

# Post-fire Woody Seedling Regeneration: Impacts from Dozer Lines Claire Monahan, Hannah Weinberger, Kristen Kaczynski **California State University, Chico**

Location: 32-Fire BLM land, NE of Chico, CA



- Large circular plots
- Plot area: ~  $95m^2$

Table 1: Number of plot types for each vegetation type

egetation Type	Burned	Dozer Line	Unburned (Reference)	
CA Black Oak	5	3	5	
Manzanita	3	3	3	
Wedgeleaf	3	3	3	

*Cercocarpus betuloides* – only an individual seedling found in one Manzanita dozer line plot (Fig. 5) Quercus kelloggii – some presence in Manzanita vegetation community plots but absent in all California Black

Oak vegetation plots (Figs. 4 & 5)

Wedgeleaf vegetation dozer line plots – absence of all studied woody vegetation species (Fig. 6)

	Burn		Dozer Line		Reference	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
ica	0	0	2	0	7	0
	0	0	3	0	3	0
านร	216	3	1	0	0	0
	0	0	0	0	2	0
	0	0	6	0	26	0
а	1	0	0	0	0	0
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	Burn		Dozer Line		Reference	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
	0	0	3	0	0	0
nus	15	0	3	0	0	0
	10	0	19	0	2	0
es	0	0	1	0	0	0
anita	2	0	0	0	0	0
а	3	0	0	0	1	0

## **Studied Seedling Species**



Arctostaphylos viscida 28 April 2019



*Ceanothus integerrimus* 5 May 2019

## Conclusions **Burned Communities:**

### **Dozer Line Communities:**

## Literature Cited

### Acknowledgments

- California State University, Chico

- Big Chico Creek Ecological Reserve





Arctostaphylos manzanita 28 April 2019

Quercus kelloggii

9 May 2019



Pinus sabiniana 9 May 2019



28 April 2019



Lonicera interrupta 14 May 2019

The lack of regenerating **Q. kelloggii** and **C. cuneatus** seedlings in their designated communities may lead to future shifts in community composition.

**Q. kelloggii** seed absence can be explained by the sustained direct sunlight received in the burned area, which causes seed death<sup>3</sup> Also, there is the potential of fatal mold and fungal **infections** occurring from seed burial under moist duff.<sup>3</sup>

• *C. cuneatus* seeds have adapted to be stimulated by fire<sup>3</sup> This raises questions towards seedling absence in the burn plots, which may have partially been caused by strong competitors, like **C. integerrimus** and **L. interrupta**.

In the burned Manzanita communities **A. viscida** and **A.** *manzanita* presence is to be expected due to the need of fire to break seed dormancy.<sup>3</sup>

 Dozer line practices can have significant impacts on vegetation community recovery.

All the dozer line vegetation communities were **not making an** apparent recovery to pre-fire community compositions.

## **Future Research**

• How can fire suppression techniques be altered in order to have less of an impact on vegetation recovery?

• Can fuel reduction practices assist in a vegetation community's ability to regenerate to the previous community composition when a fire does occur?

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