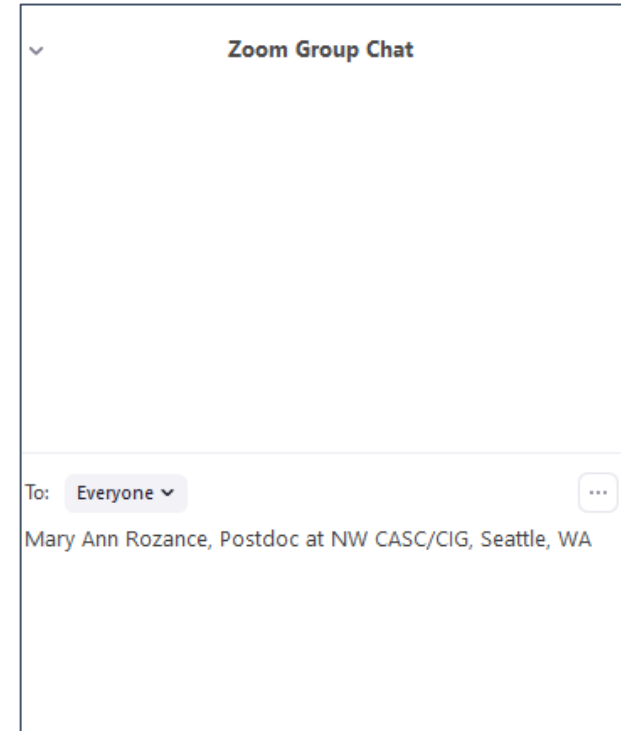


Welcome!

- We will begin shortly
- Please type your name, affiliation and current geographic location in the Zoom chat box
- Keep camera on if possible, turn mic off when not talking



Co-developing a post-fire recruitment probability web app

Kim Davis, University of Montana

Ty Tuff, University of Colorado, Boulder



The University of Montana acknowledges that we are in the aboriginal territories of the Salish and Kalispel people.

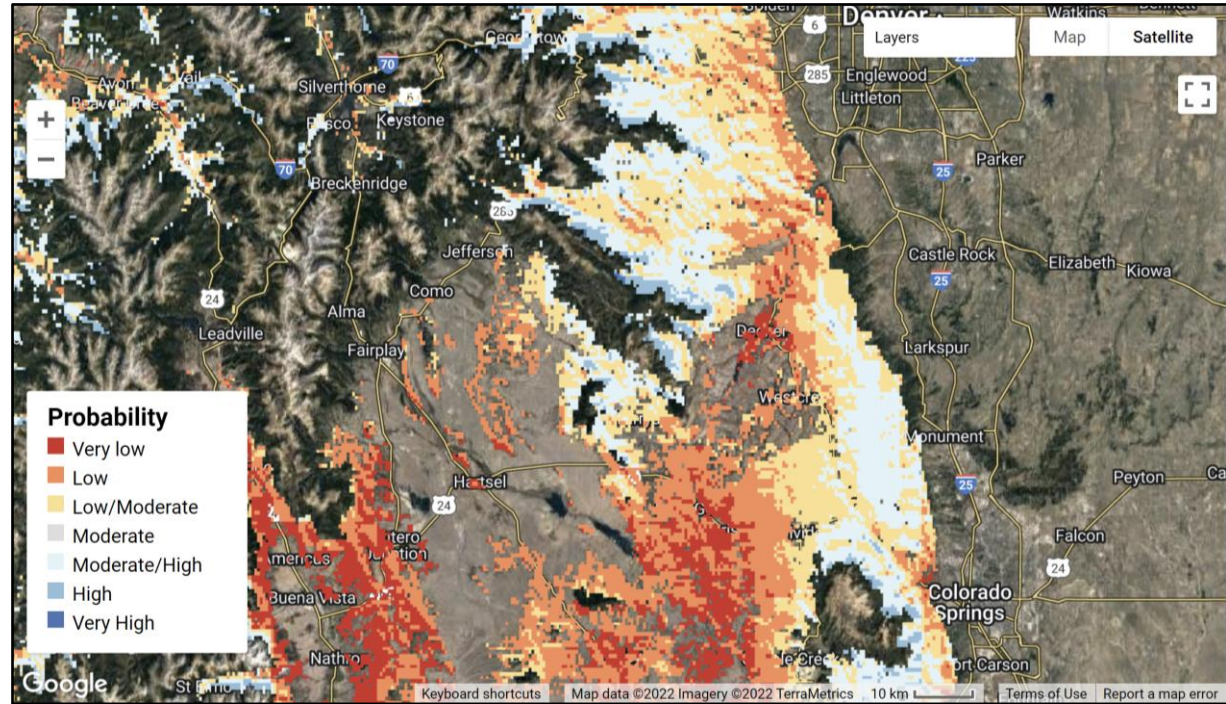
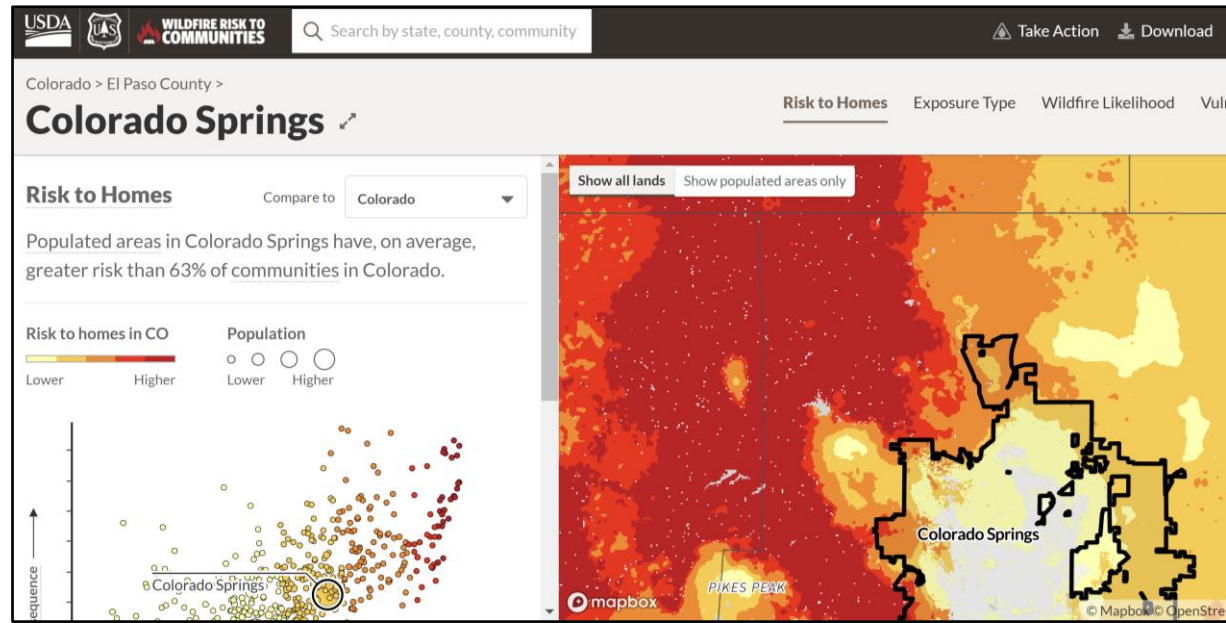


Larry
Abramson
Missoulian





Photo: Timber Burnette



Communicating about potential post-fire forest recovery



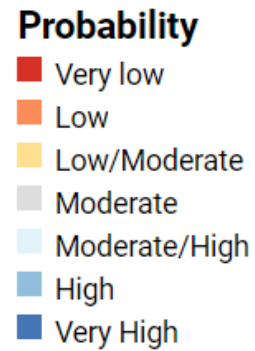
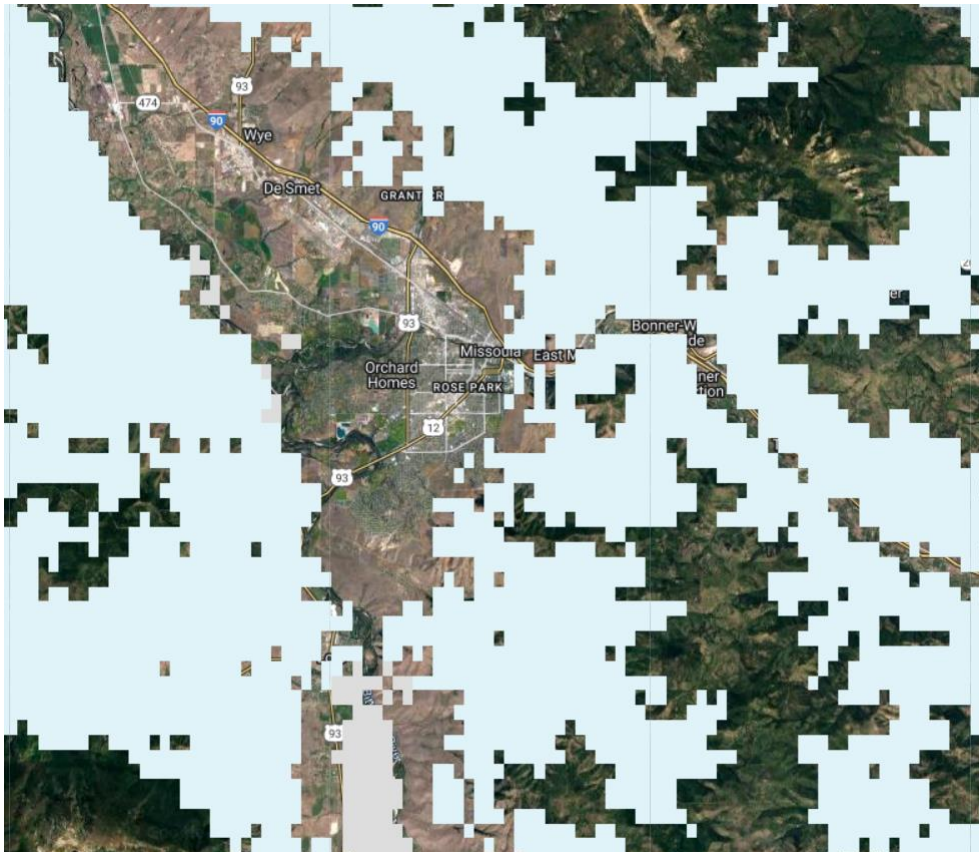
Photo: Tom Bauer (Missoulian)



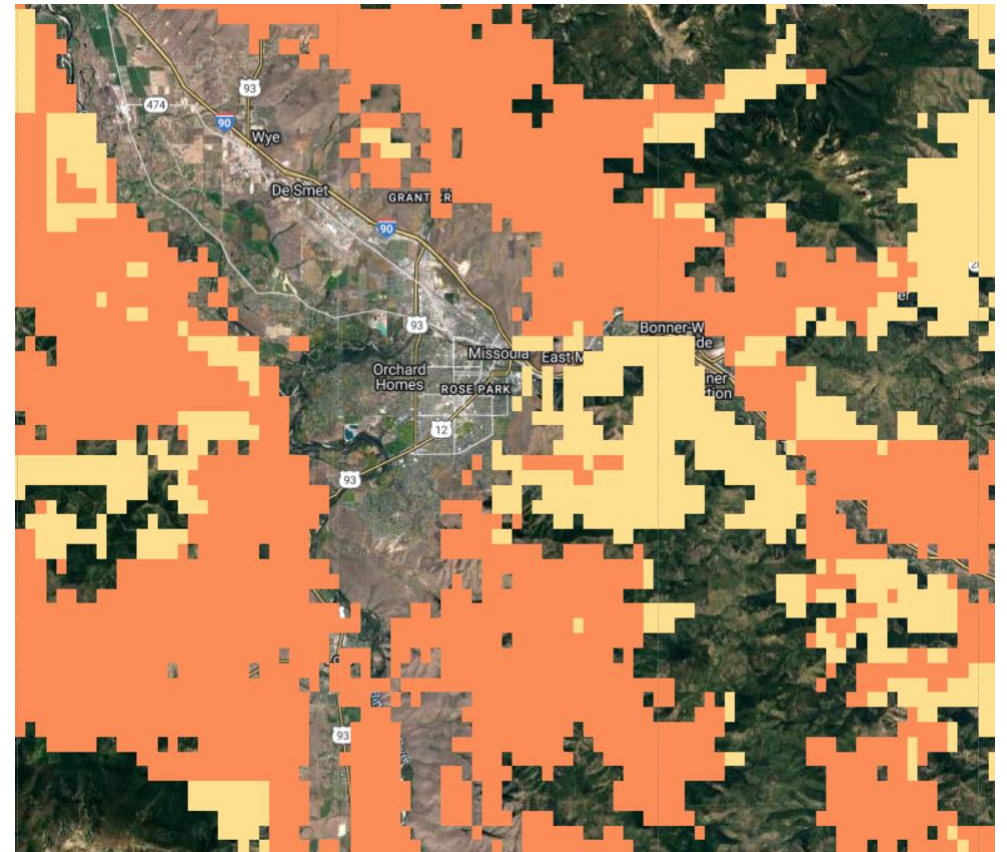
Photo: Lolo National Forest

Communicating about potential post-fire forest recovery

Low severity scenario



High severity scenario



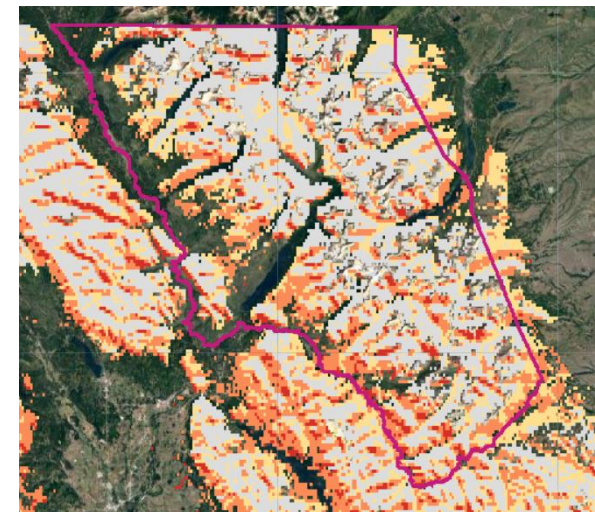
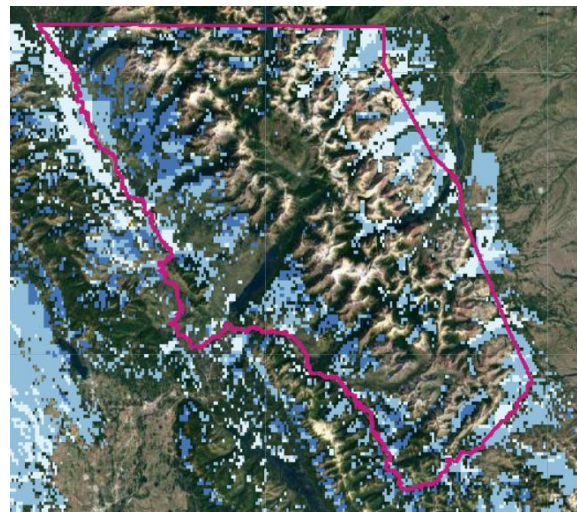
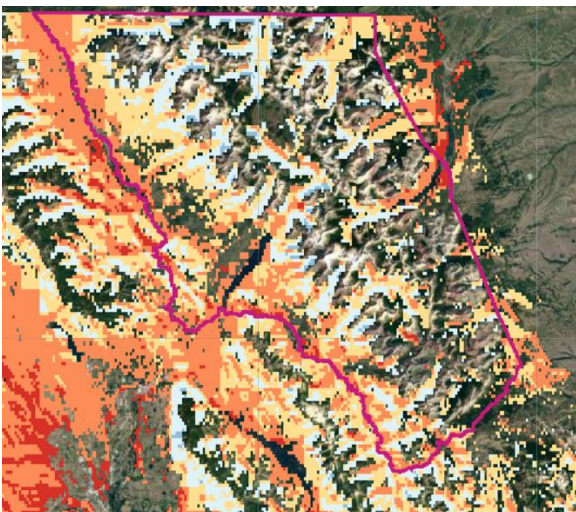
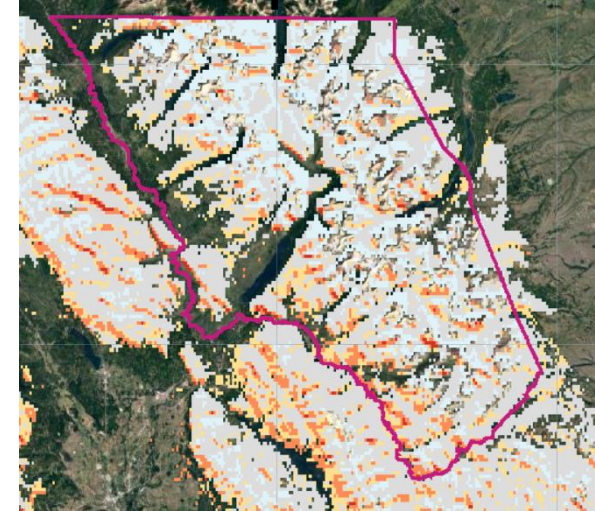
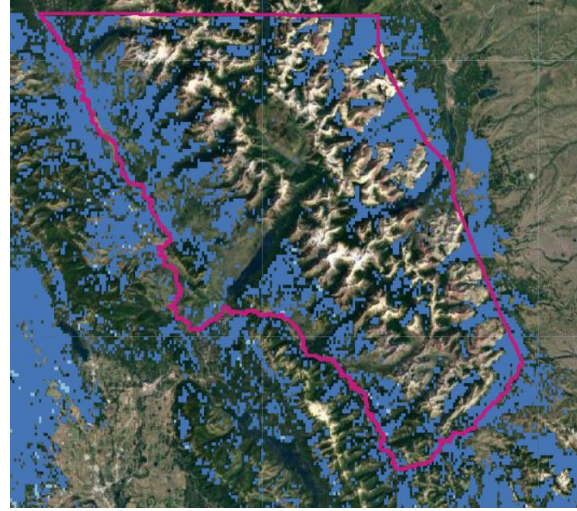
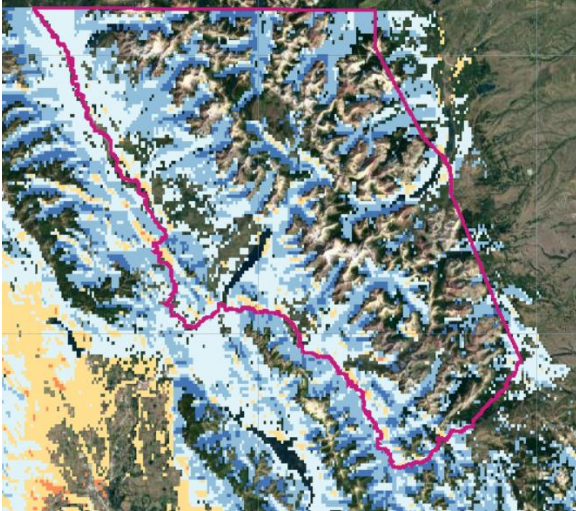
Glacier NP post-fire recruitment probability

Douglas-fir

Lodgepole pine

Subalpine fir

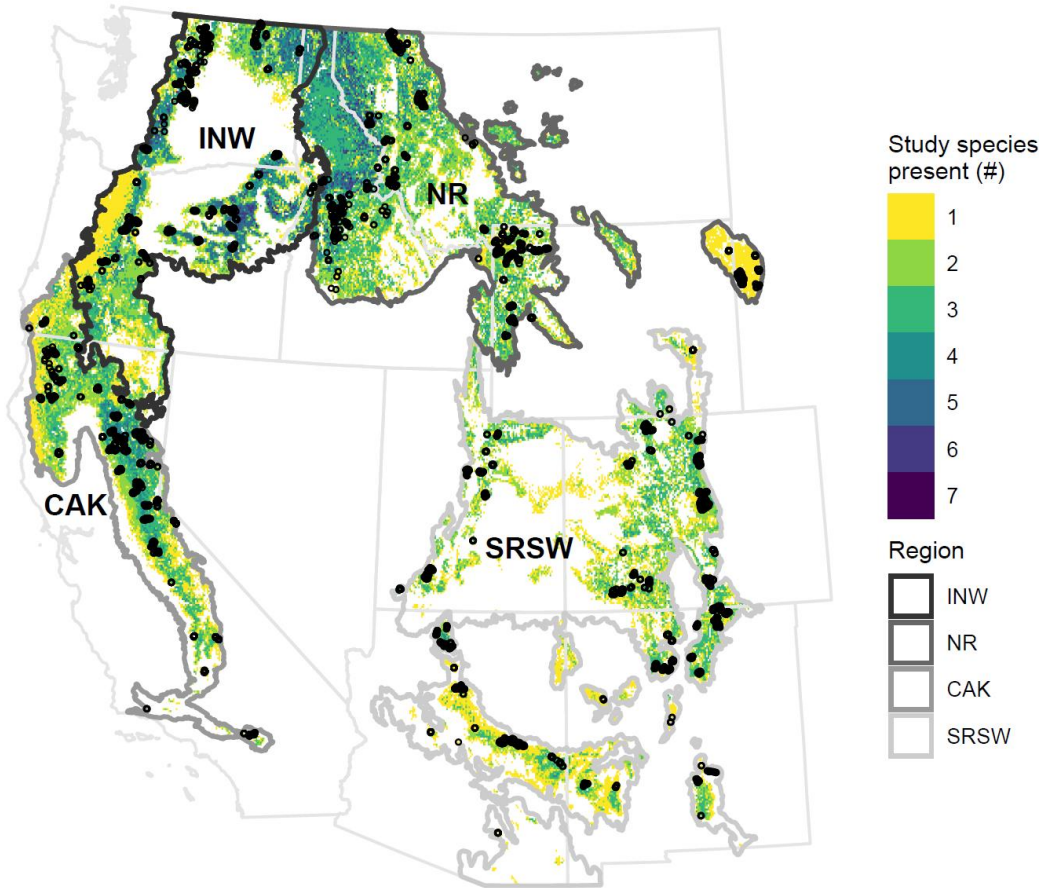
High severity scenario
1980-2000
2031-2050



Probability

- Very low
- Low
- Low/Moderate
- Moderate
- Moderate/High
- High
- Very High

Modeling post-fire recruitment



Species	Plots
All combined	10,181
Douglas-fir	5,951
Engelmann spruce	1,520
Lodgepole pine	3,232
Ponderosa/Jeffrey pine	7,719
Subalpine fir	2,268
White/grand fir	3,846

Post-fire recruitment projections

Climate 1981-2000

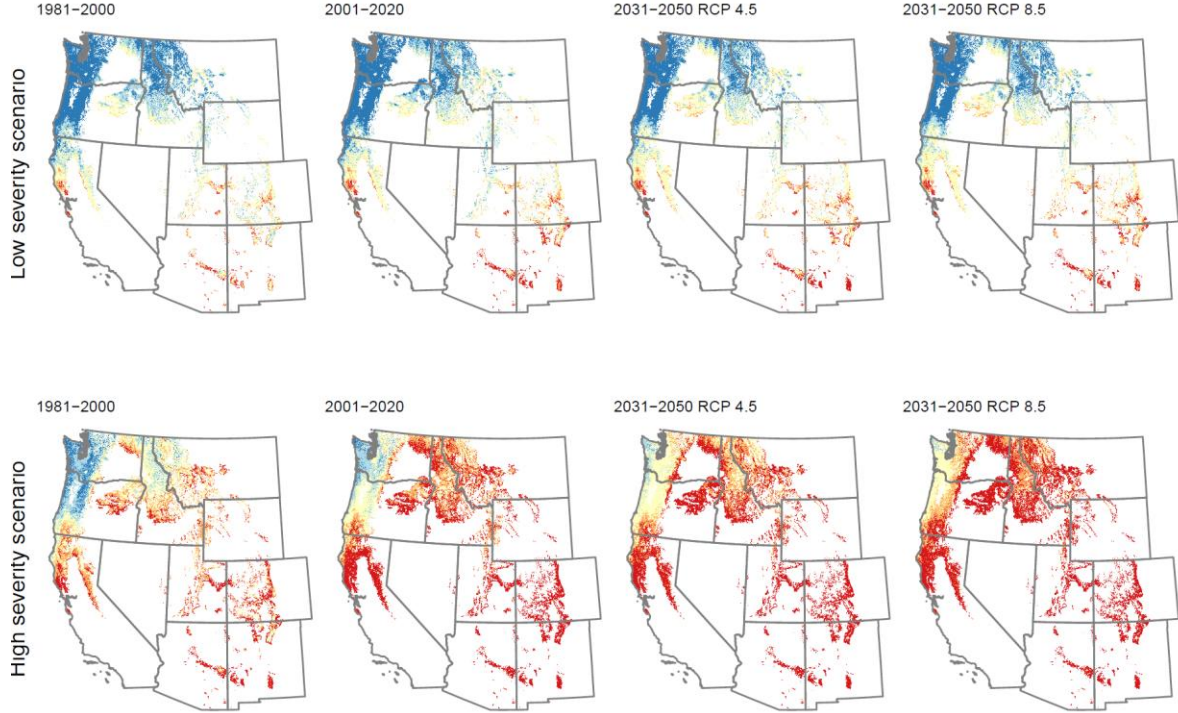
Climate 2001-2020

Climate 2031-2050
5 GCMs
RCP 4.5 and 8.5

Low severity scenario

High severity scenario

Model



Fire severity scenarios used in projections

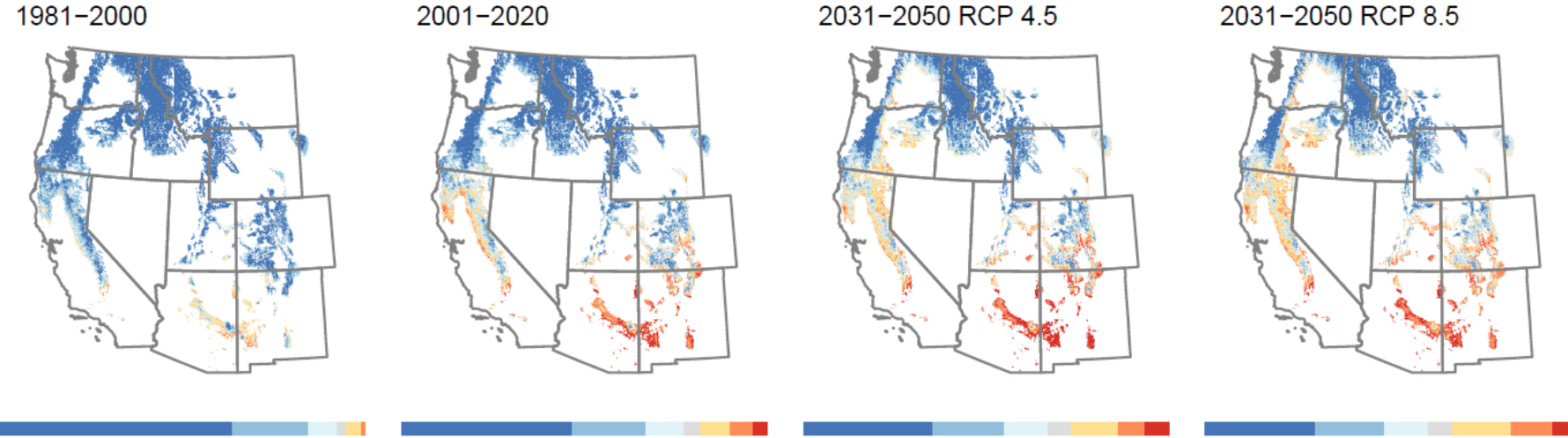


Low severity	Variable	High severity
10 m	Distance seed source	150 m
100	RBR	400
30%	Mean tree cover in 300 m radius	10%

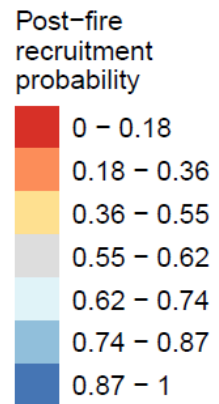
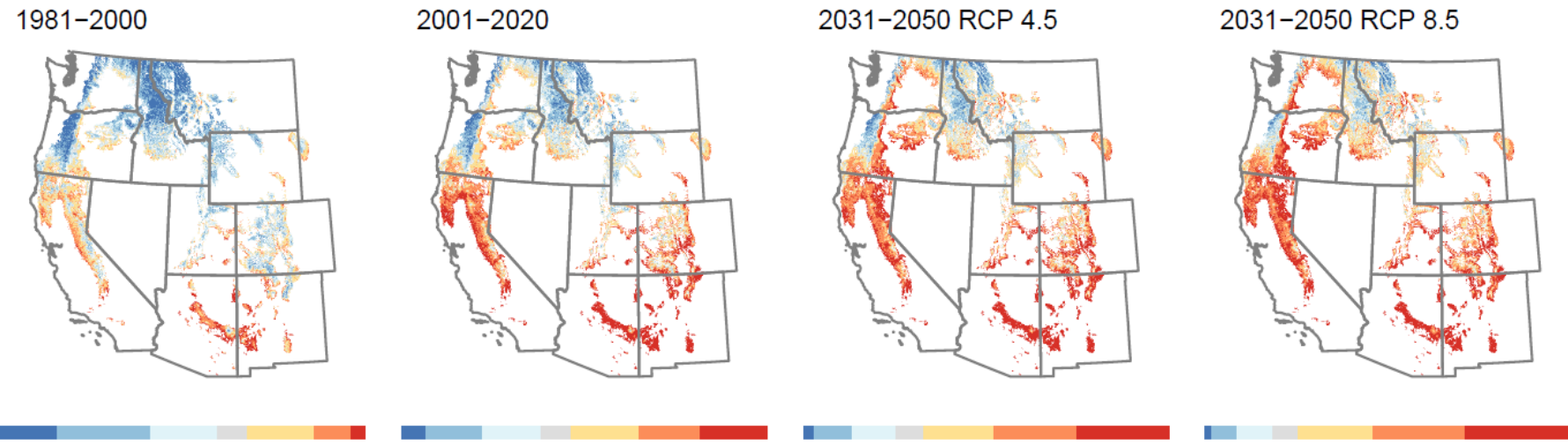


Post-fire recruitment probability projections

A
Low-severity scenario



B
High-severity scenario



Post-fire recruitment probability web map

Considerations:

- 4-km climate data; 500-m heat load index
- Fire is patchy – but not in these projections
- Tool will include the ability to download raster data for a user specified area
- We will provide a link to a user guide soon
- White fir and grand fir will also be added



Breakout 1

For which decisions and how would you use this information?



Breakout 2

- What added functionality does the tool need to be useful for you?
 - Would you prefer to have future projections from 5 individual climate models rather than the mean?
 - Are there other severity or time since fire scenarios that would be helpful to include?
- How could we improve the ease of use?



THANK YOU!

Acknowledgements

Collaborators: Marcos Robles, Kerry B. Kemp, Philip E. Higuera, Teresa Chapman, Kerry L. Metlen, Jamie L. Peeler, Kyle C Rodman, Travis Woolley, Robert N. Addington, Brian J. Buma, C. Alina Cansler, Michael J. Case, Brandon M. Collins, Jonathan D. Coop, Solomon Z. Dobrowski, Nathan S Gill, Collin Haffey, Lucas B. Harris, Brian J. Harvey, Ryan D. Haugo, Matthew D. Hurteau, Dominik Kulakowski, Caitlin E. Littlefield, Lisa McCauley, Nicholas Povak, Kristen L. Shive, Edward Smith, Jens Stevens, Camille S. Stevens-Rumann, Alan H. Taylor, Alan J. Tepley, Derek J. N. Young, Robert A. Andrus, Mike A. Battaglia, Julia K. Berkey, Sebastian U. Busby, Amanda Carlson, Marin Chambers, Erich Kyle Dodson, Daniel C. Donato, William M. Downing, Paula J. Fornwalt, Joshua S. Halofsk, Ashley Hoffman, Andres Holz, Jose M. Iniguez, Meg A. Krawchuk, Mark R. Kreider, Andrew J. Larson, Garrett W. Meigs, John Paul Roccaforte, Monica T. Rother, Hugh Safford, Michael Schaedel, Jason Sibold, Megan Singleton, Monica G. Turner, Alexandra K. Urza, Kyra D. Wolf, Larissa Yocom, Joseph B. Fontaine, John Campbell

Thank you!

Jane Wolken, Bill Travis, Dawn Umpleby, and others at NC CASC. Kyle Rodman for sharing code.

Funding:

The Nature Conservancy

North Central Climate Adaptation Science Center (NC CASC; USGS)

The Nature
Conservancy



North Central
Climate Adaptation
Science Center

