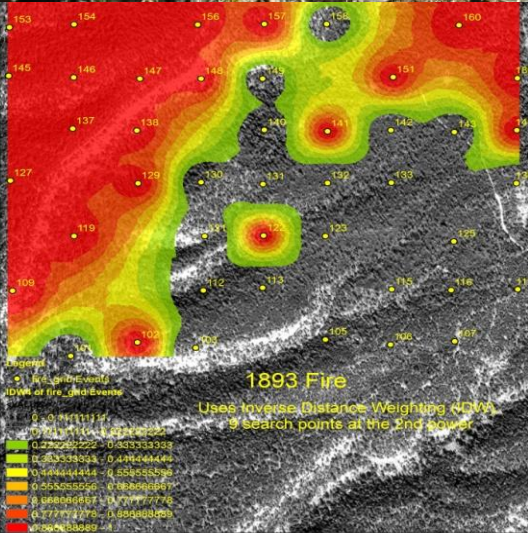
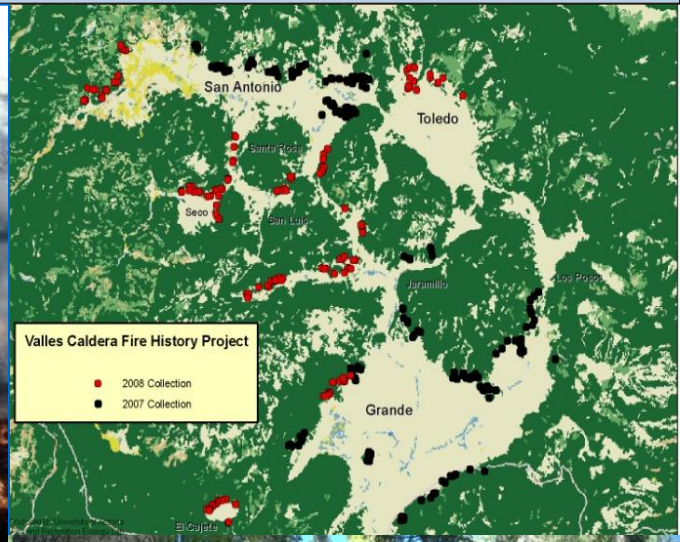


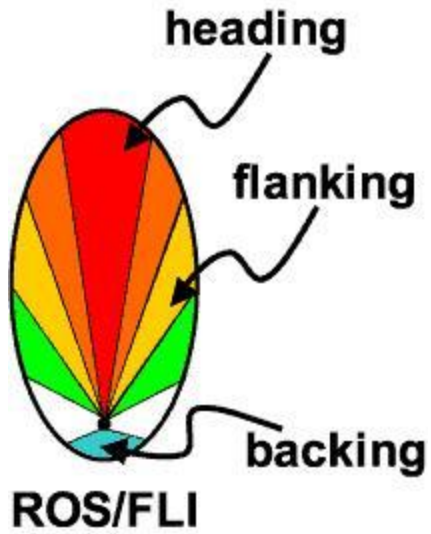
Understanding fire as an Earth system process



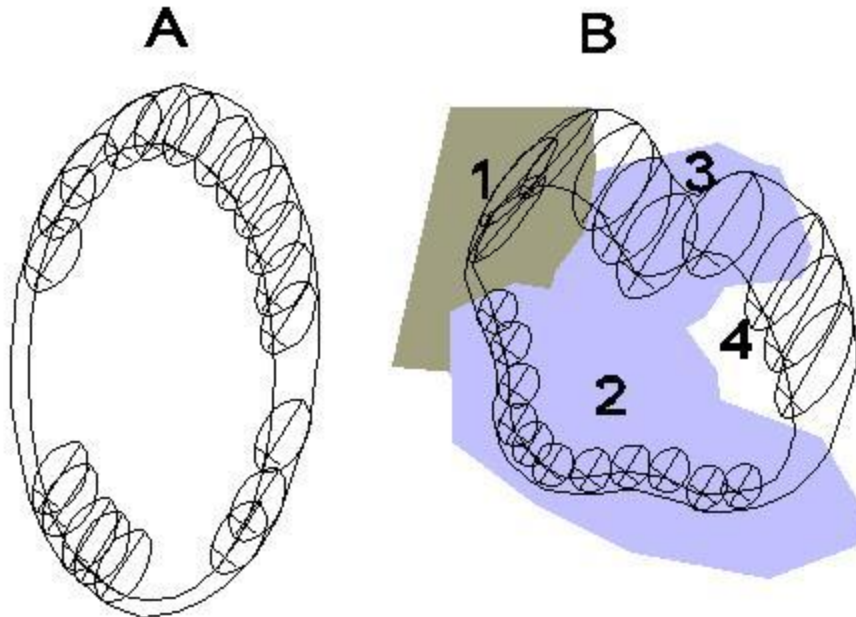
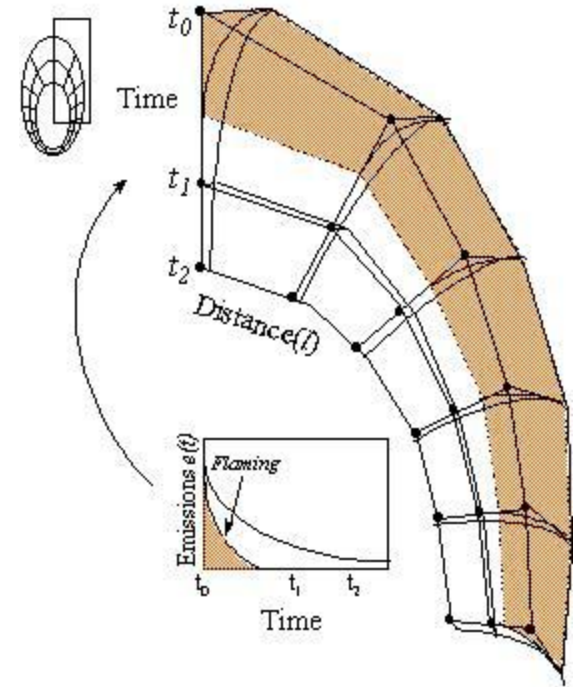
Some things you will learn this semester:

- Fire as a physical and chemical process
- Fire behavior
- Fire ecology
- Fire regimes of the world
- Fire management
- Fire in a changing world

Fire behavior



<http://firelab.org/>



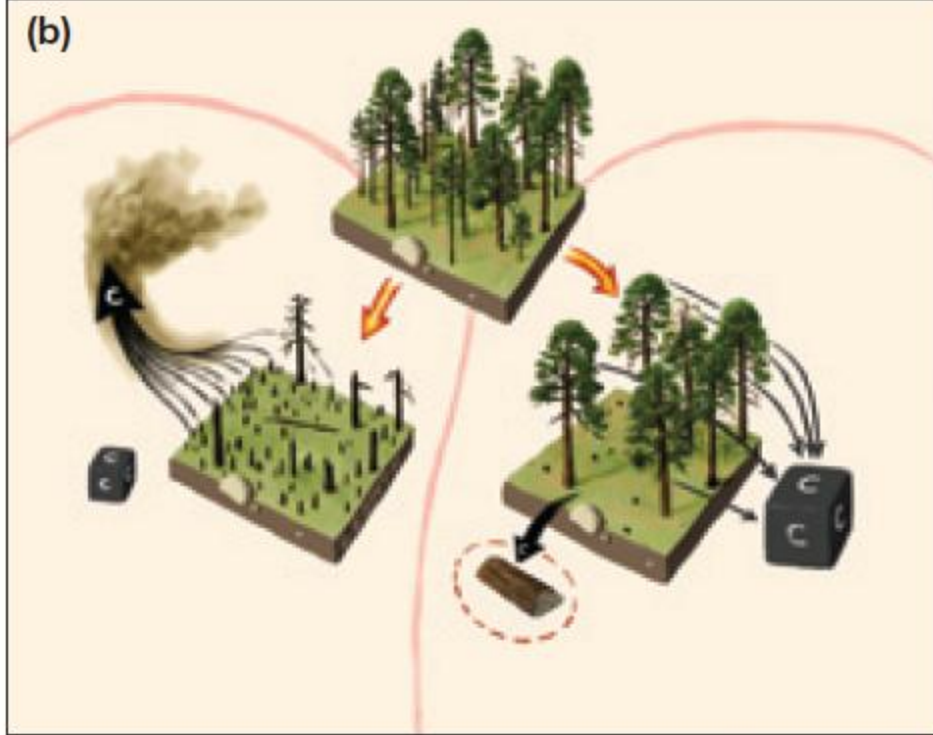
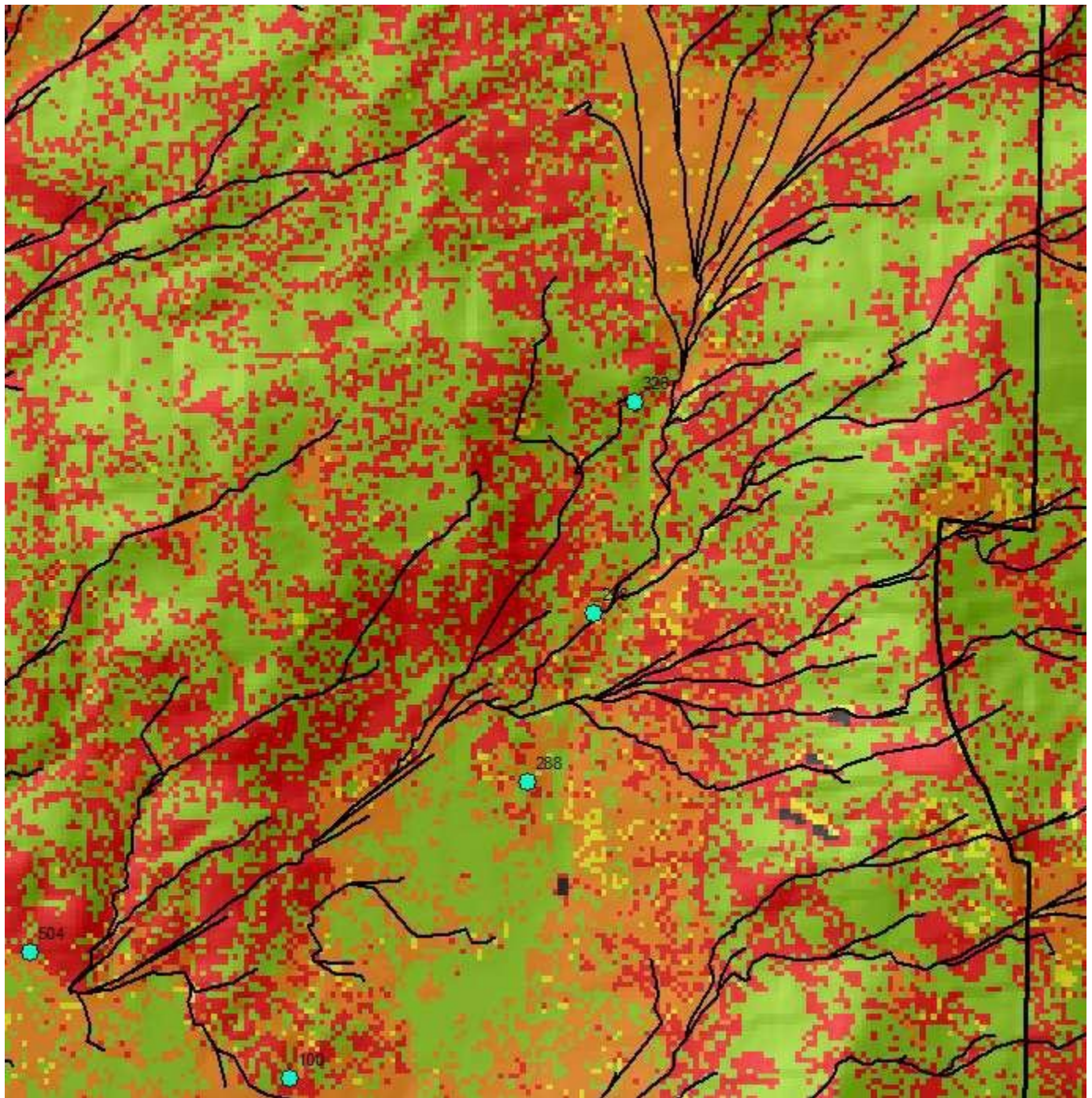


Figure 1. (a) Two options for a given forest stand and the resultant tree survivorship following a wildfire event. (b) The carbon accounting consequences of two possible options for a given forest stand and the results following a wildfire event. The cubes represent the amount of carbon remaining in the ecosystem after wildfire.



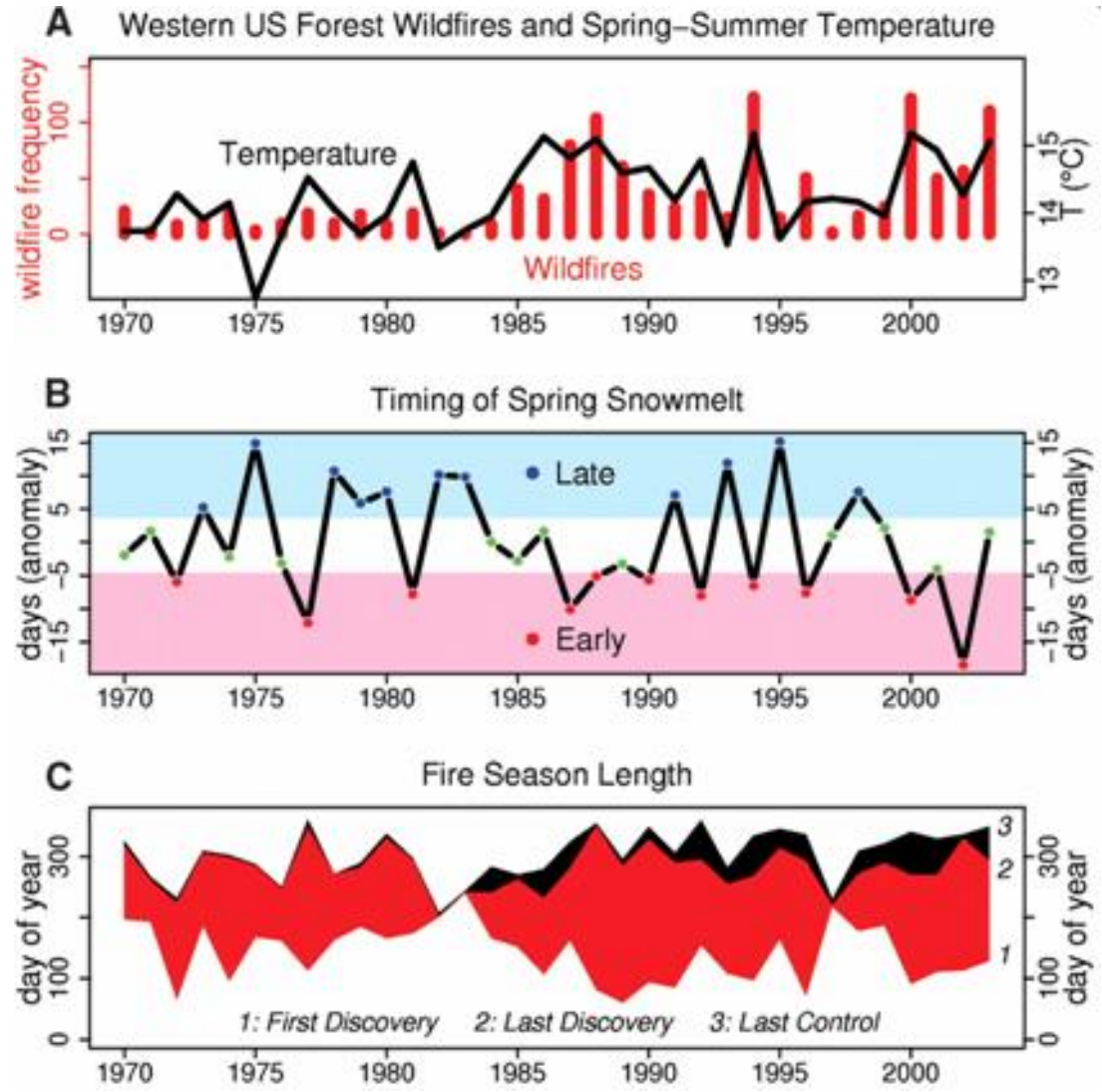
Fire spread modeling shows how fire spreads across landscapes, and appears to confirm the findings from fire scar analysis

J. Conner, MS Thesis, University of Arizona

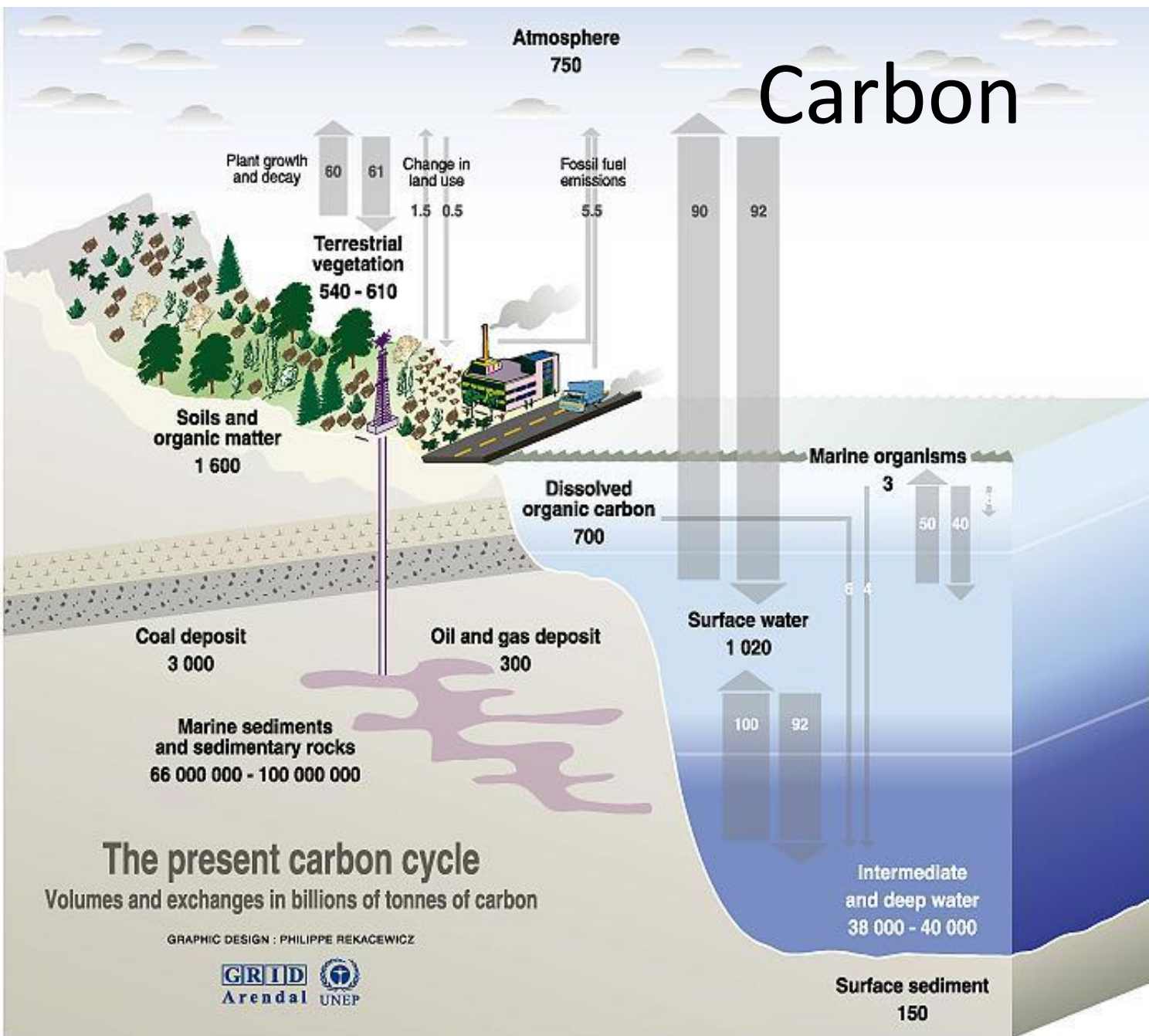


Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity

A. L. Westerling, H. G. Hidalgo, D. R. Cayan, T. W. Swetnam



Carbon

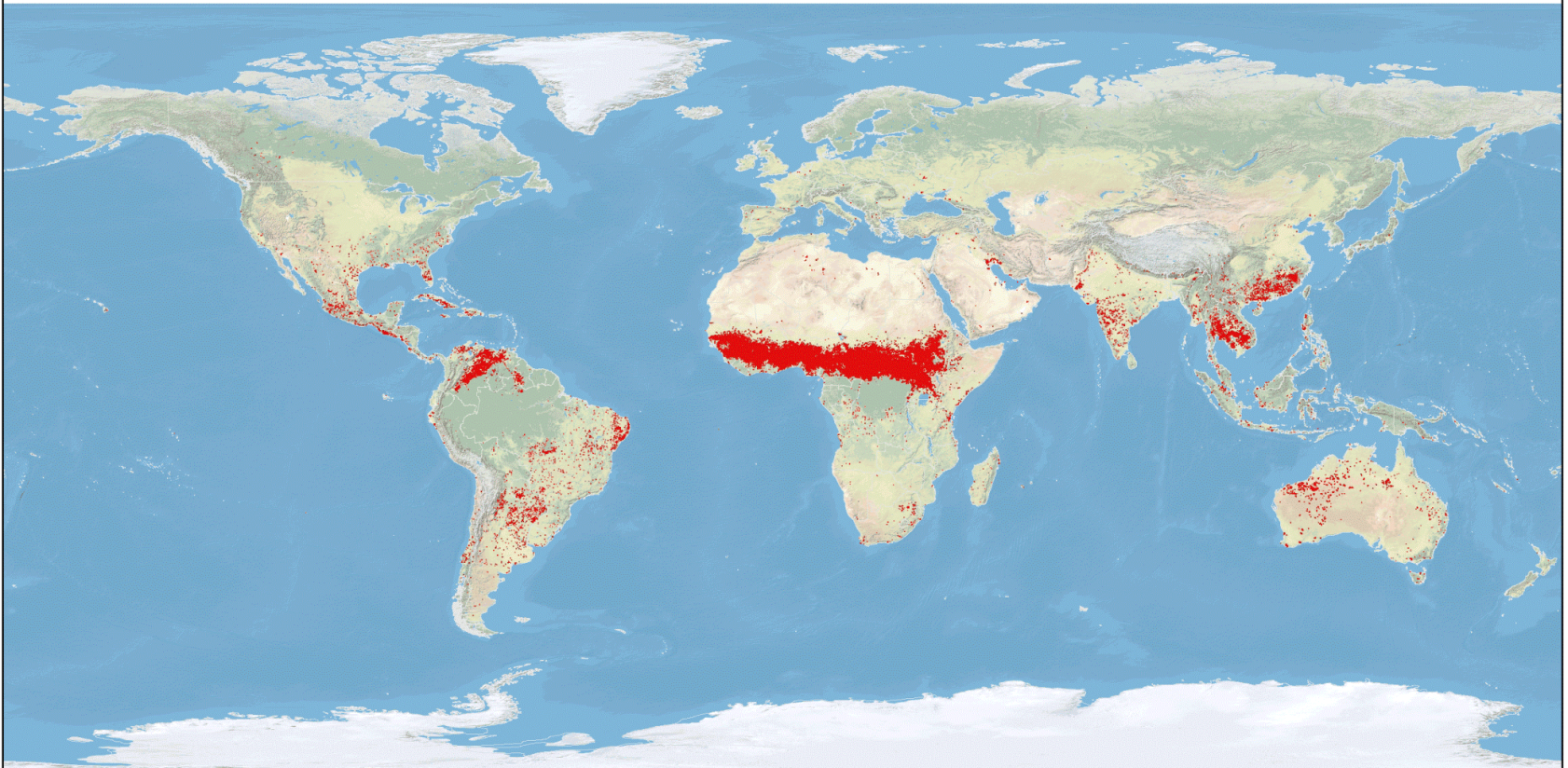


Sources: Center for climatic research, Institute for environmental studies, university of Wisconsin at Madison; Okanagan university college in Canada, Department of geography; World Watch, November-December 1998; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996.



Why Study Fire?

MODIS Rapid Response Active Fire Detections for 2008



January February March April May June July August September October November December



Active fires, shown in red, are detected using MODIS data from the Terra Satellite.
Source: MODIS Rapid Response <http://rapidfire.sci.gsfc.nasa.gov/>
Fire Information for Resource Management System (FIRMS)
<http://maps.geog.umd.edu>

http://maps.geog.umd.edu/firms/products/animation/2003_animation.gif

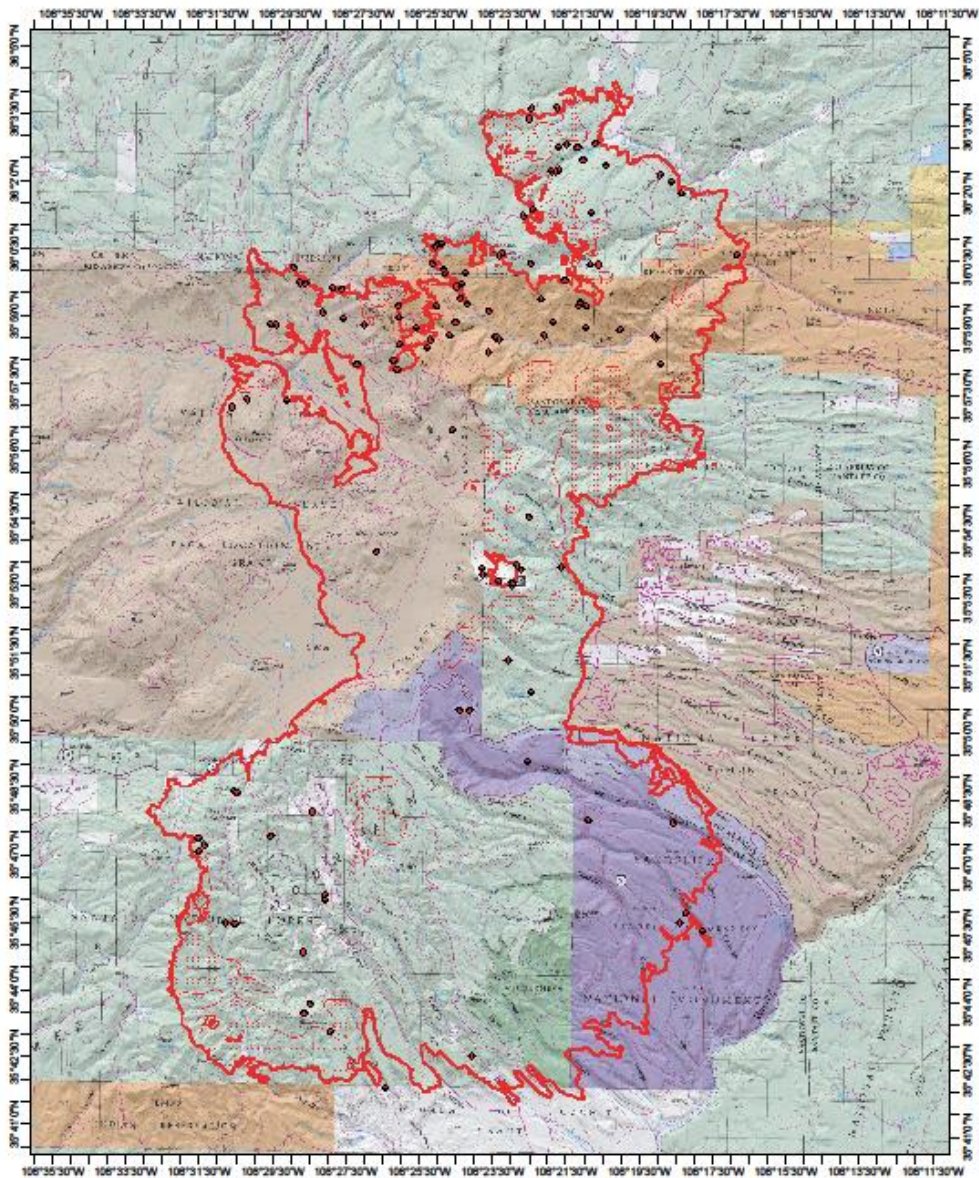
http://maps.geog.umd.edu/firms/products/animation/2008_animation.gif



Joseph Lycett 1820

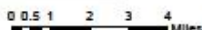
Image Source:
[http://image12.webshots.com/
13/5/24/81/149352481nkoqGf
_fs.jpg](http://image12.webshots.com/13/5/24/81/149352481nkoqGf_fs.jpg)





Las Conchas Fire

Infrared Map 07/09/2011
 Imagery Date: 07/08/2011
 Time: 2243 MDT
 Interpreted Total Acres: 142,250
 IRIN: Brian Banks



- Isolated Heat Sources
- ▨ Scattered Heat
- ▨ Intense Heat
- ▭ Heat Perimeter

LARGEST FIRES THIS SEASON TO DATE:

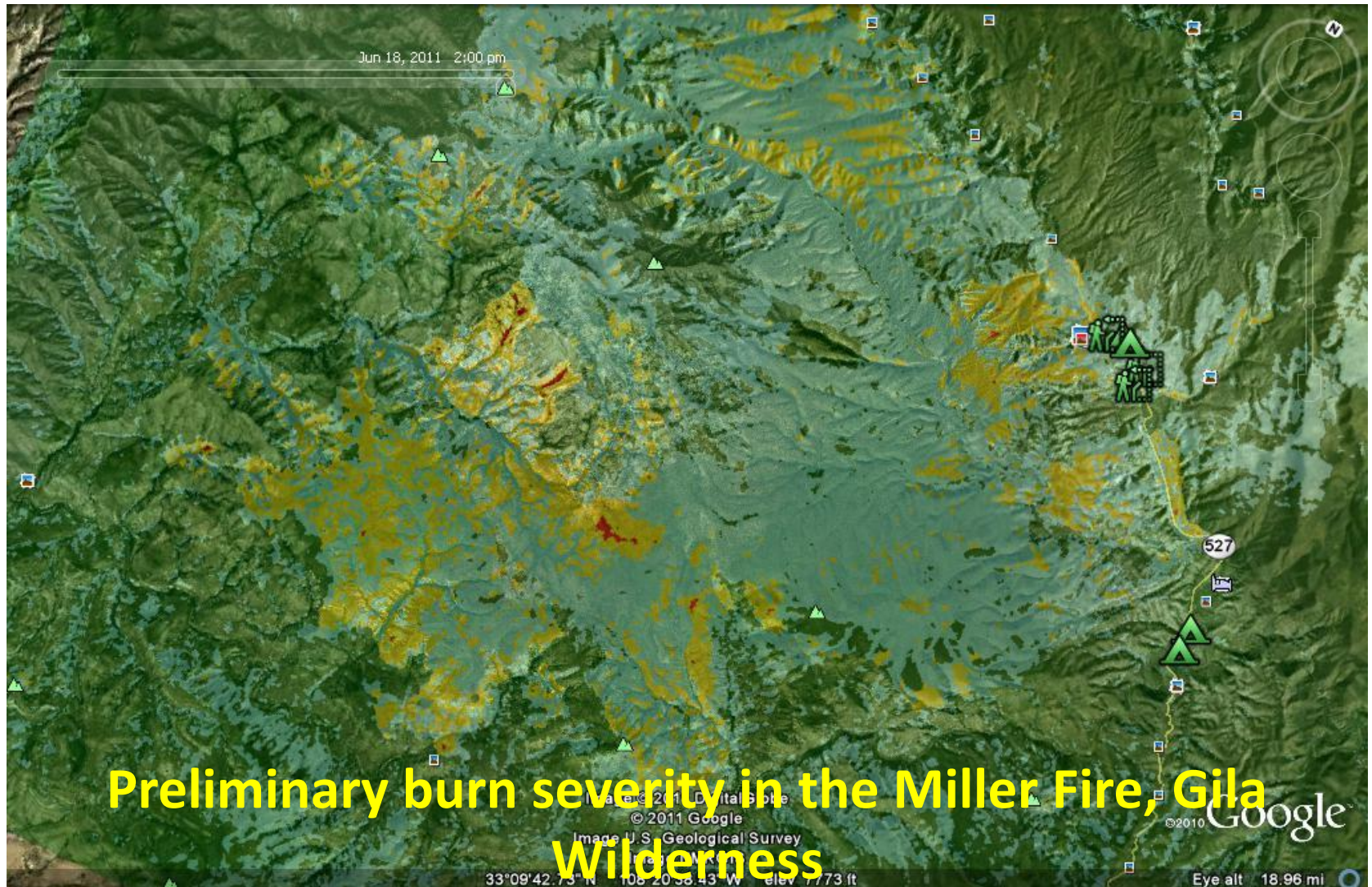
- Long Draw (OR), 558,000 ac
- Holloway (NV), 461,000 ac
- Whitewater-Baldy Complex (NM), 298,000 ac
- Rush (CA), 271,000 ac
- Ash Creek (MT), 250,000 ac
- Kinyon Road (ID), 235,000 ac
- Rosebud Complex (MT), 171,000 ac...

COLORADO 2012: 35,000 PEOPLE
EVACUATED FROM COMMUNITIES

ELLENSBURG, WASHINGTON – 200 HOMES AND
BUSINESSES TO DATE



Miller Fire: An important reference? What happens when fire is allowed to stay in the system?



Your thoughts?