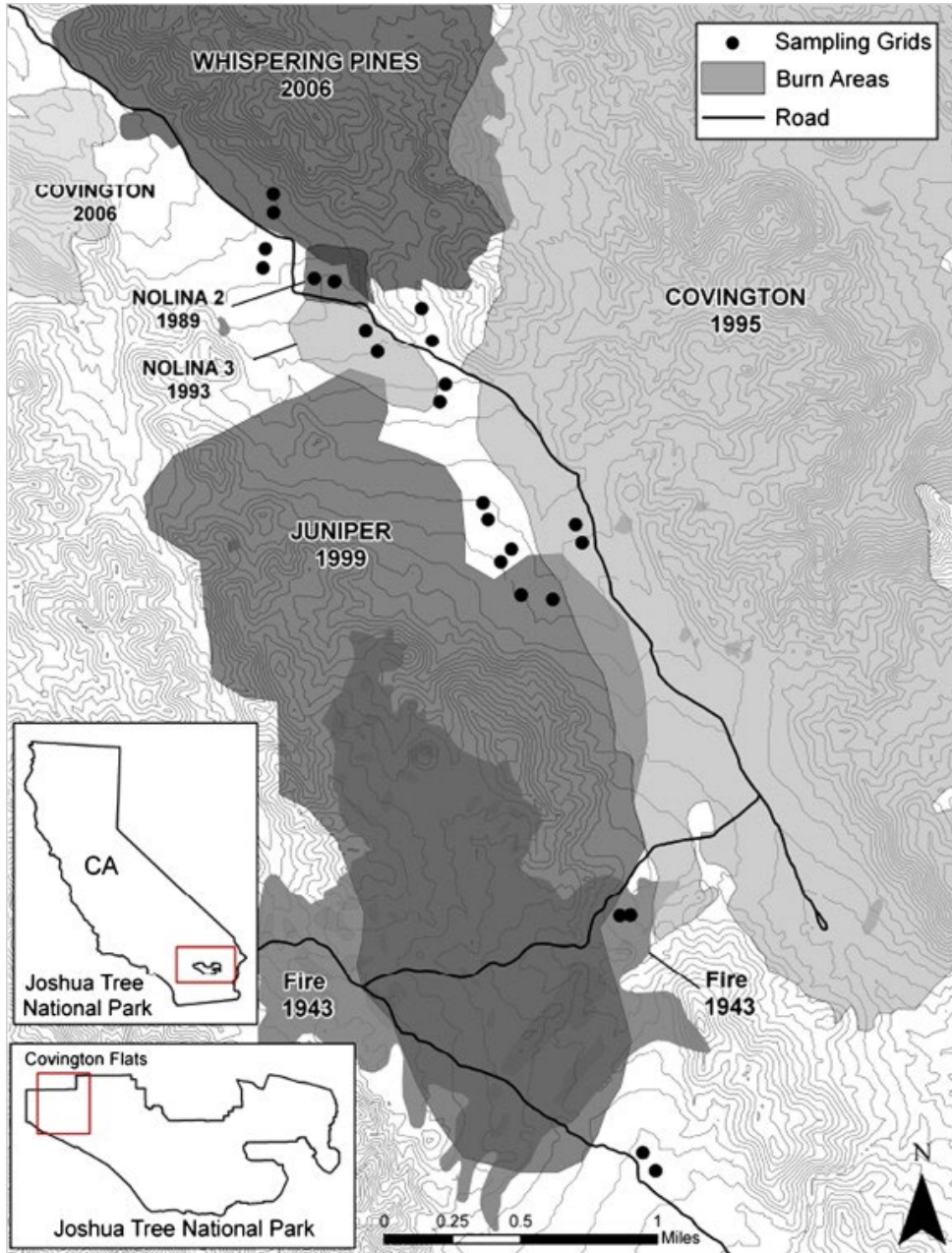


Wildfires in the Mojave Desert

- The Cima & York fires burned millions of Eastern Joshua trees (*Yucca jaegeriana*)
- Fires have been historically rare in the Mojave Desert?
- Most negative disturbance in the last 40 years driven by invasive grasses?
- How long does biocrust take to re-colonize burned plots?
- How long for plants to recover?
- How long does it take to recover the ecosystem services?
- How long does it take to have a functional ecosystem in the desert?
- Why is this important?



Hypotheses and Methodology



Ha: Wildfires driven by exotic grasses, change fire regimes. Grass fire cycles exacerbate these altered fire regimes, thus leading to biodiversity loss.

Prediction A: YSF 0-200, No JTs, No Biocrust, decline in annuals and other vegetation. Increase in exotics...according to previous literature and models.

Hb: This is true for the ENTIRE Mojave Desert.

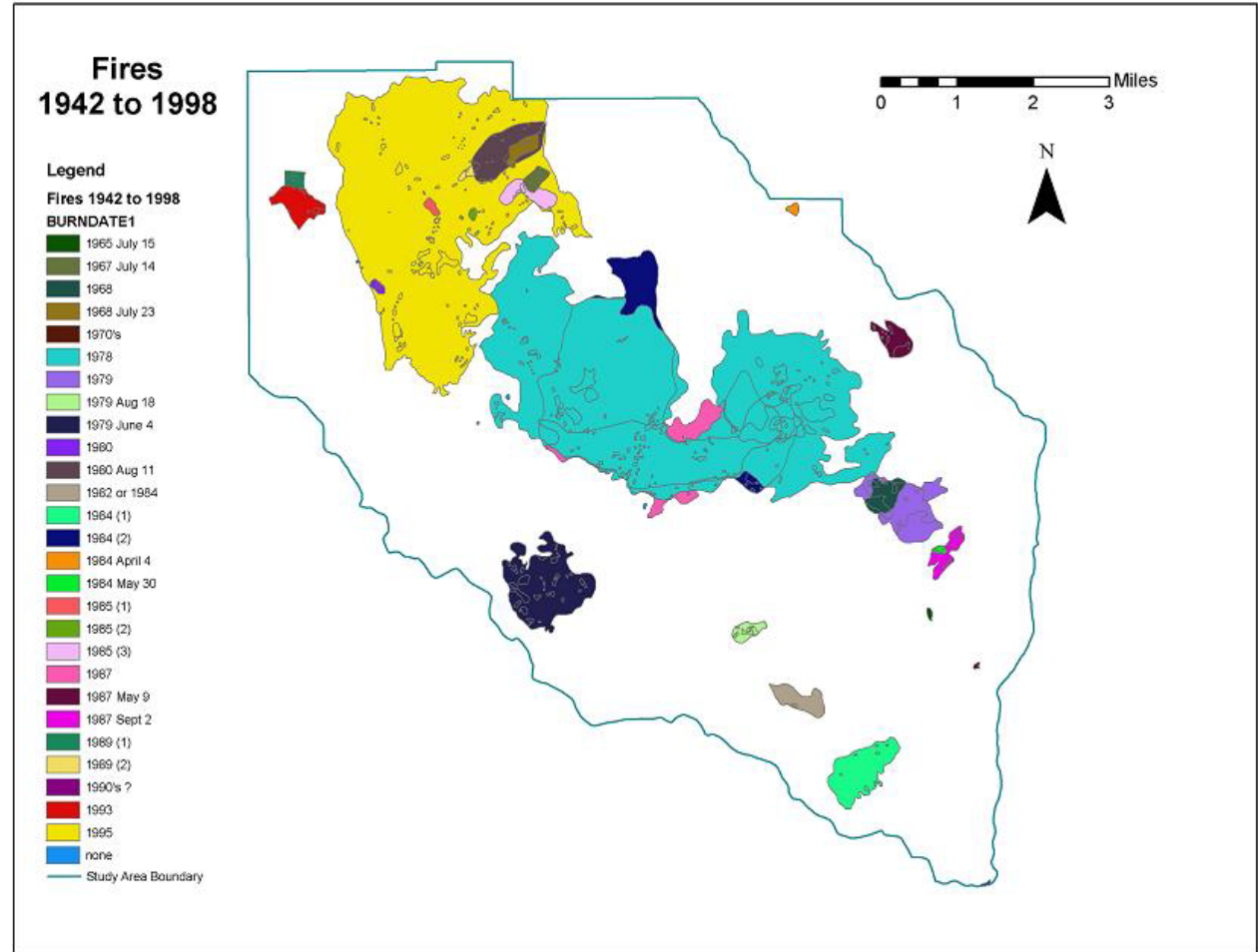
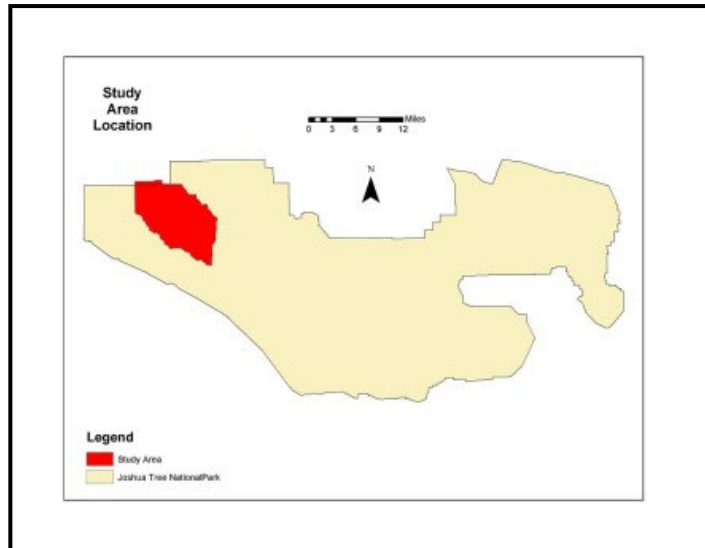
Prediction B: Sites will have similar diversity indexes across similar abiotic and biotic variables.

Methods:

- Time travel AKA Chronosequence.
- Nesting quadrates vs point intercept
- Species richness, evenness, %cover
- Invasives: richness, evenness, %cover
- Comparative analysis between plots
- Comparative analysis to previous research (Vamstad and Rotenberry)

Wildfires in the Mojave Desert

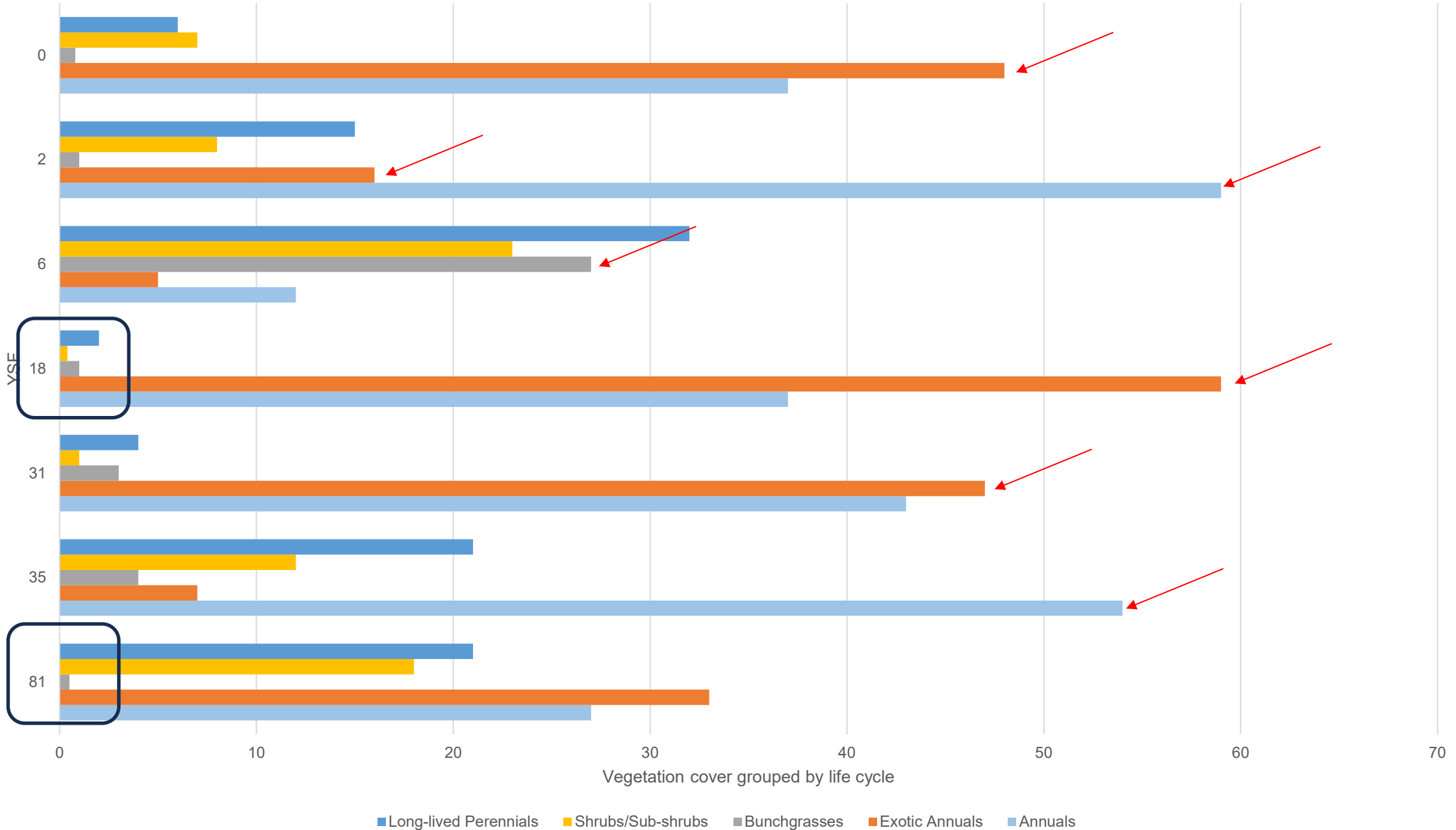
Fire history of study sites



Courtesy of Dr. Richard Minnich

YSF vs Percent Cover

Results vs Hypotheses



Wildfires in the Mojave Desert: Discussion

- Fires have been historically rare in the Mojave Desert?- Not exactly. Aperiodic regime depending on fuel buildup, wet years followed by dry years
- Most negative disturbance in the last 40 years driven by invasive grasses? Not exactly. Also driven by native bunchgrasses and annuals.
- How long does biocrust take to re-colonize burned plots? 2-6 years (lichen), 0 years (cyanobacteria)
- How long for plants to recover? Depends on community identity, invasives success, weather.
- How long does it take to recover the ecosystem services? Unknown...stay tuned
- How long does it take to have a functional ecosystem in the desert? Unknown...
- Why is this important? If you enjoy breathing, beauty, and food...we want to preserve biodiversity

