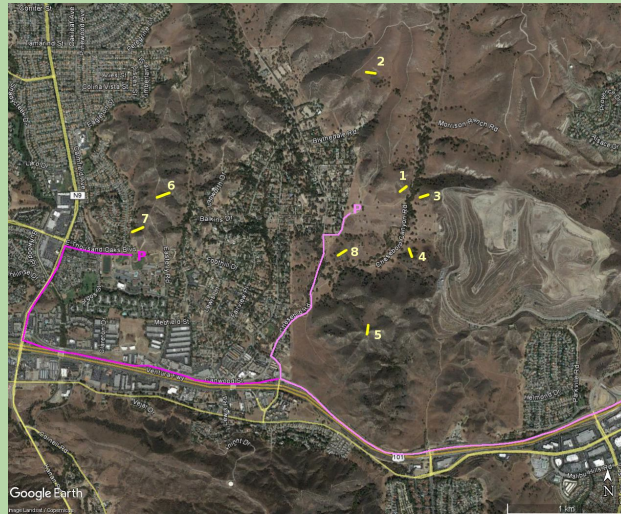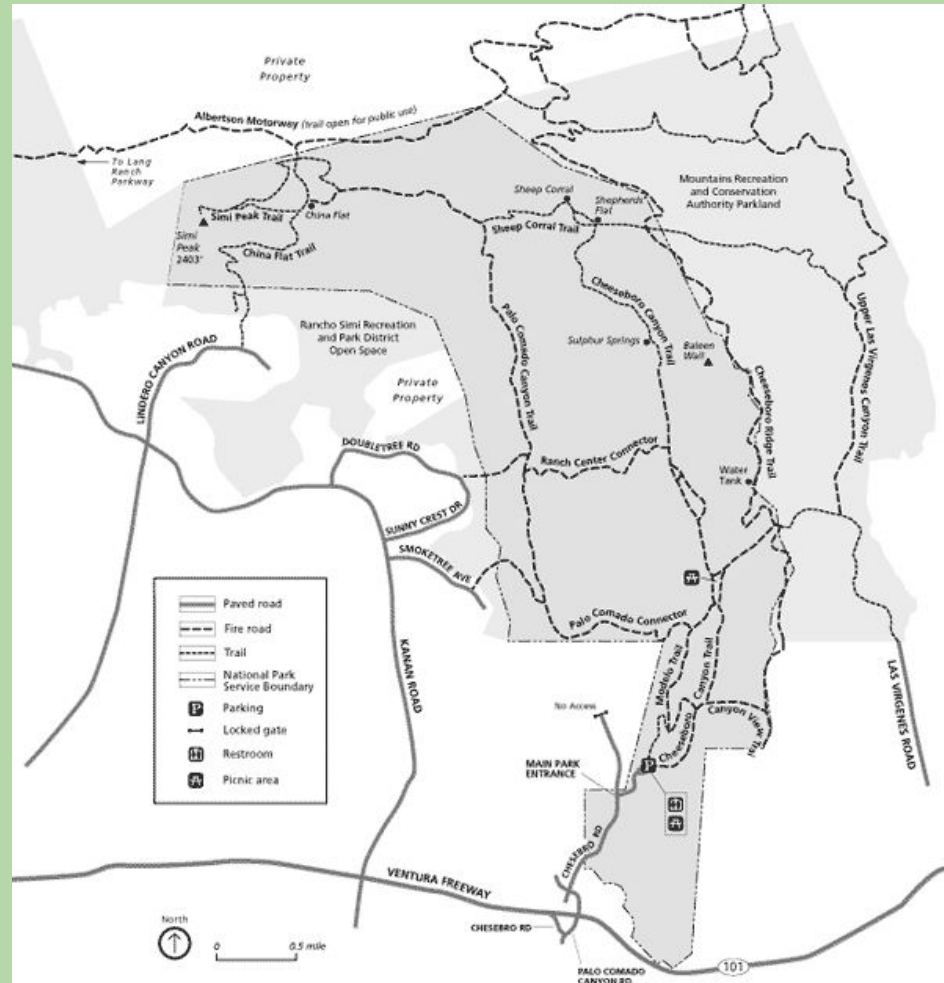# Cheseboro Canyon

Leidy Tercero-gio, Jessica Mercado, Brandon LaBeet, Stephanie Wilmot

Background

- Scott Eckhardt's hypothesis
- CSS expansion into exotic grasslands where there was no fire history

Named Trails Map

Hypothesis

Null Hypothesis: There is no significant difference in the floristic composition (diversity) of CSS as compared to when Scott Eckhardt performed his transects in these areas.

Alternative Hypothesis: There is a significant difference in the floristic composition (diversity) of CSS as compared to when Scott Eckhardt performed his transects in these areas.

Methods

- 10 m transect with 1 m intervals
- GPS application - Status and Toolbox

Kathy Sarns

Species Encountered

Avena Fatua

Baccharis pilularis
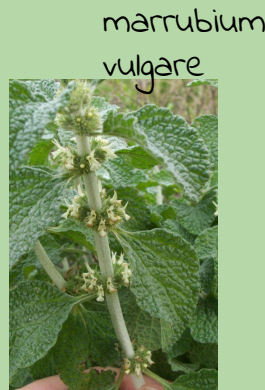
Bromus Diandrus

Salvia leucophylla

Artemisia Californica

marrubium vulgare

rhamnus ilicifolia

Artemisia dracunculus

Brassica Nigra

isocoma menziesii

Lupinus Citrinus

Bromus Sterilis

Erodium Cicutarium

Phacelia Hubbyi

malacothamnus fasciculatus

eriogonum cinereum

Results – attempted chi-square

	A	B	C	D	E	F	G	H	I	J	K	L
3		a		b								
4	Obs	122		0		122		a	122	14884	117.643	126.519
5	Exp	117.643		4.357				b	0	0	4.357	0.000
6		c		d				c	40	1600	44.357	36.071
7	Obs	40		6		46		d	6	36	1.643	21.913
8	Exp	44.357		1.643								
9												184.502
10	*	162		6		168					X^2_{calc}	16.502
11											*alpha*	0.05
12											df	1
13						Yate's X^2 (over)correction for continuity			12.932		X^2_{crit}	3.841
14								prob (Yates)	0.000		prob	0.000
15						Pirie-Hamden X^2 correction for continuity)			16.480			
16							prob Pirie-Hamden		0.000		Yule's Q	1.000
17											k (min r or c)	2
18						Cramér's phi or V (effect size measure) φ_c or w						0.313
19						Pearson's C (effect size measure)						0.299
20						Noncentrality (λ)						16.502
21												
22						Estimated power (1-β)						0.982
23						Corrected Power (Rodrique)						0.982
24												
25						Fisher's Exact Test		(alternative calculation of probability for N $\leq$ 100)				#NUM!
26												

Results: transect 6

Spring 2017

Species	Totals
Brassica nigra	5
Erodium cicutarium	3
Bromus sterilis	7
Avena fatua	3
Lupinus citrinus	2
Phacelia hubbyi	1

Eckhardt's data

Species	Totals
Eriogonum cinereum	13
Marrubium vulgare	27
Artemisia californica	12
Haplopappus venetus	1
Salvia leucophylla	9
Malacothamnus fasciculatus	2

Results: Transect 7

Spring 2017

Species	Totals
Avena fatua	4
Rhamnus ilicifolia	1
Bromus sterilis	3
Phacelia hubbyi	3
dirt	1
Brassica nigra	7
Bromus diandrus	3

Eckhardt's data

Species	Totals
Eriogonum cinereum	22
Haplopappus venetus	2
Salvia leucophylla	10
Malacothamnus fasiculatus	5
Artemesia californica	15

Results: Transect 2

Spring 2017

Species	Totals
Artemisia dracunculus	1
Salvia leucophylla	6
Brassica nigra	2
Rhamnus ilicifolia	3
Unidentified grass	4
dirt	1
Baccharis pilularis	1
Bromus diandrus	1
Avena fatua	3

Eckhardt's data

Species	Totals
Haplopappus venetus	122
Salvia leucophylla	40

Discussion

- A 2x2 chi square test was attempted for the cheesboro assessment area but no significant correlating data to Eckhardt's study could be found.
- Environmental factors believed to be responsible for the significant difference in plant populations include: Seasonal difference, precipitation difference and wildfire occurrence.

Discussion: Precipitation

Precipitation by Year: Southern California
Oxnard Recording Station
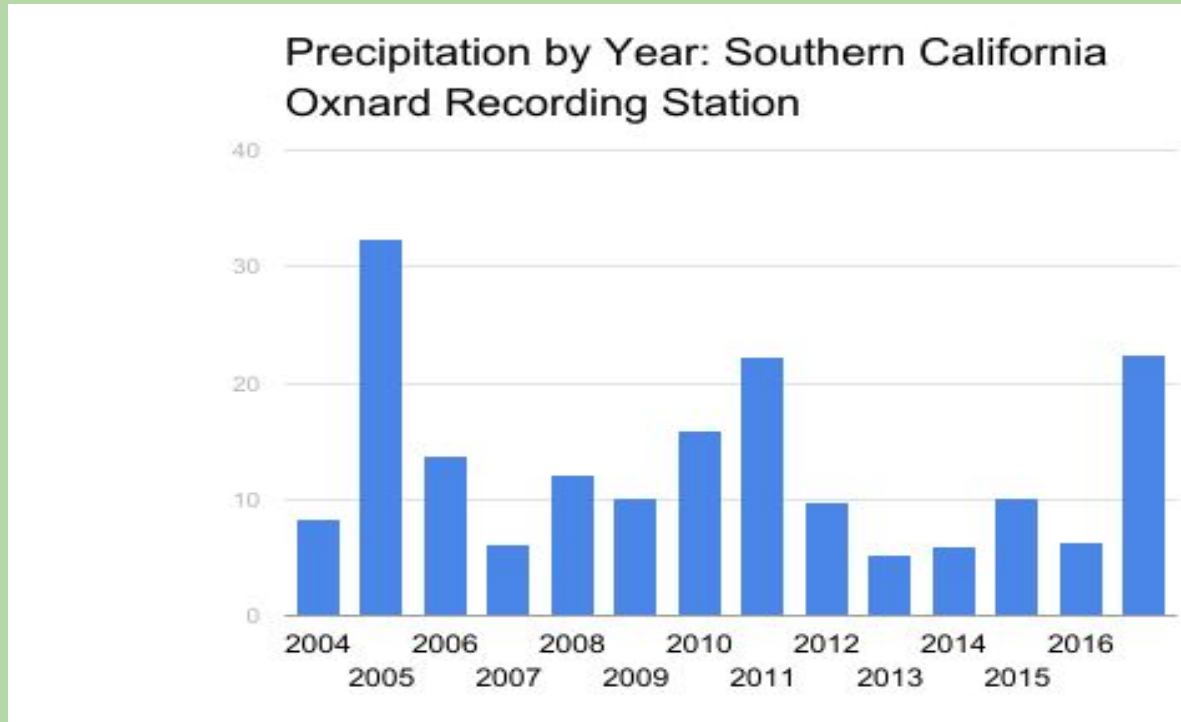
Discussion: wildfire

- 2006 Ventura County experienced severe Wildfires in which burned 162,702 acres of brush in areas neighboring transect zones. 2009 and 2013 also had significant fires in Ventura County that burned 17,500 and 28,000 acres respectively.
- No similar wildfire events have occurred in 2017.

Conclusion

- We reject the null hypothesis

- For future research on this sites we will need to try different data collection methods in order to get significant results.