Reducing Fire Severity in the Southern Sierra Nevada Mountains

Wire, Fuel, and Forests

Area of Interest
The Dinkey Landscape is part of a federal project that encourages the collaboration of local public and private entities with the U.S. Forest Service to improve the recreation and management of the landscape and the management of the forest.

Background

GOAL

• Assumed funds + B + C

Advisors: C. Naomi Tague, Christopher Heckman

Problem

• SRCD Funded in Full Prioritized Treatment Simulation (10% Treatment)

Goal

• 2012

MODELING FIRE SEVERITY

In this study, fire severity is defined by a wildfires fire’s flame length, or the distance between the flame tip and the ground surface at the wildfire’s front. Fuel and fire models developed and sold by the USDA and Cal Fire were used to simulate forest growth, fuel treatments of varying intensity and scope, and subsequent wildfire behavior.

Quantifying Costs and Benefits

The effects of climate change on forest growth should be included in future modeling efforts to assess how changes in vegetation composition and total biomass may impact potential fire severity and fire risk.

• 154,000 acres within Sierra National Forest

Area of Interest

• Fire, Fuel, and Forests

### FINDINGS & RECOMMENDATIONS

A large data gap exists for private lands, which reduces the capability to model fire behavior using public agency modeling tools. Alternative models which use remotely sensed satellite data may help improve modeling on private lands without the need to enter landowner property and thus maintain privacy.

### EXPLORE ONLINE

We developed an online interactive tool through Shiny to help foster community engagement in wildfire prevention and planning efforts. The tool allows landowners to visualize the potential benefits to individual private landowners when treatments are performed across the landscape through community collaboration to reduce fire risk.

• E-mail: gp-savingsierras@bren.usc.edu

• UCSB Bren School’s Master’s Group Project: https://www.bren.ucsb.edu/research/theses/gchit

• UCBER Rare Species Center: https://www @berkeley.edu/research/theses/gchit

• Funding for this project was made possible with the support of the SRCD. Funds was made possible with the support of the SRCD and its partners, which includes the U.S. Forest Service, the UC Berkeley Rare Species Center, and the UC Berkeley Bren School of Environmental Science & Management.

• UCBER Rare Species Center: https://www.berkeley.edu/research/theses/gchit

• E-mail: gchit@bren.ucsb.edu

**ACKNOWLEDGMENTS & REFERENCES**

This project would not have been possible without the dedicated support and partnership of the Southern Sierra Nevada Conservation District (SRCD) and its partners. We would specifically like to acknowledge and thank the following people and organizations for their advice and support in working with us to bring this project to fruition: C. Naomi Tague, PhD; Steve Haze, John Heywood, and the Southern Sierra Nevada Conservation District (SRCD).

### Source Data

• Additional Resources:

1. For copies of the poster, brief, or paper, please use one of the following.

2. UCSB Bren School’s Master’s Group Project: https://www.bren.ucsb.edu/research/theses/gchit

3. Funding for this project was made possible with the support of the SRCD. Funds was made possible with the support of the SRCD and its partners, which includes the U.S. Forest Service, the UC Berkeley Rare Species Center, and the UC Berkeley Bren School of Environmental Science & Management.

4. We developed an online interactive tool through Shiny to help foster community engagement in wildfire prevention and planning efforts. The tool allows landowners to visualize the potential benefits to individual private landowners when treatments are performed across the landscape through community collaboration to reduce fire risk.

5. UCBER Rare Species Center: https://www.berkeley.edu/research/theses/gchit

6. E-mail: gchit@bren.ucsb.edu

**Additional Resources:**

• UCBER Rare Species Center: https://www.berkeley.edu/research/theses/gchit

• Funding for this project was made possible with the support of the SRCD. Funds was made possible with the support of the SRCD and its partners, which includes the U.S. Forest Service, the UC Berkeley Rare Species Center, and the UC Berkeley Bren School of Environmental Science & Management.

• We developed an online interactive tool through Shiny to help foster community engagement in wildfire prevention and planning efforts. The tool allows landowners to visualize the potential benefits to individual private landowners when treatments are performed across the landscape through community collaboration to reduce fire risk.

• Additional Resources:

1. For copies of the poster, brief, or paper, please use one of the following.

2. UCSB Bren School’s Master’s Group Project: https://www.bren.ucsb.edu/research/theses/gchit

3. Funding for this project was made possible with the support of the SRCD. Funds was made possible with the support of the SRCD and its partners, which includes the U.S. Forest Service, the UC Berkeley Rare Species Center, and the UC Berkeley Bren School of Environmental Science & Management.

4. We developed an online interactive tool through Shiny to help foster community engagement in wildfire prevention and planning efforts. The tool allows landowners to visualize the potential benefits to individual private landowners when treatments are performed across the landscape through community collaboration to reduce fire risk.

5. UCBER Rare Species Center: https://www.berkeley.edu/research/theses/gchit

6. E-mail: gchit@bren.ucsb.edu

**ACKNOWLEDGMENTS & REFERENCES**

This project would not have been possible without the dedicated support and partnership of the Southern Sierra Nevada Conservation District (SRCD). Funds was made possible with the support of the SRCD and its partners, which includes the U.S. Forest Service, the UC Berkeley Rare Species Center, and the UC Berkeley Bren School of Environmental Science & Management.

**Authors:** Justin Heyerdahl, Chris Hughes, Tess Morgridge, Craig O’Neill, Jason White

**Advisors:** C. Naomi Tague, Christopher Heckman

**Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.

**Tractable Average Scenarios**

Funds used for mechanical thinning allow for treatment of a larger proportion of the private landscape, and can be stretched further when utilized through government cost-sharing programs. However, even under an optimal funding scenario, treatable acreage falls short of an ideal treatment scenario, which would encompass 21% of the landscape.