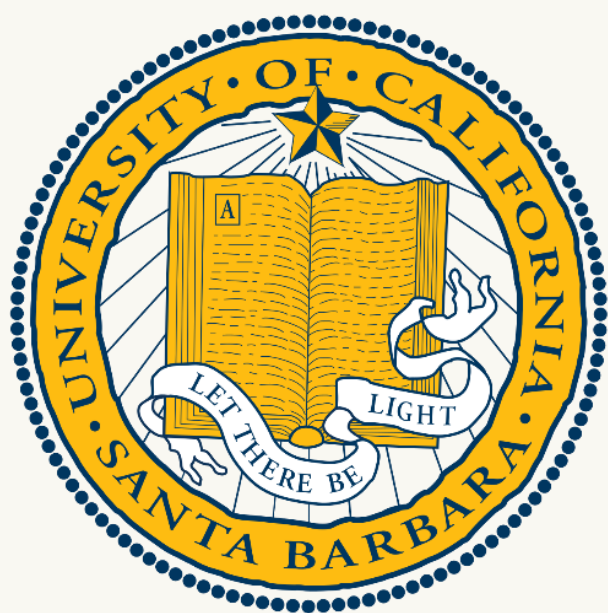
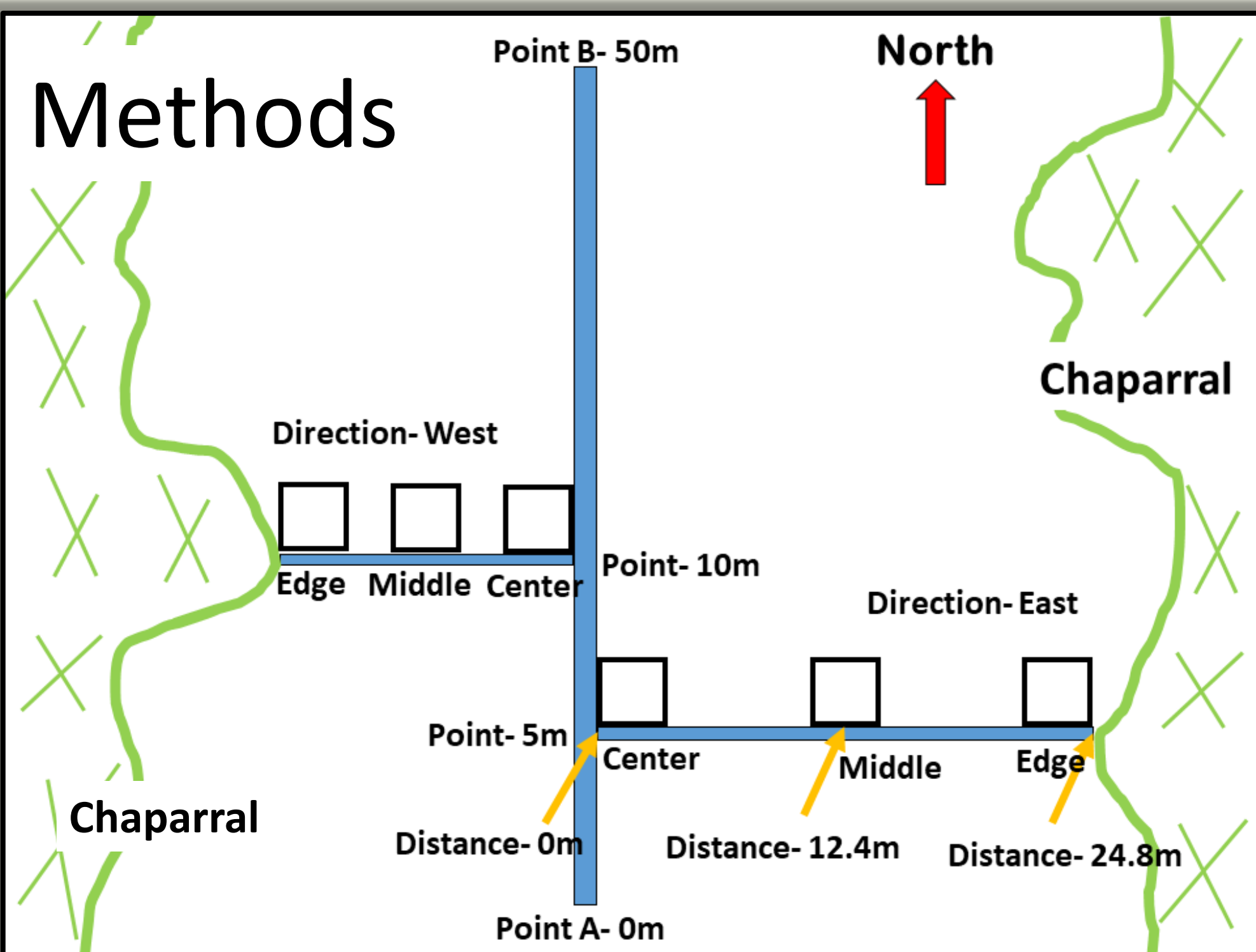
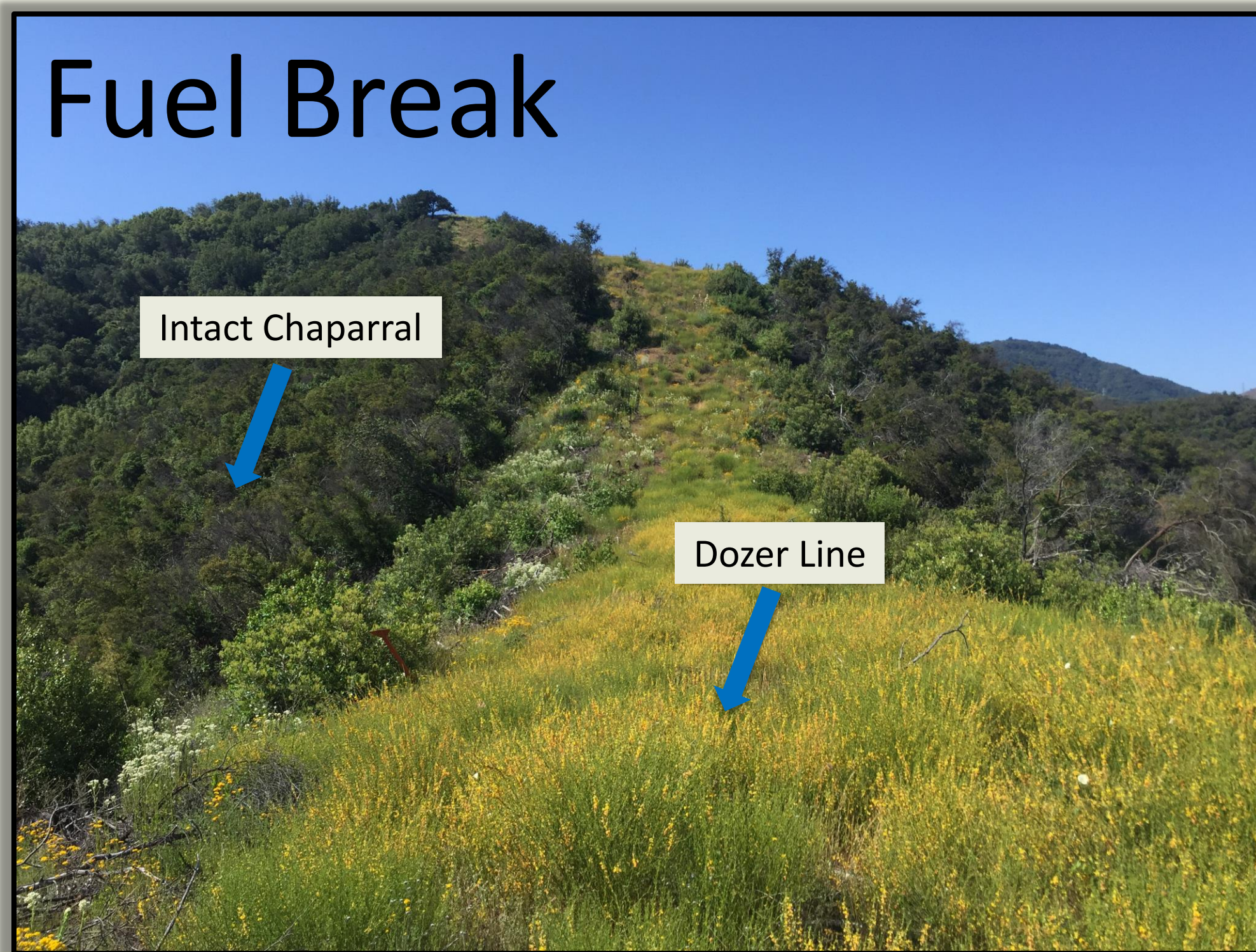
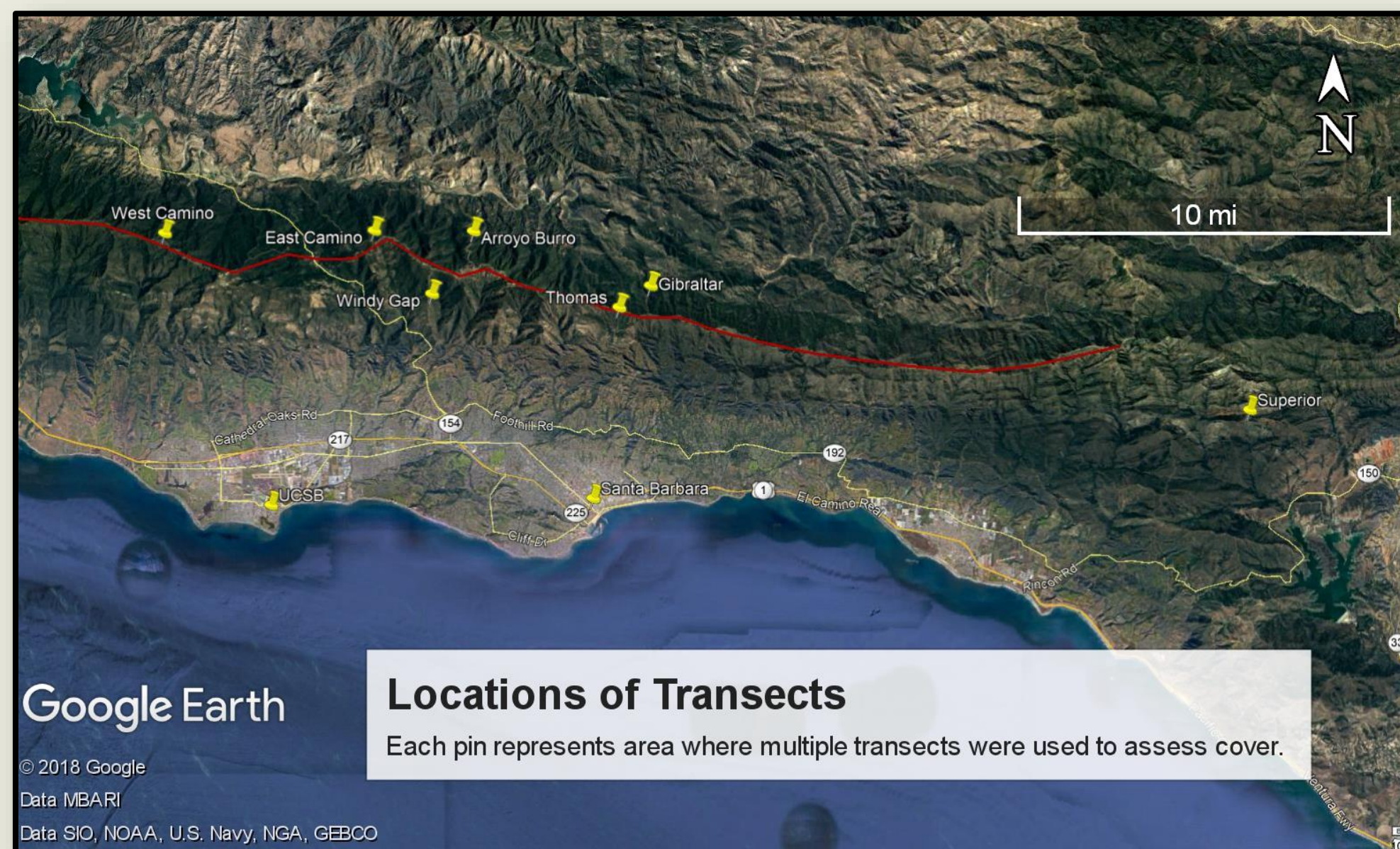


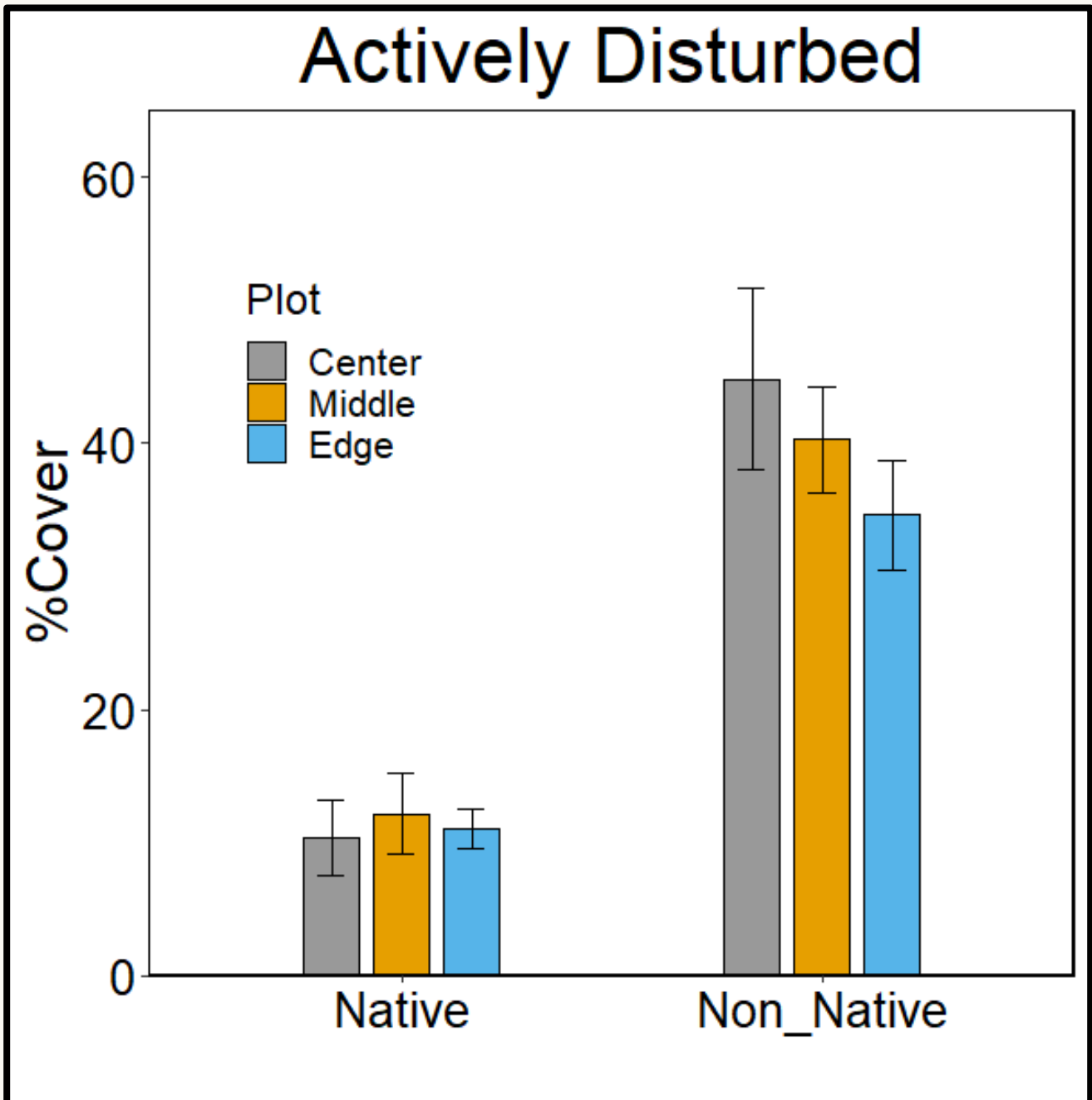
Investigating non-native plant diversity and native plant seed banks to assess the potential recovery and restoration of fuel breaks



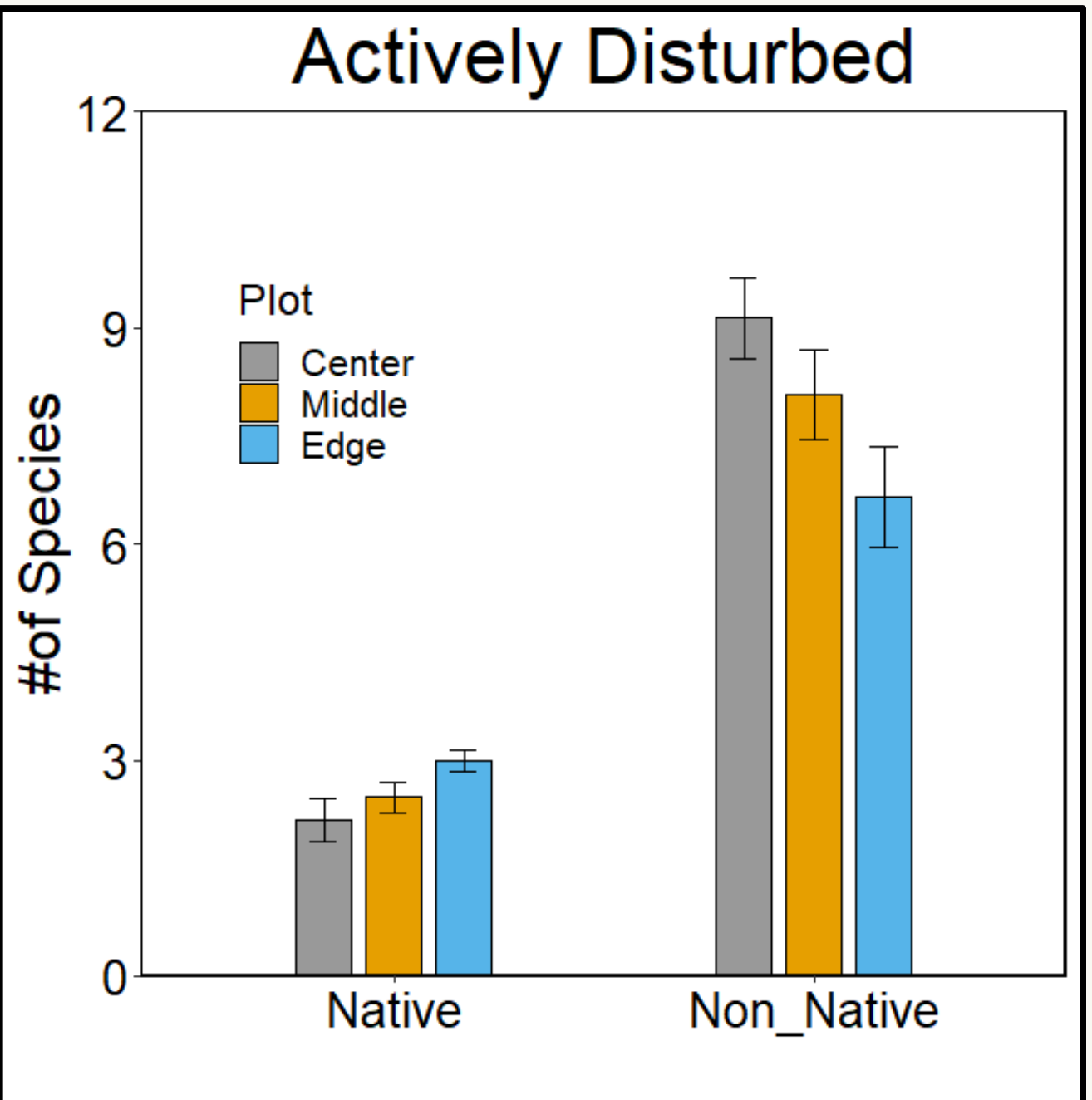
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² Forest Service. United States Department of Agriculture
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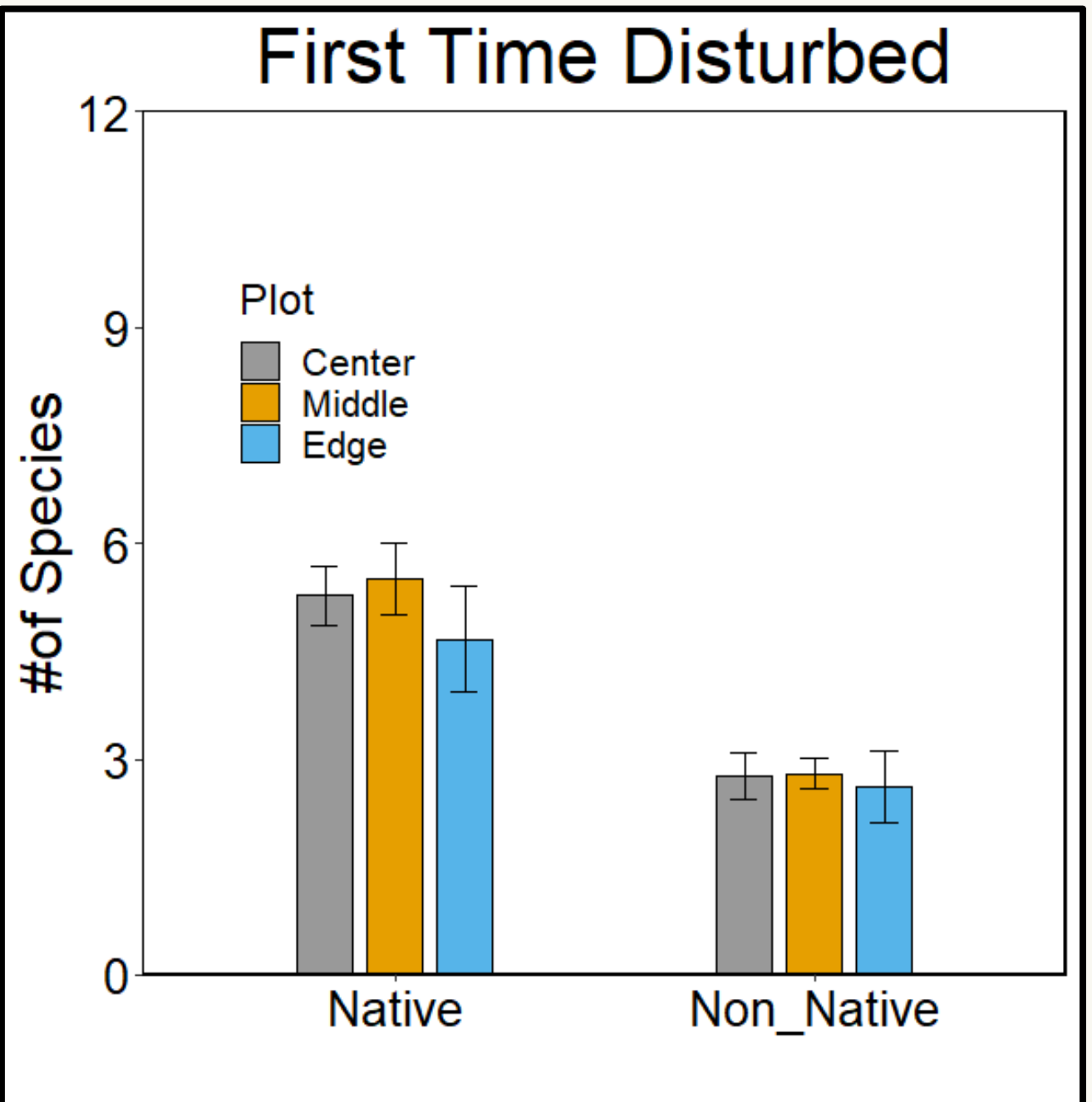
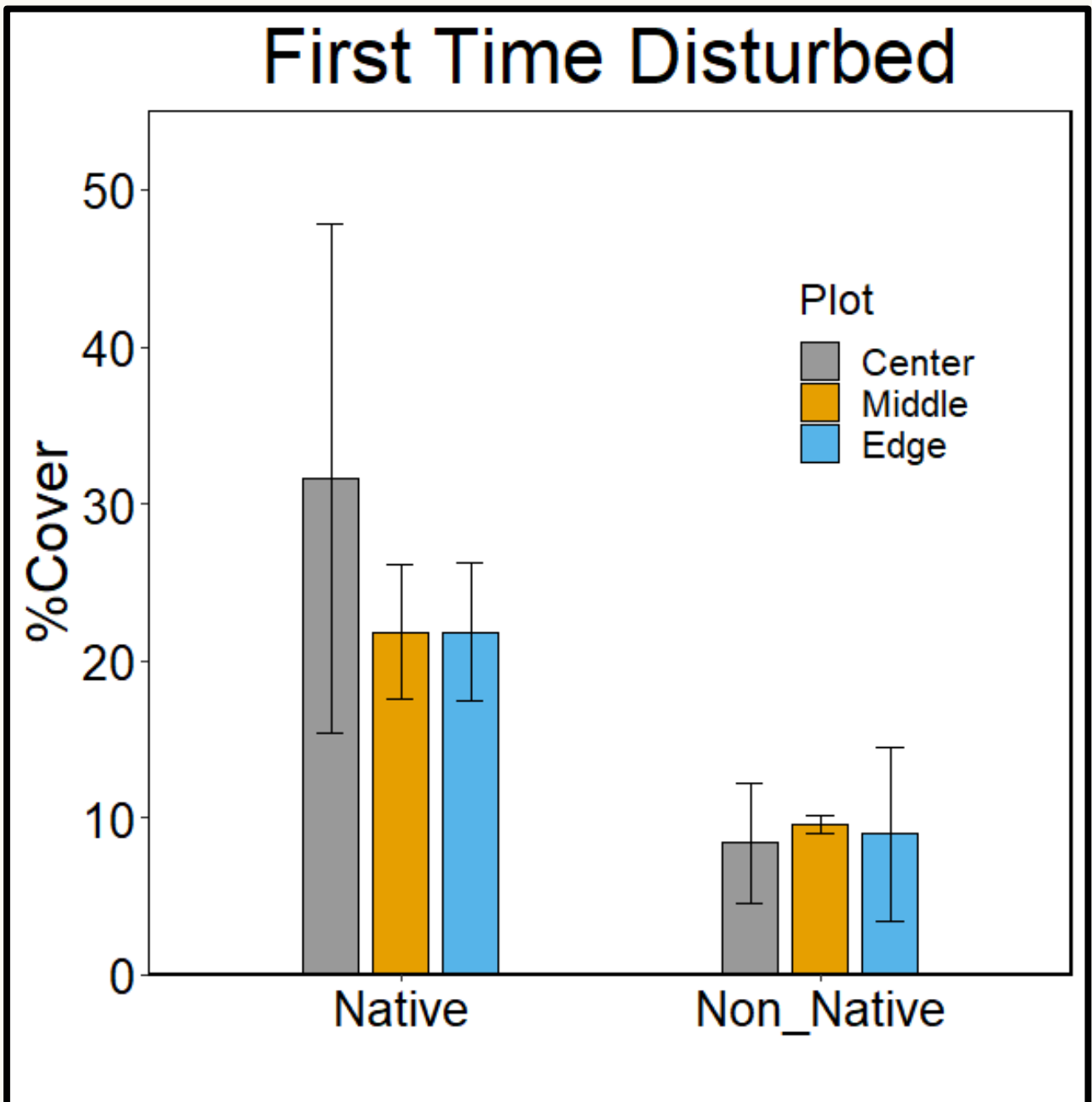
Cover



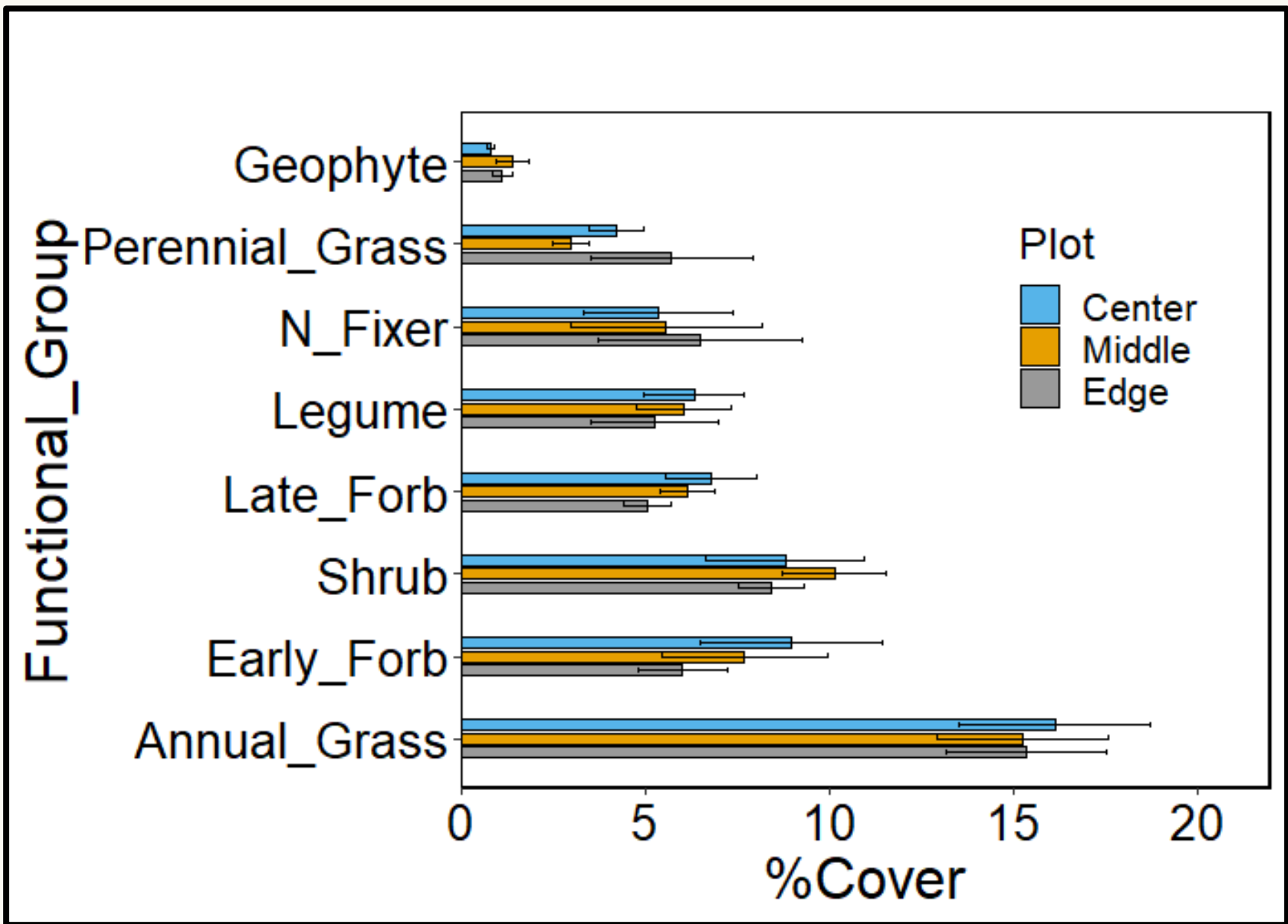
Richness



LEFT: total cover, RIGHT: species richness. Data are from fuel breaks frequently maintained and disturbed via bull dozing or mowing (~every 5-7 years). Means \pm se, N = 6.



LEFT: total cover, RIGHT: species richness. Data are from fuel breaks that were bull dozed for the first time in fall 2017 and then surveyed in spring 2019. Means \pm se, N = 3.



LEFT: Functional group cover across all transects surveyed. N_fixer includes nitrogen fixing shrubs (*Ceanothus* sp.) and Legumes include nitrogen fixing herbaceous species (*Lupinus* and *Acmispon* sp.). Early vs Late was categorized based on flower time (early; Jan-March, late; April-onward). Means \pm se, N = 35.

Top ten most dominant species by total relative cover across all transects, N = 35.

Species	Total Cover%	Functional Group
<i>Avena</i> sp.	13	Annual grass
<i>Bromus madritensis</i>	9	Annual grass
<i>Erodium botrys</i>	6	Annual forb
<i>Bromus diandrus</i>	6	Annual grass
<i>Eriophyllum confertiflorum</i>	6	Shrub
<i>Acmispon glaber</i>	5	Legume
<i>Bromus hordeaceus</i>	5	Annual grass
<i>Festuca myuros</i>	5	Annual grass
<i>Centaurea solstitialis</i>	4	Annual forb
<i>Erodium cicutarium</i>	3	Annual forb

Key: Non-native, native

Summary

- Native cover and richness did not differ among plot locations; disturbance could be removing potential recruits from the edges and plants are from the seed bank.
- There is a trend that non-native species cover and richness are greater in the center when disturbance is more frequent; however, cover is equal among plots when disturbance first takes place.
- Disturbance has shifted the perennial shrub community to annual grasses and forbs, most of which are invasive.

Next Steps

- Seed bank grow out is on-going and we hope to compare the above ground cover to the species composition found within the soil and surrounding chaparral community.
- We will add abiotic factors such as; disturbance type/frequency/time since last, width of fuel break, and climatic variables.
- We will analyze how the community and functional trait composition change among plot locations and in regards to the above abiotic factors.