

Impact of a century of fire suppression

Small Douglas fir (fire intolerant)

Large Ponderosa pine (fire tolerant)

Buildup of vegetation in vertical direction ("ladder fuels")



Untreated stand conducive to high-severity fire

Buildup of vegetation in horizontal direction



Homogenous fuels due in part to fire suppression



Treated stand

Large trees retained

Pile was burned

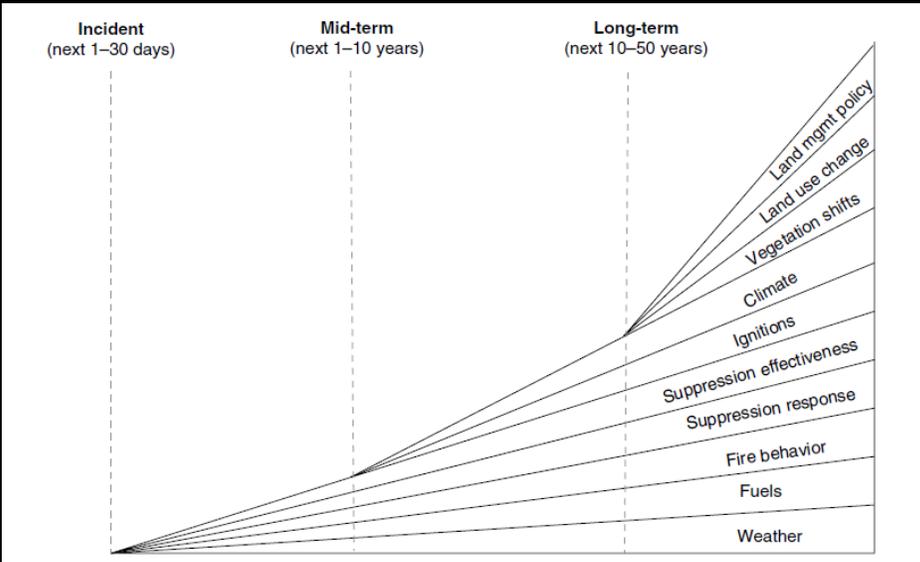


Landscape diversity slows fire

Meadow interspersed with aspen and recent burned area

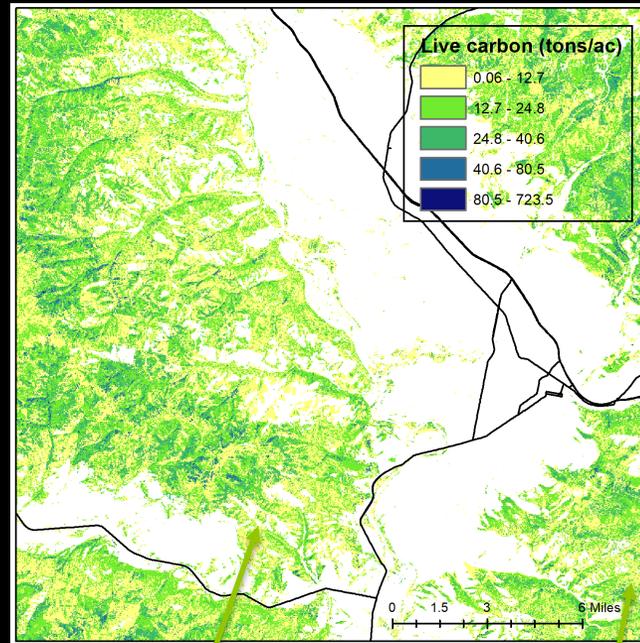


Factors driving uncertainty in fire

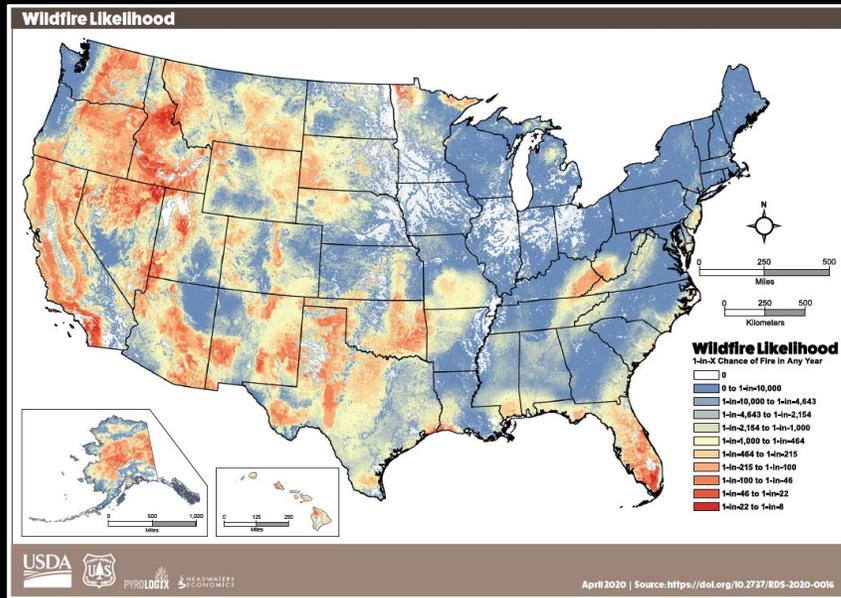
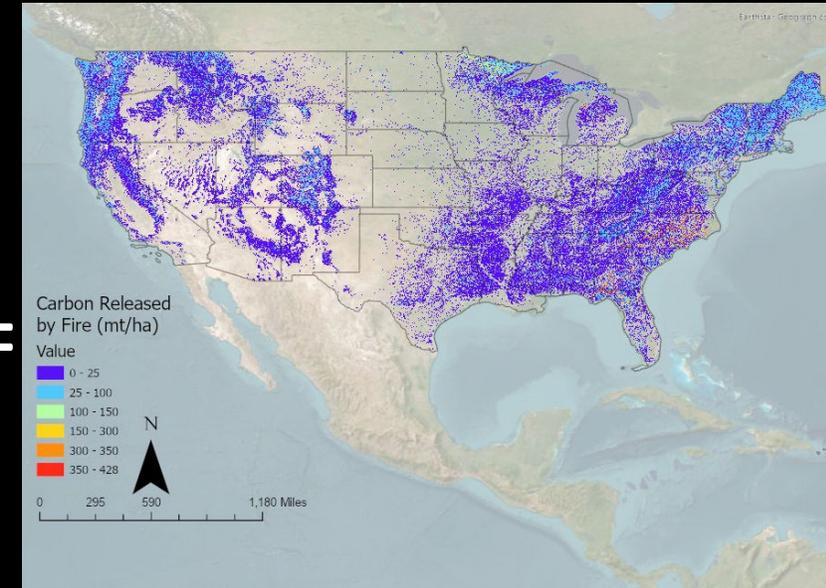


Risk to forest carbon and GHG emissions from fire

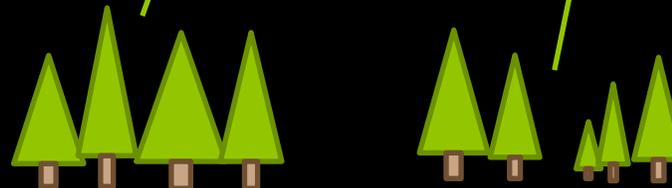
Carbon from TreeMap and FuelMap dataset



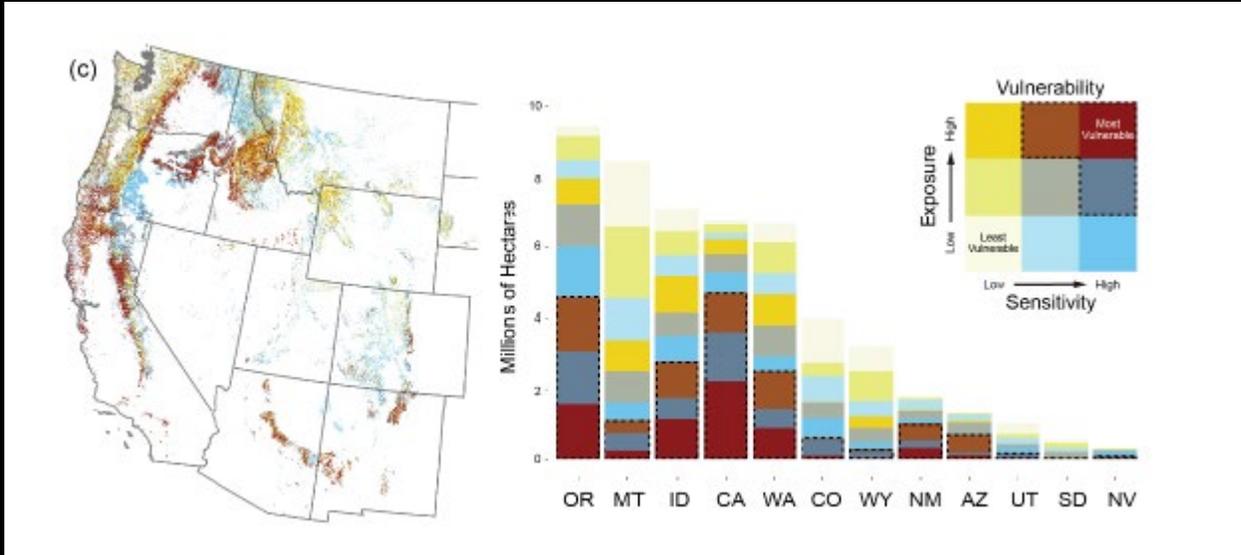
Estimated emissions from litter, duff, downed woody debris and standing trees for 20' flame length



Fire likelihood from FSim simulation modeling (270m resolution)



Vulnerability of forest carbon to fire

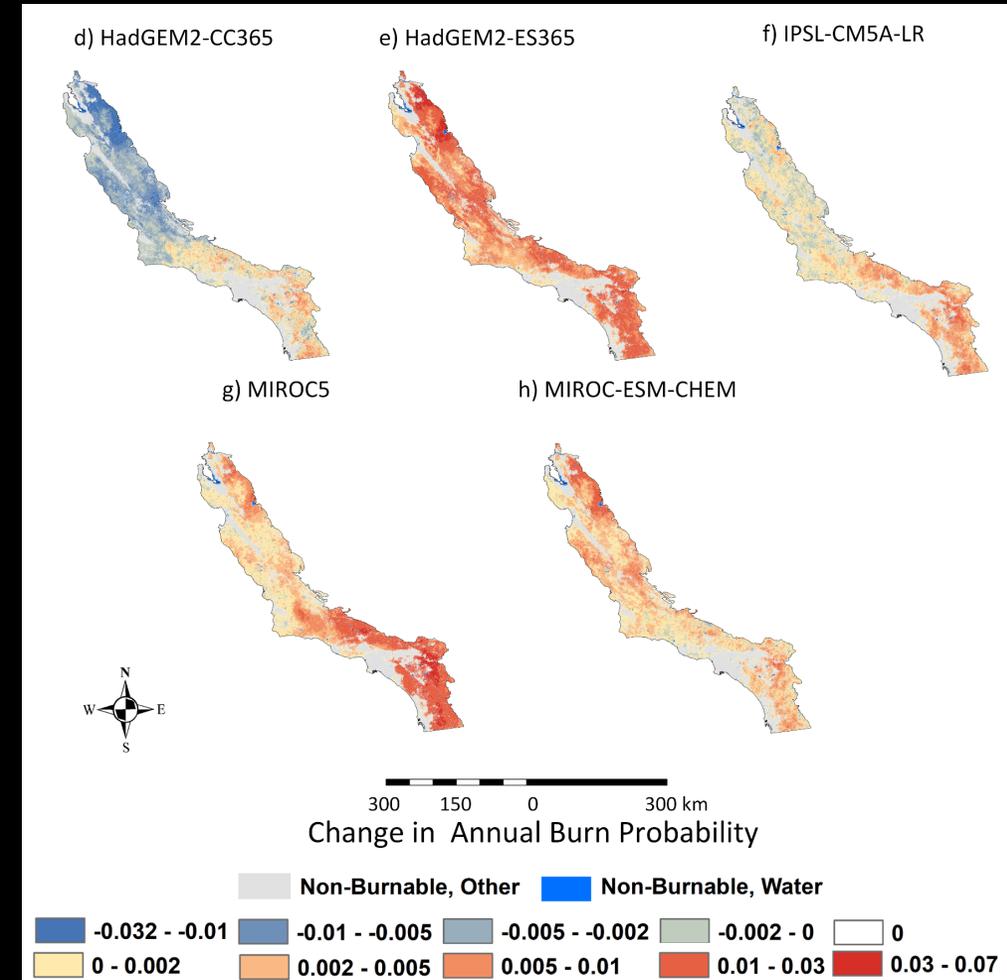


Prescribed fire ignited by Forest Service outside Missoula Montana being used to restore forest to a resilient state

Contact: Dr. Karin Riley, Karin.I.riley@usda.gov

Thanks collaborators! Rachel Houtman, Isaac Grenfell, Mark Finney, John Shaw, Jamie Peeler, Alex Dye, Peng Gao, John Kim, Lisa McCauley, Kerry Metlen, Travis Wooley, Kim Davis, Joe Scott, Karen Short, Greg Dillon, Kevin Vogler, etc.!!!!!!

Resilient forests needed in the face of climate change



Probability of fire varies across future climate projections in S. California