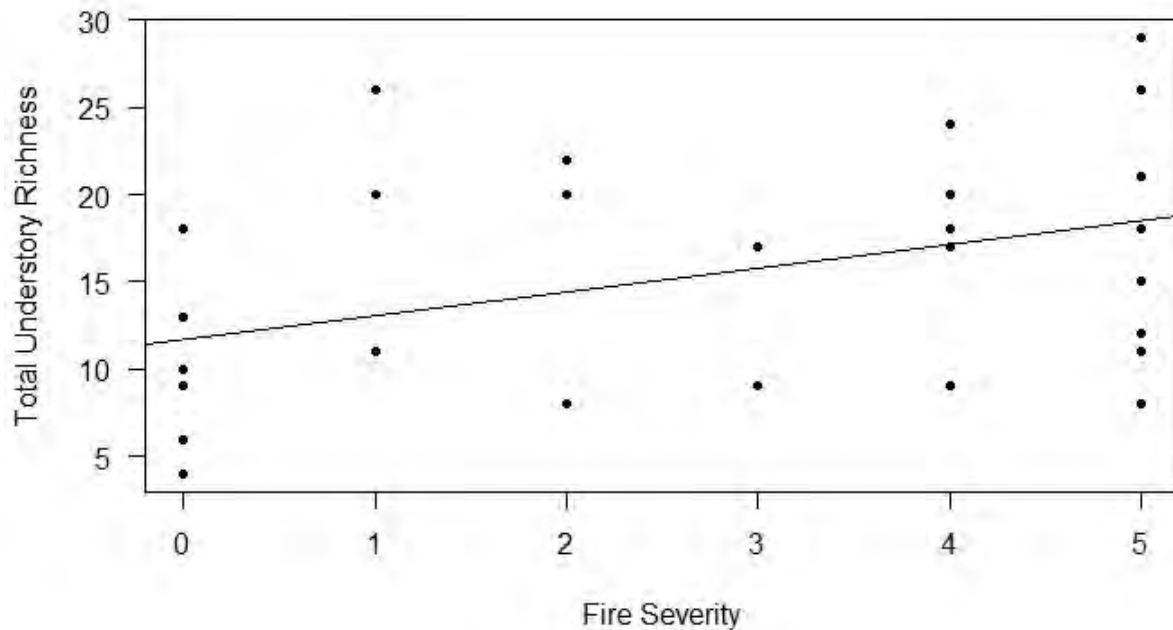


Figure 1. Effect of fire severity on total understory plant richness.

R squared = 0.0578

p-value = 0.01401



Jesse Miller at center of a high severity plot. Photo by Jonah Weeks.





Jesse Miller at center of a mid-severity/mixed severity plot. Photo by Jonah Weeks.