

A photograph of a forest fire. In the foreground, a yellow fire hose snakes across a dirt path. The ground is covered in charred wood and ash. In the background, tall trees are visible, some with smoke rising from their bases. The sky is hazy and orange from the fire.

Imagining our Future with Fire in the Sierra Nevada

How did we get here? Where are we going?

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University of California Cooperative Extension

May 17th, 2019

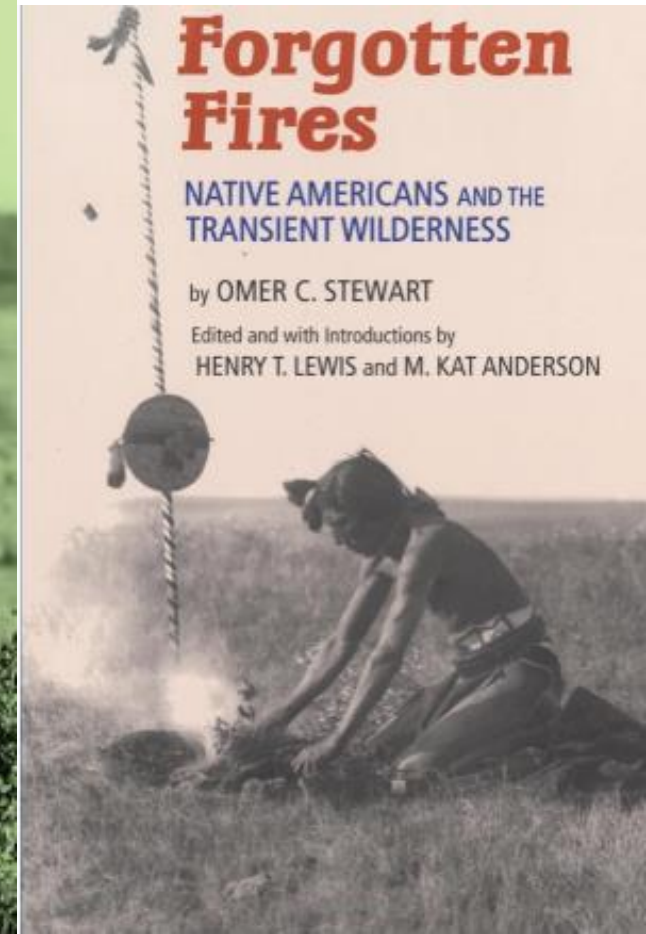
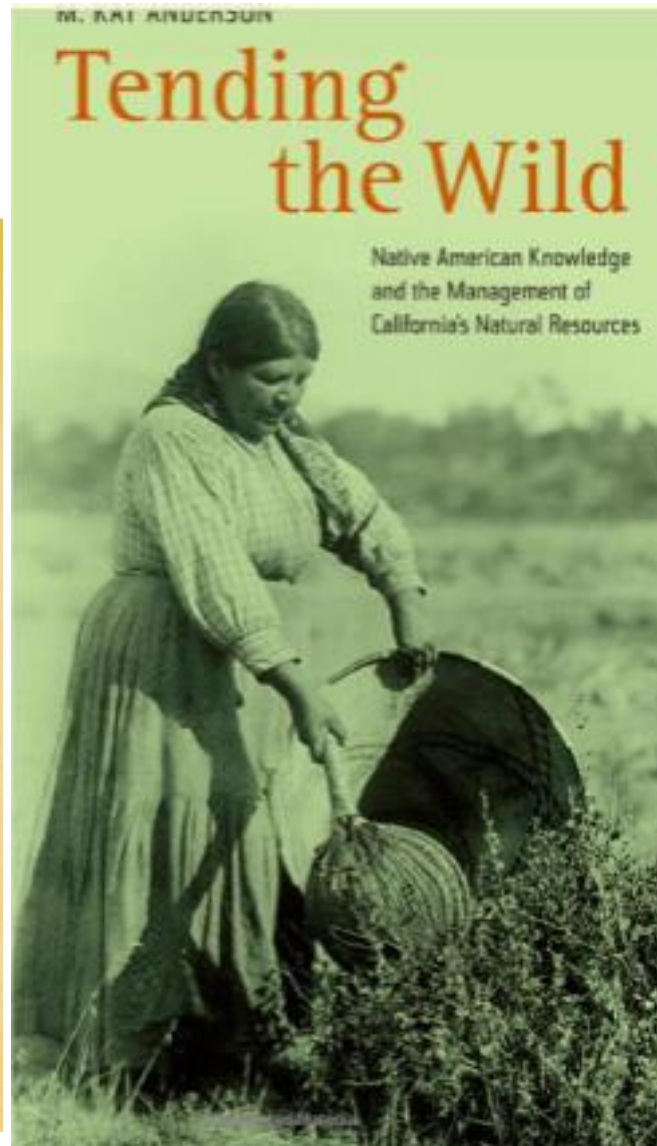
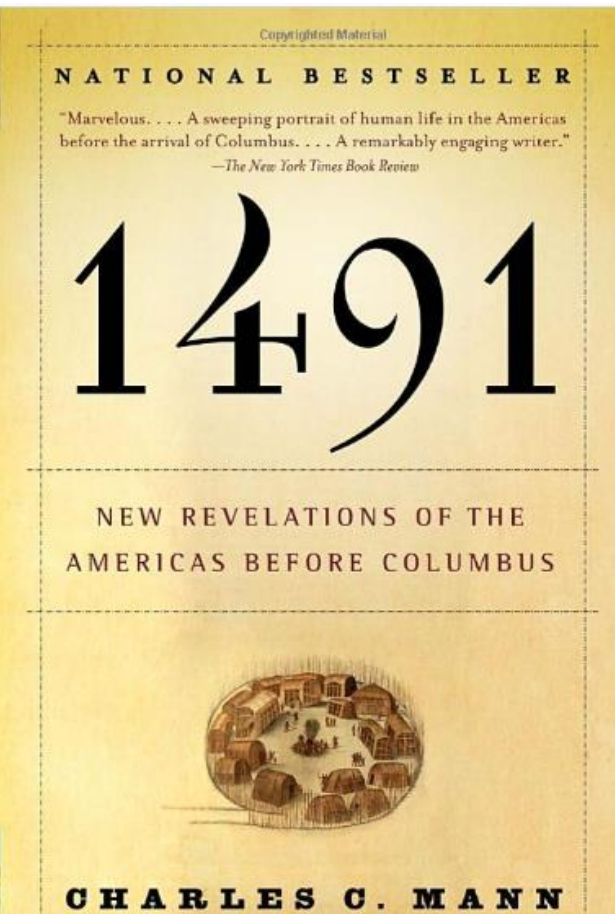
Current fire management has unintended effects

- Sierra forests are adapted to frequent low intensity from native starts and lightning
- Fire suppression and halt in prescribed fire have led to increased fuels, poor forest health and more destructive wildfires
- Reintroducing 'good fire' in forests is needed as part of the solution
- Private landowners have a large role to play in Rx fire solution



Native burning in California

Ethnographic interviews with native American tribes

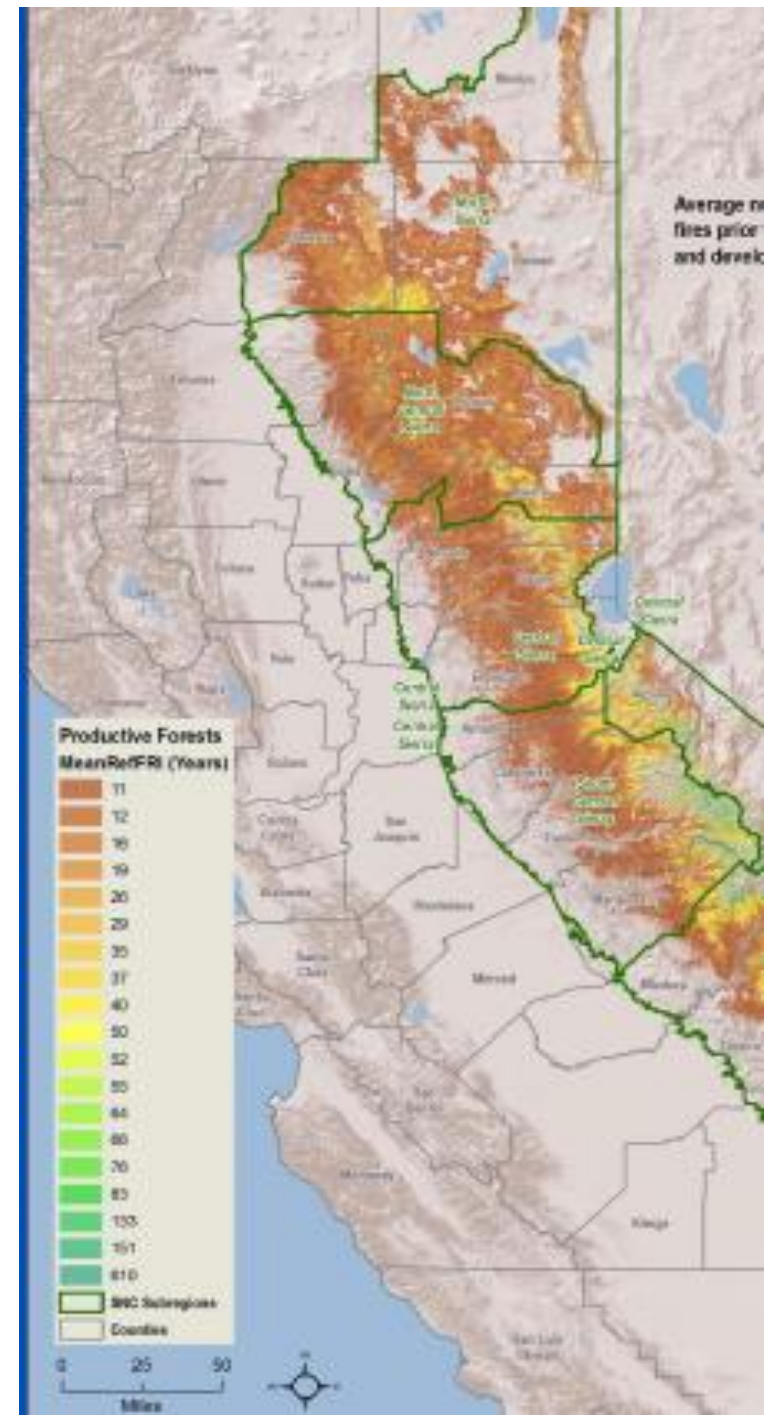


Dendrochronology (tree ring) studies - Past fire frequency can be determined from the years between fire scars on a single tree or on several trees in an area

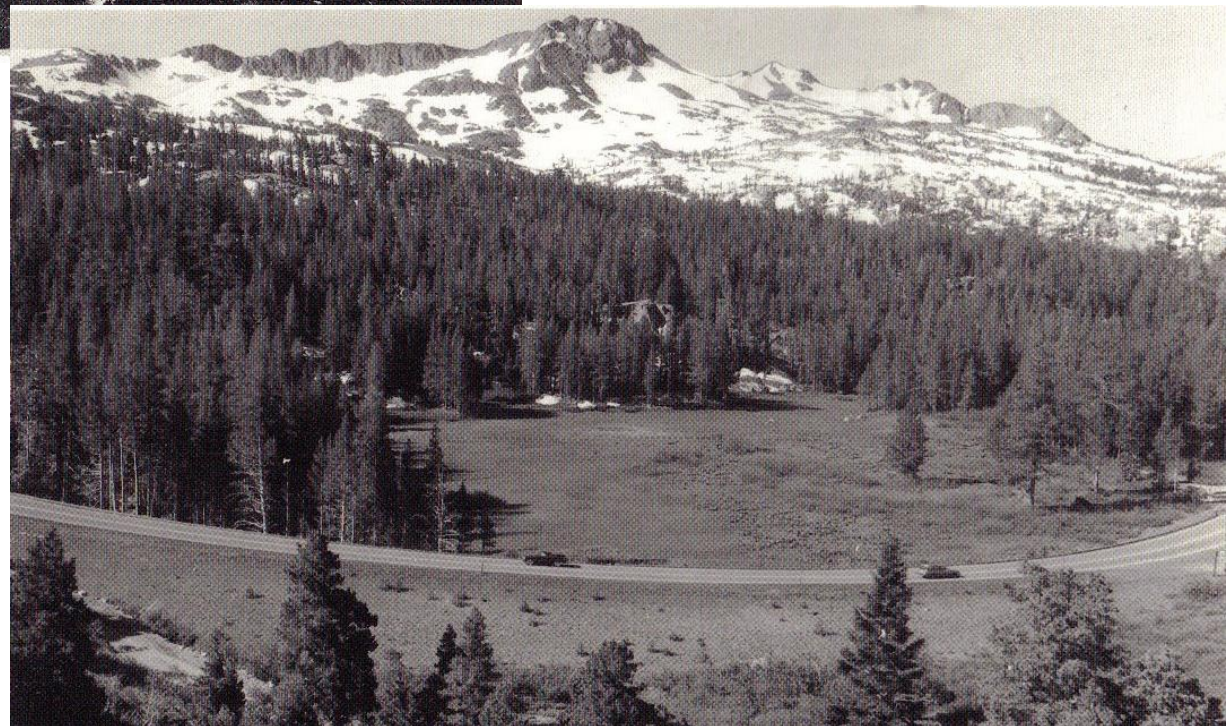
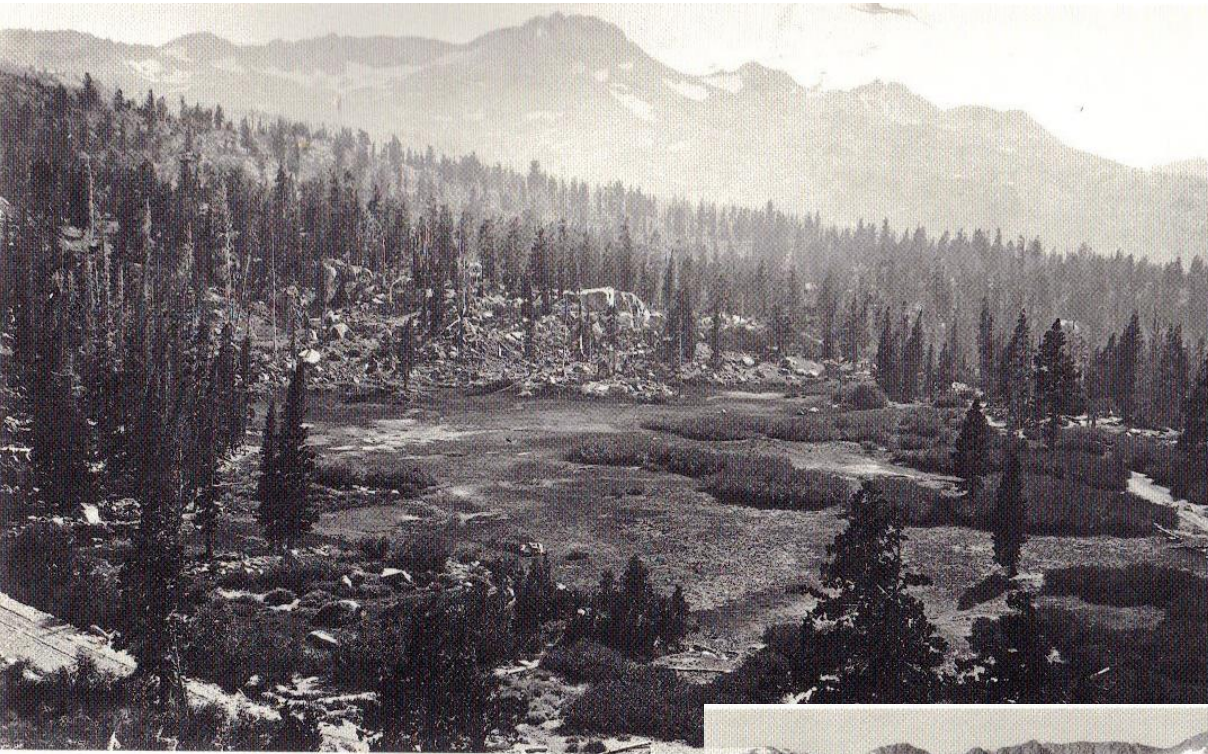


Fire Return Interval

- Ponderosa 5 – 12 years
- Mixed conifer 8 - 20 years
- 4.4 -11.9 million acres/ yr -5% - 12% of California's lands burned annually before settlement
- *“Of the hundreds of persons who visit the Pacific slope in California every summer to see the mountains, few see more than the immediate foreground and a haze of smoke which even the strongest glass is unable to penetrate.”* -- C.H. Merriam 1898, Chief, US. Biological Survey



Consequences of Fire Suppression

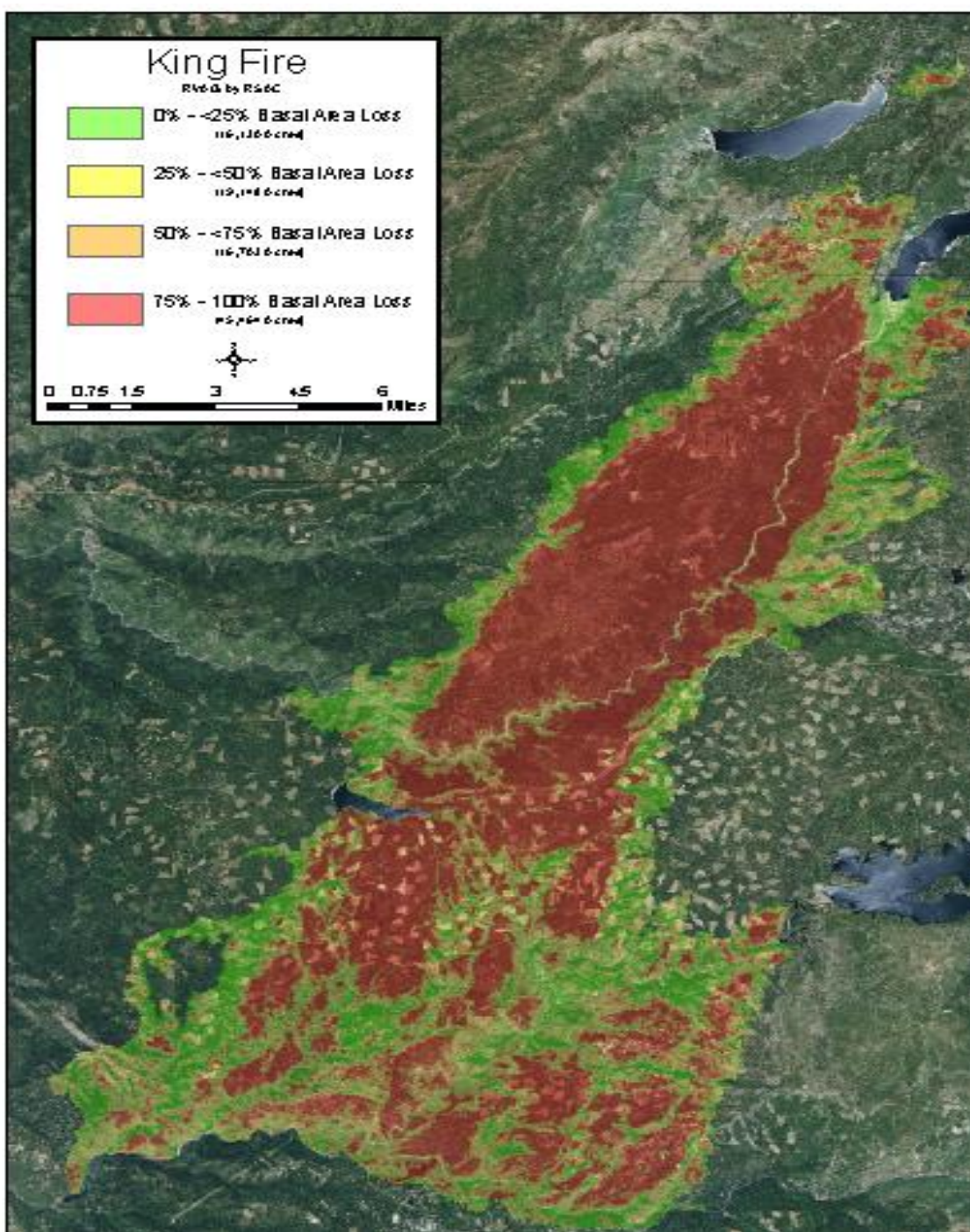


- Carson Pass, Alpine County in 1879 (top) and 1993 (bottom).
- Source: Gruel 2001

Increase in high severity fires

- Forests crowded and unhealthy
- Huge build up of fuels
- Fires now more likely to be high severity meaning most or all trees are killed





Size of high
severity
patches
unprecedented

- 35,000 acre patch in 2014 King Fire

Short history on fire suppression

- Begins 1905 with formation of the US Forest Service
- Big Blow Up of 1910 burned 5 million acres (Montana & Idaho), killed 79 firefighters - USFS decides to stress fire prevention and control fires as quickly as possible.
- Light burning controversy in CA – some continued to burn
 - Red River Lumber company near Lake Almanor used fire on 750,000 acres Walker family property
- 1924 USFS researchers concluded light burning was ineffective, impractical, and economically indefensible
- 1924 California State Board of Forestry adopted the policy of fire exclusion USFS adopted "no burn" policy.
- 1943, USFS allows exception in southeast for longleaf pine

- Arrived in California 1947 from Southeast
- Professor of forestry UC Berkeley - experience with Rx in long leaf pine
- Worked with CA ranchers to develop techniques for Rx fire to kill woody vegetation and promote grasses to increase grazing capacity

Dr. Harold Biswell



Range improvement burning

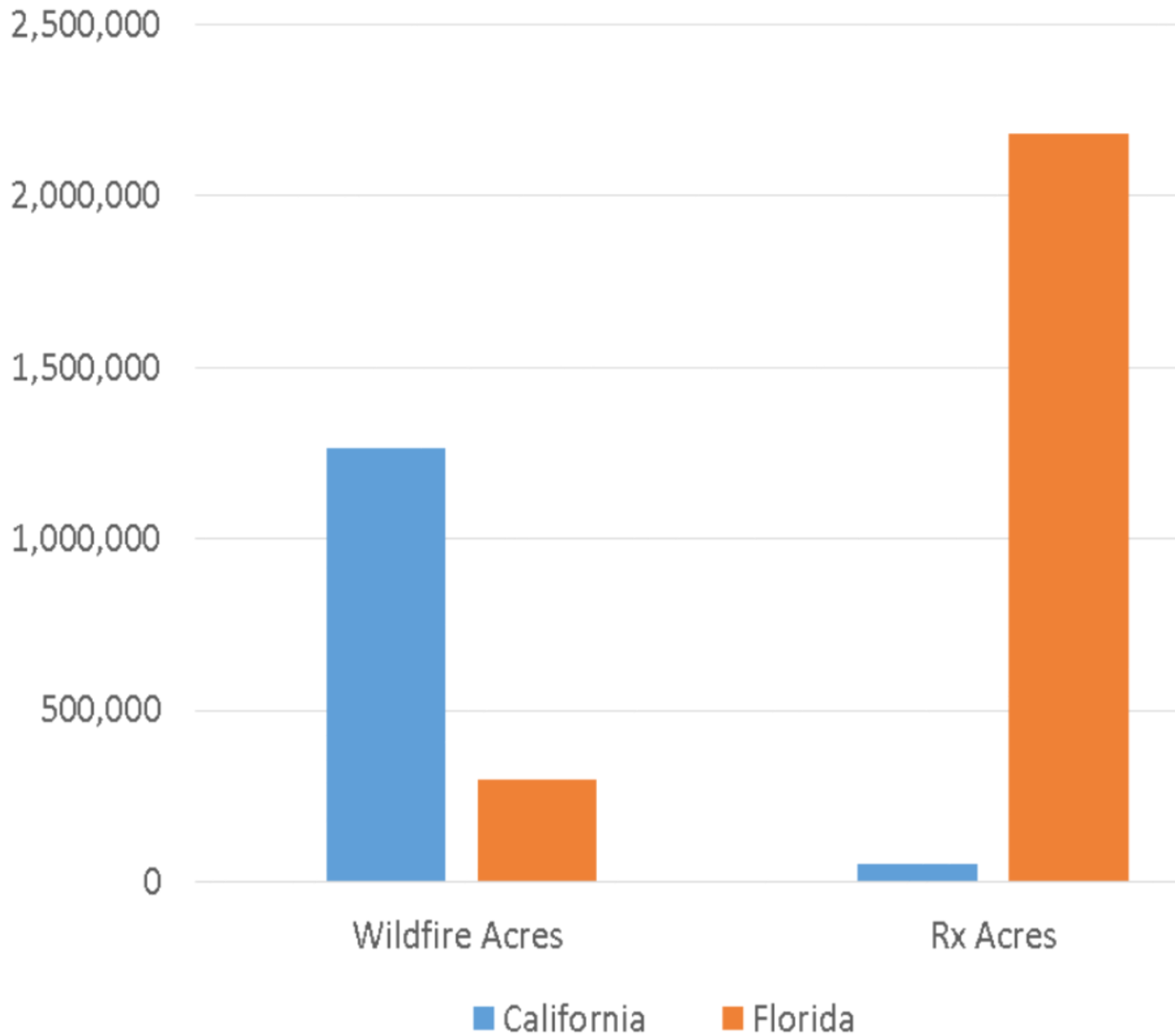
1945 first burning permits (CalFire) to conduct Rx fire

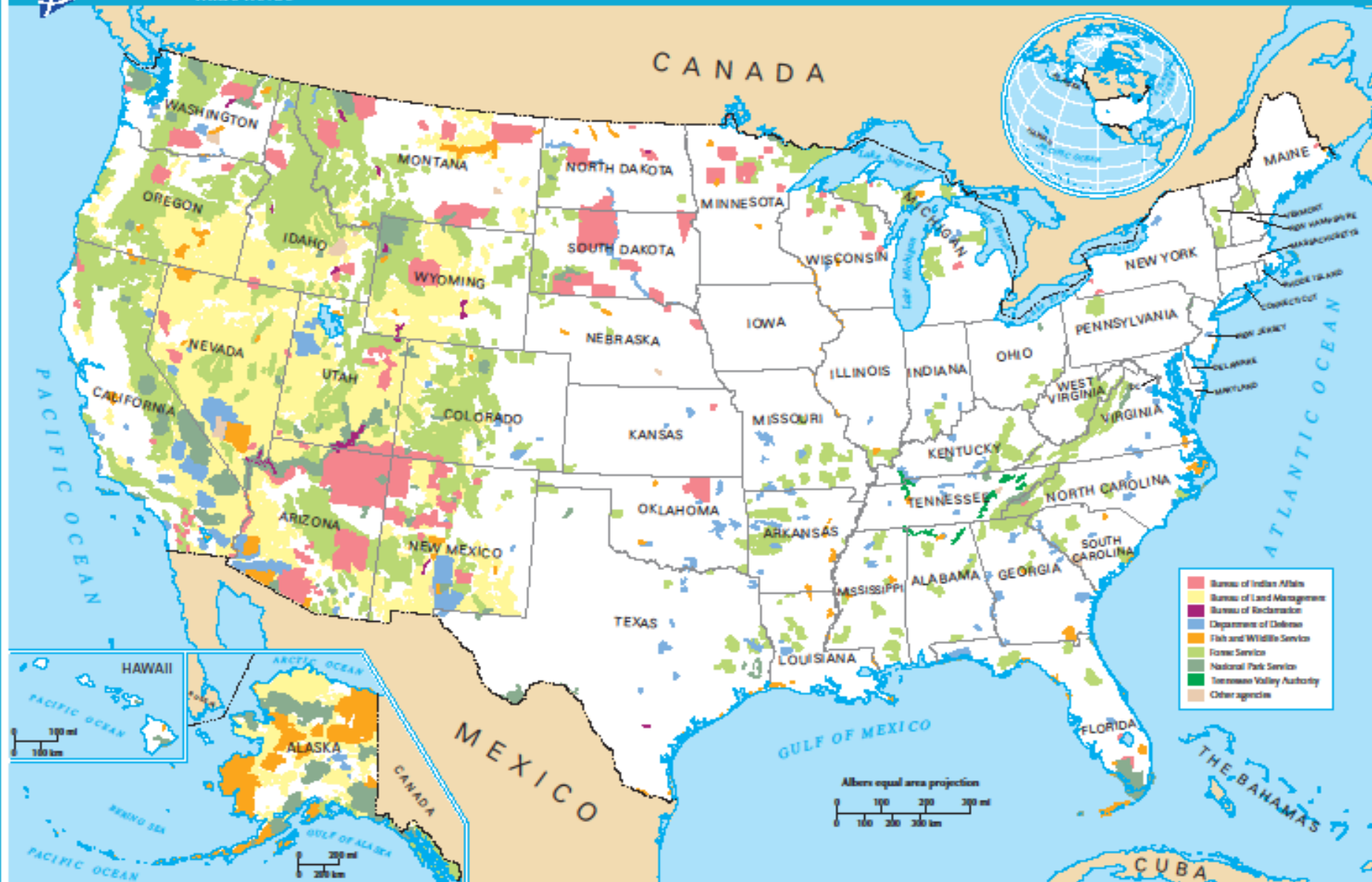
- Range burning reached peak in 1955 > 200,000 acres burned
- Then declined
 - more homes were built on adjacent wildlands and
 - ranchers were held liable for escape damage
- Still going strong in SE



van Wagtendonk, J. 1995. Dr. Biswell's Influence on the Development of Prescribed Burning in California. USDA Forest Service Gen. Tech. Rep. PSW-GTR-158.

Wildfire vs. Rx fire in California and Florida 2017





Private lands burning common elsewhere, why not here?

- Prescribed fire councils
 - Northern Ca
 - Southern Sierra
 - Central California
 - Bay area
- Prescribed fire Training Exchanges (TREXs)
 - Throughout state
- UC Rx fire outreach
- Legislative initiatives on Rx fire liability, certification, collaboration



October 2018 burn crew of landowners in October 2018 at Blodgett