



# Grazing and wildfire risk on federal land in California

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# Fires in California

After decades of fire suppression and reduced grazing, we are seeing

- grasslands turning into shrublands
- increased fire frequency, extent, and severity



# The link between grazing & fire

- Livestock grazing removes fine fuels, reducing fire ignitions and spread of fires
- Grazing may also prevent grassland transition to shrubland, reducing the risk of high severity fires in shrublands



# Questions

1. Do grazed areas burn less frequently than non-grazed federal land?
2. Does grazing impact the probability that grasslands will transition to other vegetation types?



# Our methods

Compared inside and outside of  
grazing allotments on federal land  
in California

Included fires from 2001-2016



Federal grazing  
allotments in California

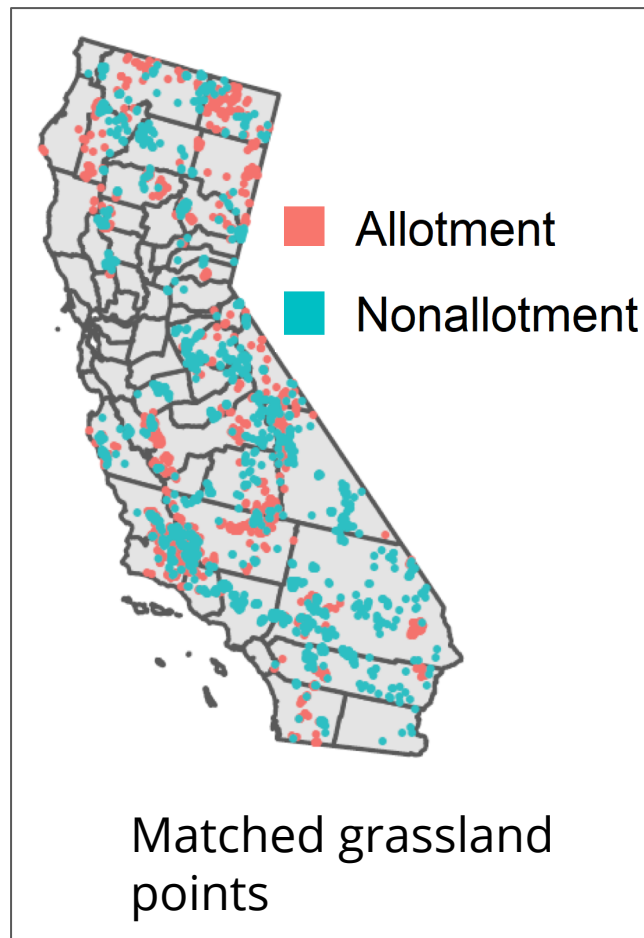
# Our methods

Included 4 vegetation types: grassland, shrubland, conifer forest, and non-conifer forest



# Our methods

- Compared each point inside an allotment to a non-allotment point with similar
  - vegetation type
  - landscape characteristics
  - remoteness and population density
  - climate



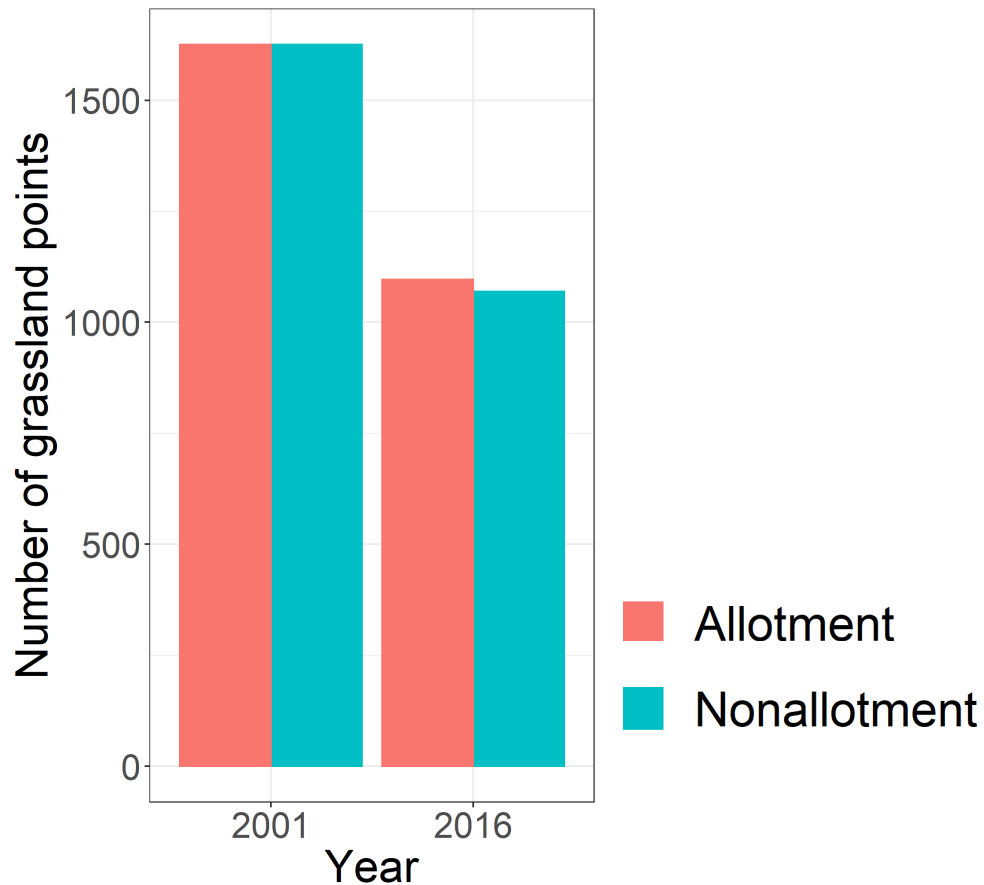
# Did grazing reduce the probability of burning at least once between 2001-2016?





# Are grazed grasslands are more likely to persist?

- Allotments were slightly more likely to maintain grasslands
- Grasslands that burned were also less likely to switch to shrub or forest



# Conclusions

1. Grazing reduces wildfire probability in some vegetation types
2. Grazing can keep grasslands from transitioning to shrubland or forest
3. Because fires in shrublands and forests tend to be more severe, maintaining grasslands may reduce the risk of intense wildfires

## Limitations & next steps

- We assume that allotments had livestock grazing from 2001-2016
- We want to see if these patterns are also true for grazing on private lands

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