

# Fire

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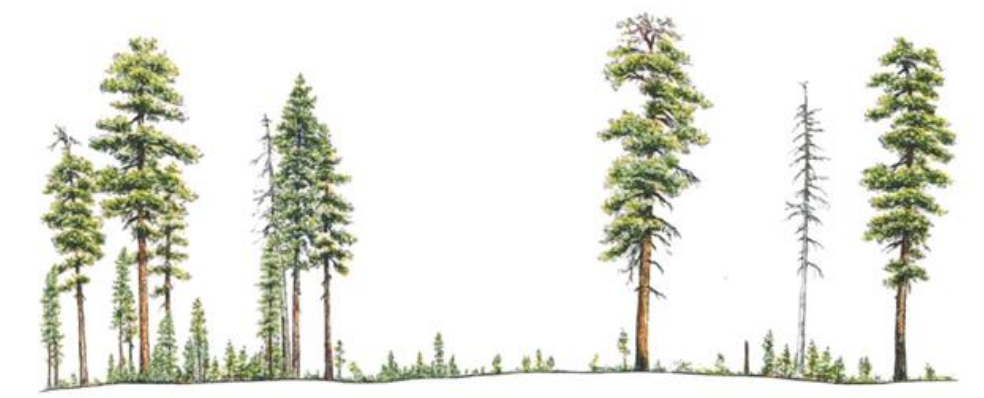
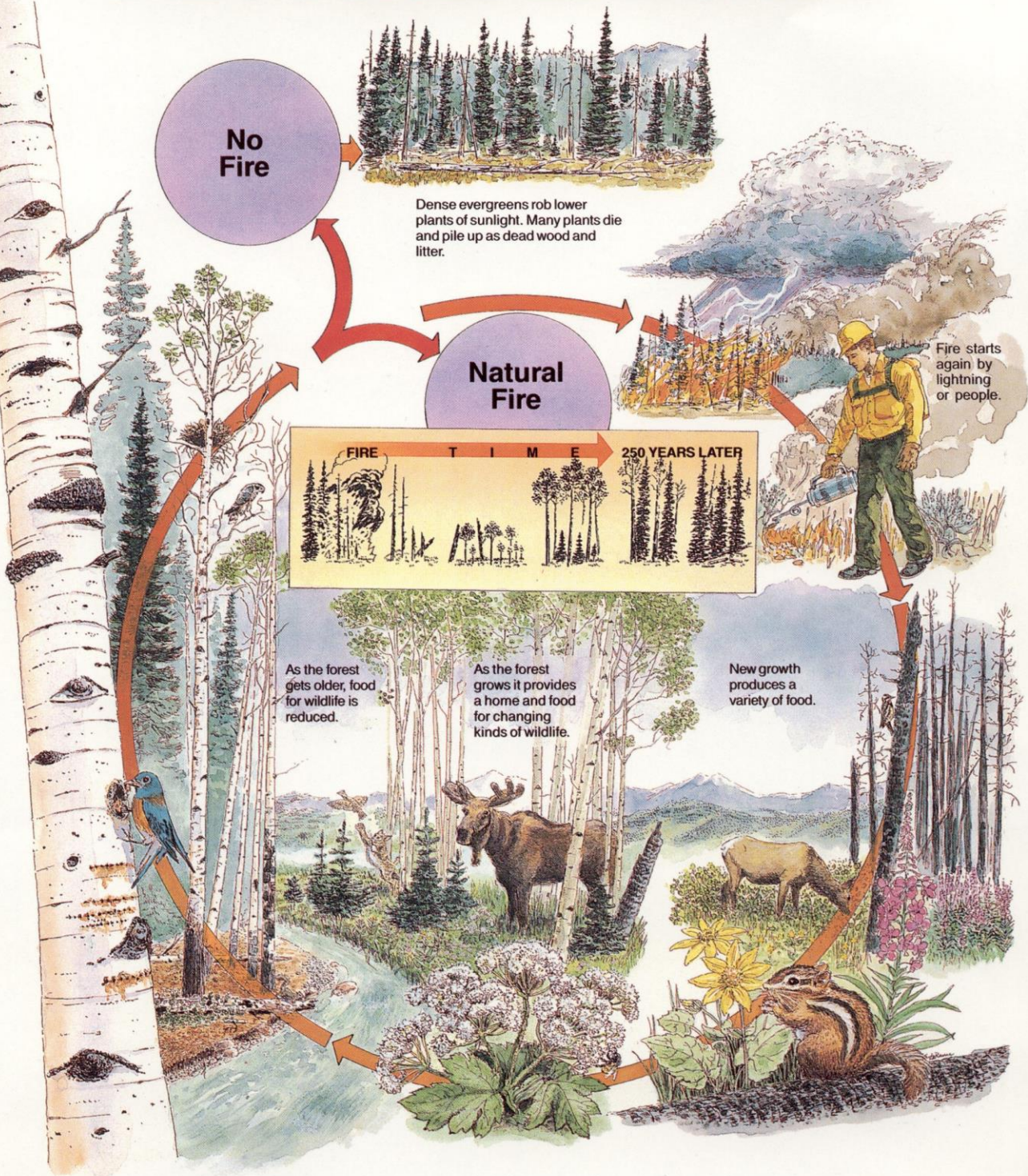


DELAWARE  
Nature  
SOCIETY

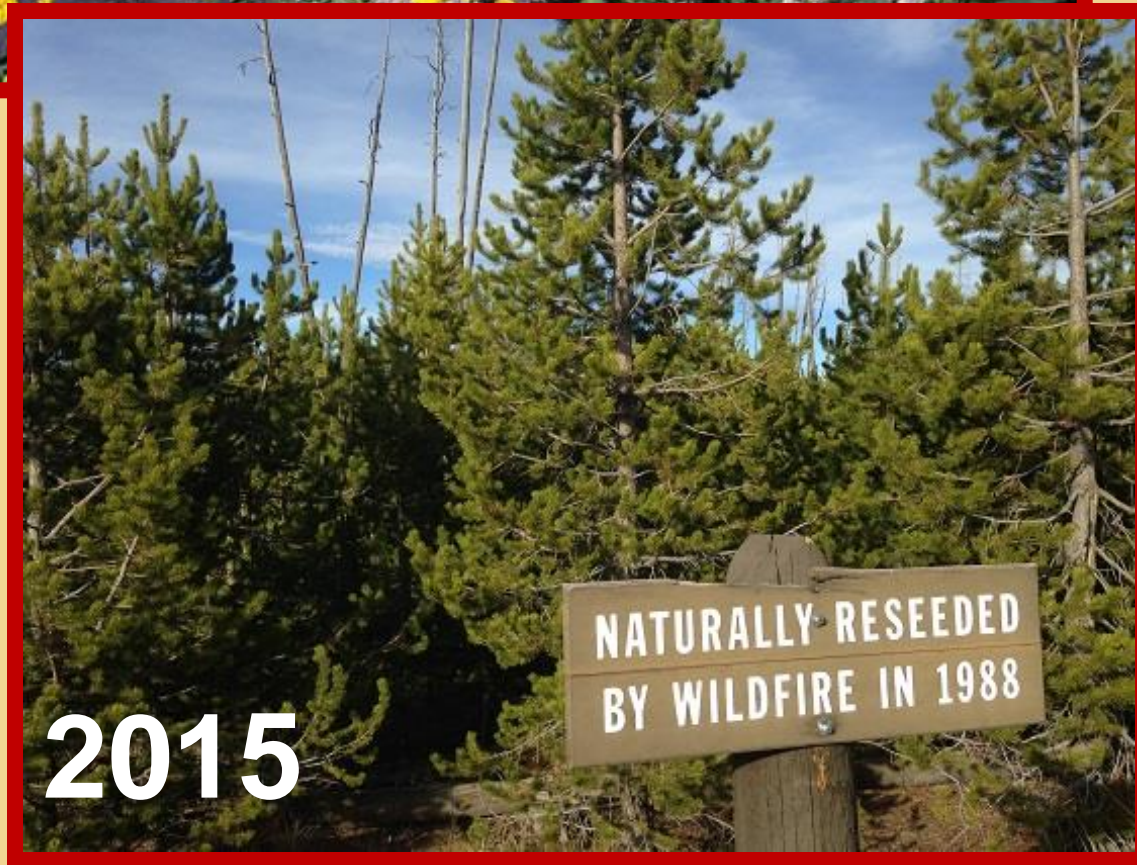


Abbott's  
Mill Nature  
Center

# Fire's Role in Nature



"When you try to change any single thing, you find it hitched to everything else in the universe." *John Muir*





**ONLY YOU**



**ONLY YOU CAN PREVENT WILDFIRES**



# PRESCRIBED FIRE



# ***Fire-adapted Trees and Ecosystems***



Adaptations to fire in longleaf pine

Grassy stage

Cone serotiny

Punctuated growth

Three images illustrating adaptations of longleaf pine to fire: a grassy stage, a young tree showing punctuated growth, and a large serotinous cone.

# Wildland Fire Types



**Ground**



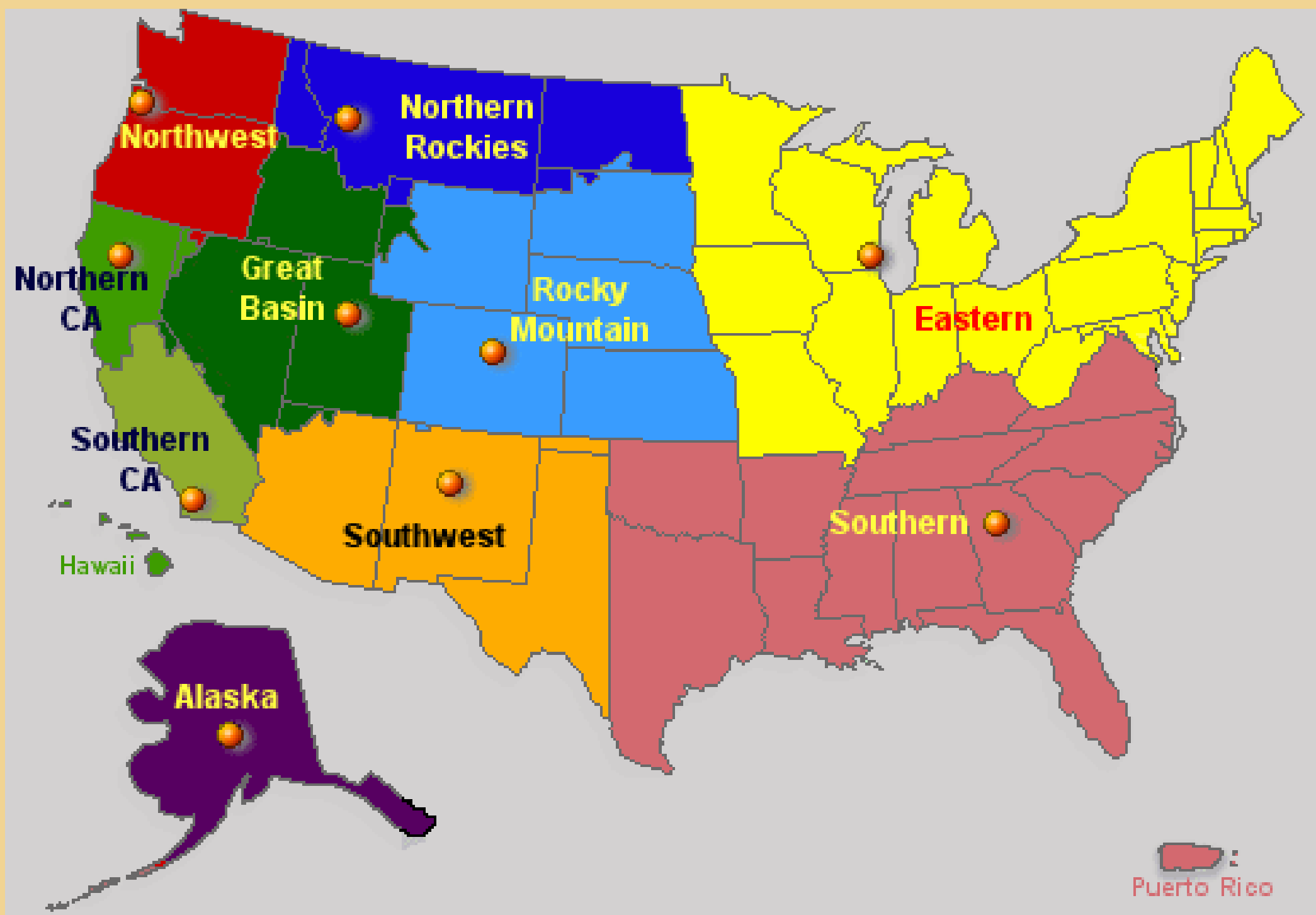
**Surface**



**Crown**



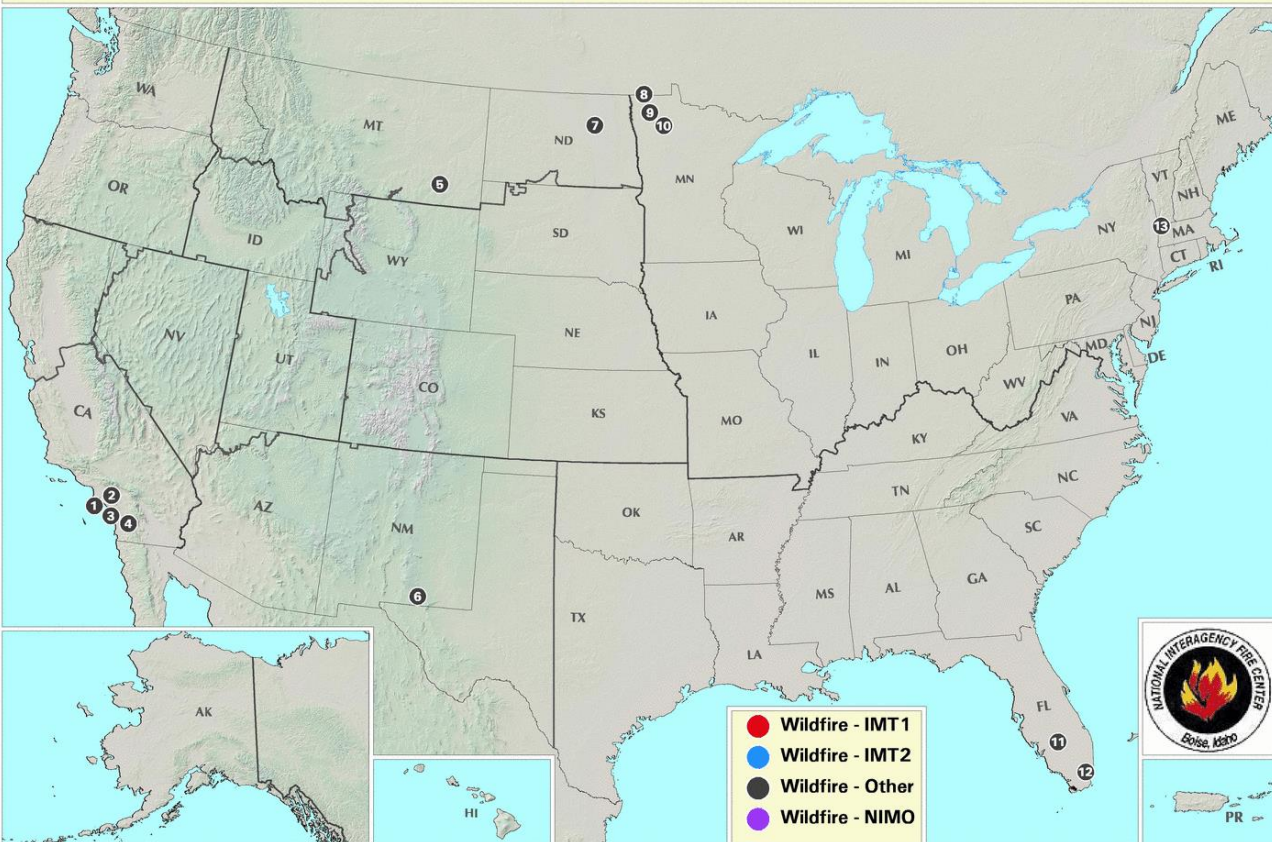
# Wildland Firefighting



# National Preparedness Level: 5

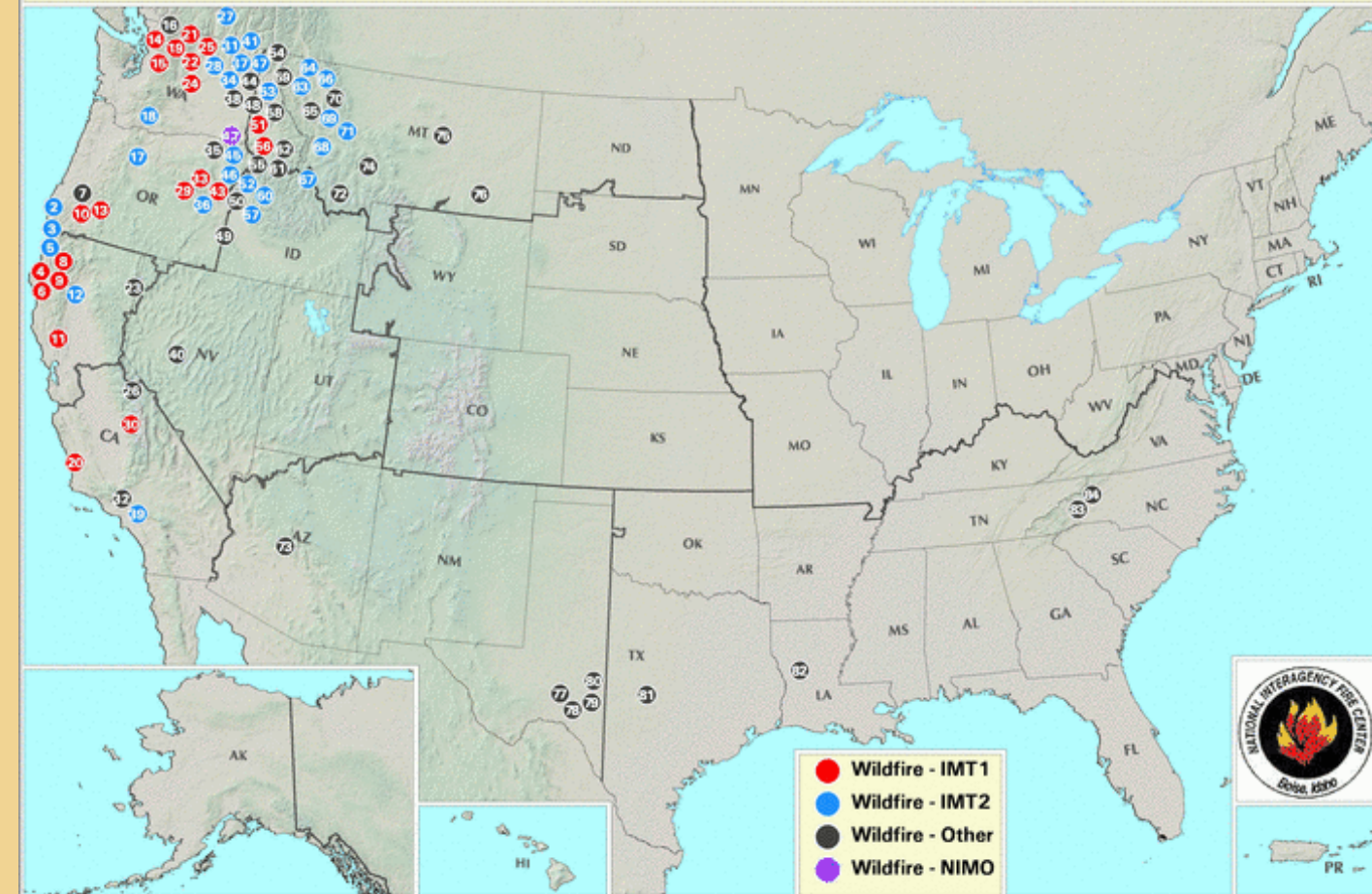
## National Preparedness Level: 1

### Current Large Incidents May 01, 2015



- 1 GRENADE    5 STRAIGHT    9 AGASSIZ    13 CLARKSBURG STATE FOREST
- 2 HIGHWAY    6 PINON WELL    10 RL 372
- 3 CARL    7 REBEL    11 BOARS HAMMOCK
- 4 MORTAR    8 MCKINLEY    12 GRAND LAKE

### Current Large Incidents August 19, 2015

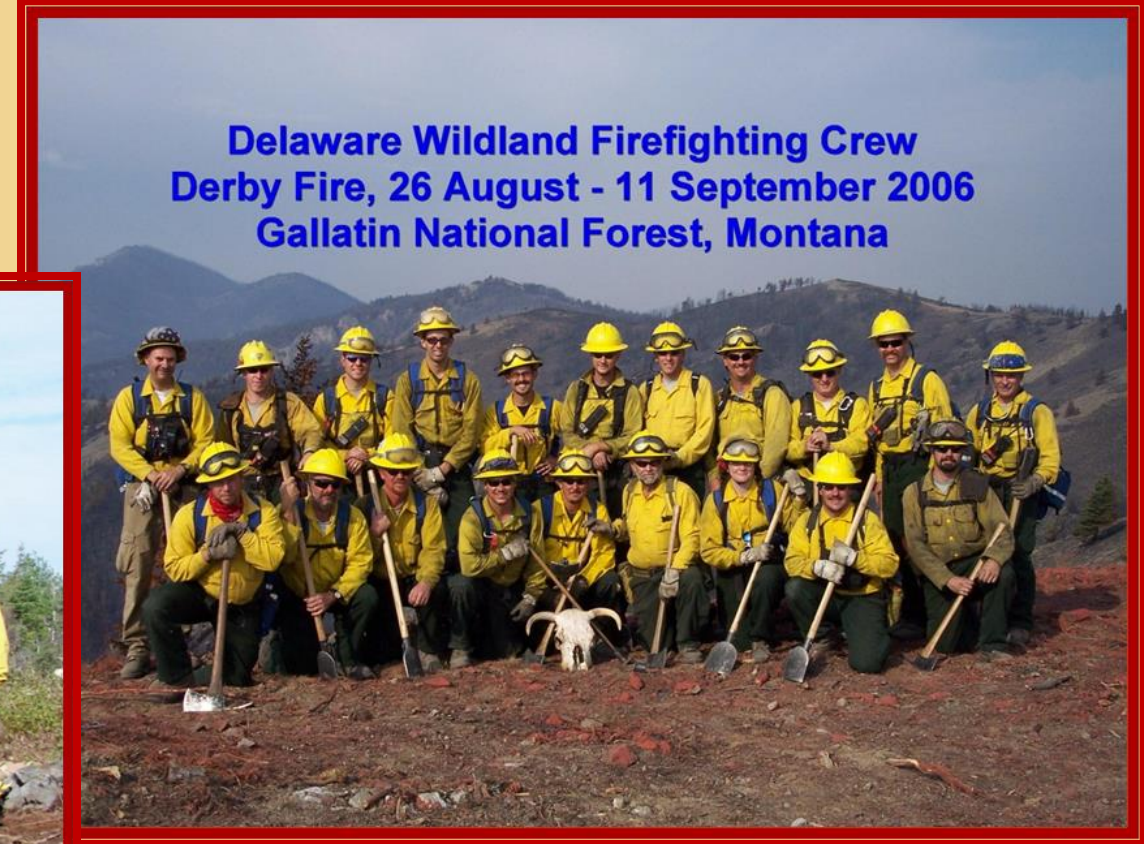


- 1 HUMBOLDT COMPLEX    22 BLACK CANYON    43 CORNET-WINDY RIDGE    64 NORTHEAST KOOTENAI COMPLEX
- 2 COLLIER BUTTE    23 DODGE    44 GOLD HILL    65 MELTON 1
- 3 GASQUET COMPLEX    24 REACH    45 EAGLE    66 THOMPSON DIVIDE COMPLEX
- 4 ROUTE COMPLEX    25 OKANOGAN COMPLEX    46 RAPID    67 BOBCAT
- 5 NICKOWITZ    26 WALKER    47 KANIKSU COMPLEX    68 SCOTCHMANS GULCH
- 6 MAD RIVER COMPLEX    27 STICKPIN    48 RUTTER CANYON    69 MORRELL COMPLEX
- 7 CABLE CROSSING    28 NORTH STAR    49 SODA    70 TRAIL CREEK
- 8 RIVER COMPLEX    29 CANYON CREEK COMPLEX    50 MANN    71 SUCKER CREEK
- 9 FORK COMPLEX    30 ROUGH    51 MUNICIPAL COMPLEX    72 CABIN CREEK
- 10 STOUTS CREEK    31 GRAVES MOUNTAIN    52 TEPEE SPRINGS    73 RATTLESNAKE
- 11 JERUSALEM    32 WARM    53 NOT CREATIVE    74 EUSTIS
- 12 SOUTH COMPLEX    33 ELDORADO    54 PARKER RIDGE    75 TROPHY RIDGE
- 13 NATIONAL CREEK COMPLEX    34 CARPENTER ROAD    55 ELK CITY COMPLEX    76 RESERVATION CREEK
- 14 BLANKENSHIP    35 PHILLIPS CREEK    56 CLEARWATER COMPLEX    77 SUTTON RANCH
- 15 FIRST CREEK    36 BENDIRE COMPLEX    57 WEST SCRIVER    78 WEST FIRE
- 16 THURSDAY CREEK    37 MARBLE VALLEY    58 MARBLE CREEK    79 COX RANCH
- 17 COUNTY LINE 2    38 BIG LOST    59 NAPOLEON 1    80 HEAD OF THE RIVER RANCH
- 18 COUGAR CREEK    39 CABIN    60 COUGAR    81 L BAR
- 19 WOLVERINE    40 COLD SPRINGS    61 CAMPBELLS    82 LAFAYETTE
- 20 CUESTA    41 ROY    62 SLIDE    83 WOLF CREEK
- 21 MCFARLAND CREEK    42 GRIZZLY BEAR COMPLEX    63 WEIGEL    84 BALD KNOB

# Wildland Firefighting



Delaware Wildland Firefighting Crew  
Crooked Fire, 1-16 August 2000  
Lolo Pass, Idaho (Drop Point 60)



Delaware Wildland Firefighting Crew  
Derby Fire, 26 August - 11 September 2006  
Gallatin National Forest, Montana



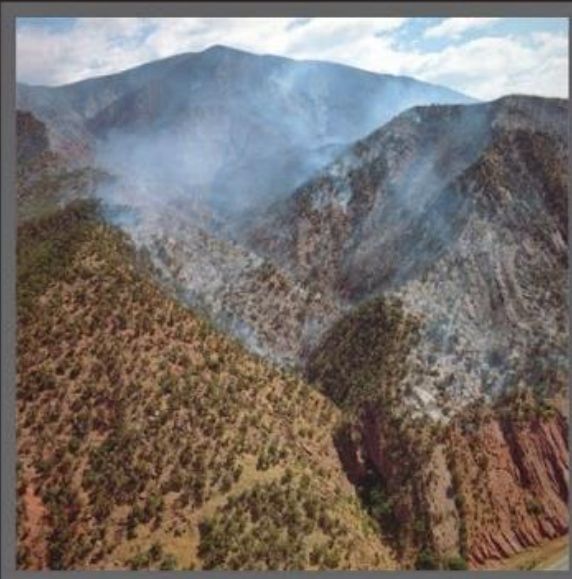
Delaware Wildland Firefighting Crew  
Cavity Lake Fire, 20 July - 5 August 2006  
Boundary Waters Canoe Area Wilderness  
Superior National Forest, Minnesota



# How is your Situational Awareness?



*Mann Gulch Fire, 13 deaths*  
Montana 1949



*South Canyon Fire, 14 deaths*  
Colorado 1994



*Cramer Fire, 2 deaths*  
Idaho 2003



*Esperanza Fire, 5 deaths*  
California 2006

*Similar terrain, extreme fire behavior, 34 lives*

**L**ookouts . **C**ommunications . **E**scape routes . **S**afety zones



## STANDARD FIRE FIGHTING ORDERS

1. Keep informed on FIRE WEATHER conditions and forecasts.
2. Know what your FIRE is DOING at all times; observe personally, use scouts.
3. Base all action on current and expected BEHAVIOR of FIRE.
4. Have ESCAPE ROUTES for everyone and make them known.
5. Post a LOOKOUT when there is possible danger.
6. Be ALERT, keep CALM, THINK clearly, ACT decisively.
7. Maintain prompt COMMUNICATION with your men, your boss, and adjoining forces.
8. Give clear INSTRUCTIONS and be sure they are understood.
9. Maintain CONTROL of your men at all times.
10. Fight fire aggressively but provide for SAFETY first.

5100-16

Nat'l Museum Forest Service History

## 18 "WATCH OUT!" SITUATIONS

1. Fire **not scouted and sized up**.
2. Fire in terrain **not seen in daylight**.
3. Safety zones and escape routes **not identified**.
4. **Unfamiliar** with weather and local factors affecting fire behavior.
5. **Uninformed** on strategies, tactics, and hazards.
6. Instructions and assignments are **not clear**.
7. **No communication link** with crew members or supervisor.
8. Constructing a fireline **without a safe anchor point**.
9. Constructing a fireline **downhill**, with fire below.
10. Attempting a **frontal assault** on a fire.
11. **Unburned fuel** between you and your fire.
12. **Cannot see** the main fire, and **no contact** with anyone who can.
13. On a hillside where **rolling material** can ignite fuels below.
14. Weather becoming **hotter and drier**.
15. **Wind** increases or changes in direction.
16. Getting **frequent spot fires** across the fireline.
17. **Terrain and fuels** make escape to safety zones difficult.
18. Taking nap **near the fireline**.



Days after publishing research that found global warming had boosted the risk of fast-growing California wildfires by 25%, scientist and lead author Patrick T. Brown announced that he'd withheld the full truth to maximize the article's chances of being published in the journal Nature.

"The paper I just published—*Climate warming increases extreme daily wildfire growth risk in California*—focuses exclusively on how climate change has affected extreme wildfire behavior. I knew not to try to quantify key aspects other than climate change in my research because it would dilute the story that prestigious journals like Nature and its rival, Science, want to tell," wrote Brown, co-director of the climate and energy team at the Breakthrough Institute, in Berkeley.

Brown also wrote that he'd selected a metric and timeframe to study that weren't the most useful but generated the largest numbers quantifying the impact of climate change.

Brown wrote that *the study didn't look at poor forest management and other factors that are just as, if not more, important to fire behavior because* "I knew that it would detract from the clean narrative centered on the negative impact of climate change and thus decrease the odds that the paper would pass muster with Nature's editors and reviewers." He added such bias in climate science "misinforms the public" and "makes practical solutions more difficult to achieve."

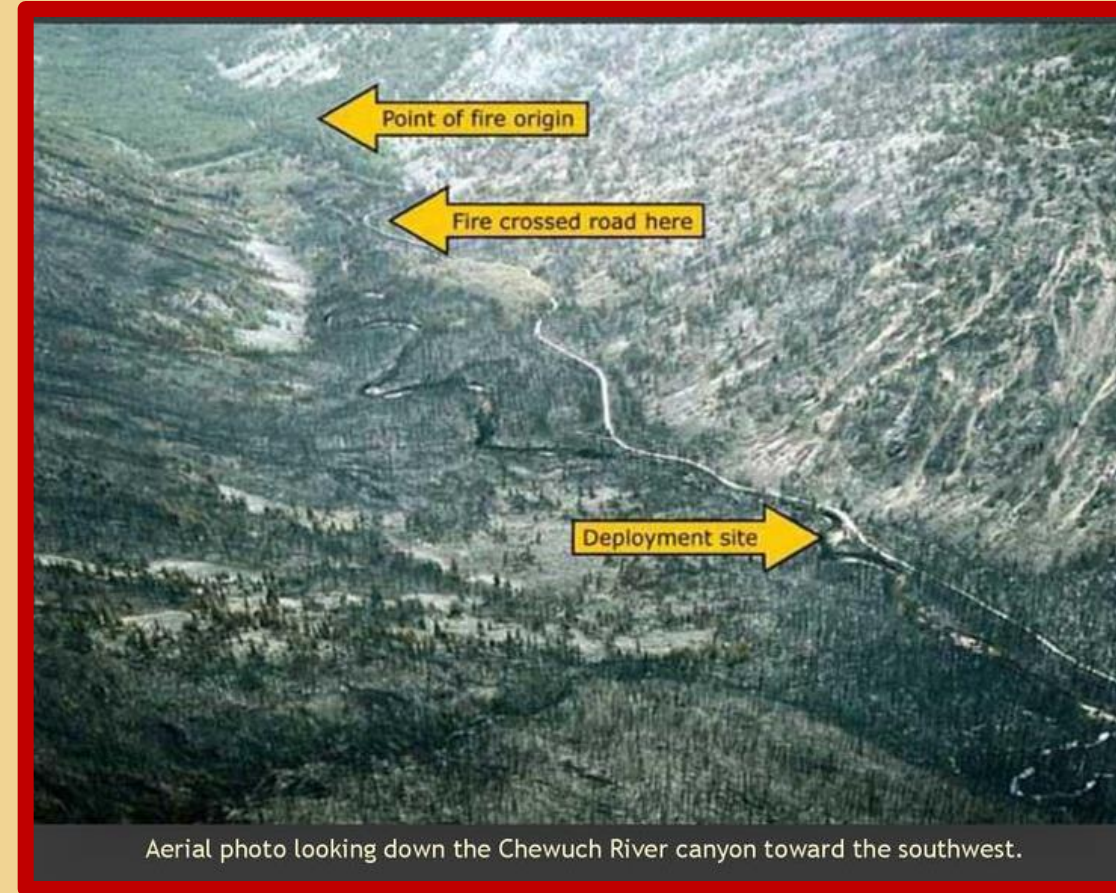
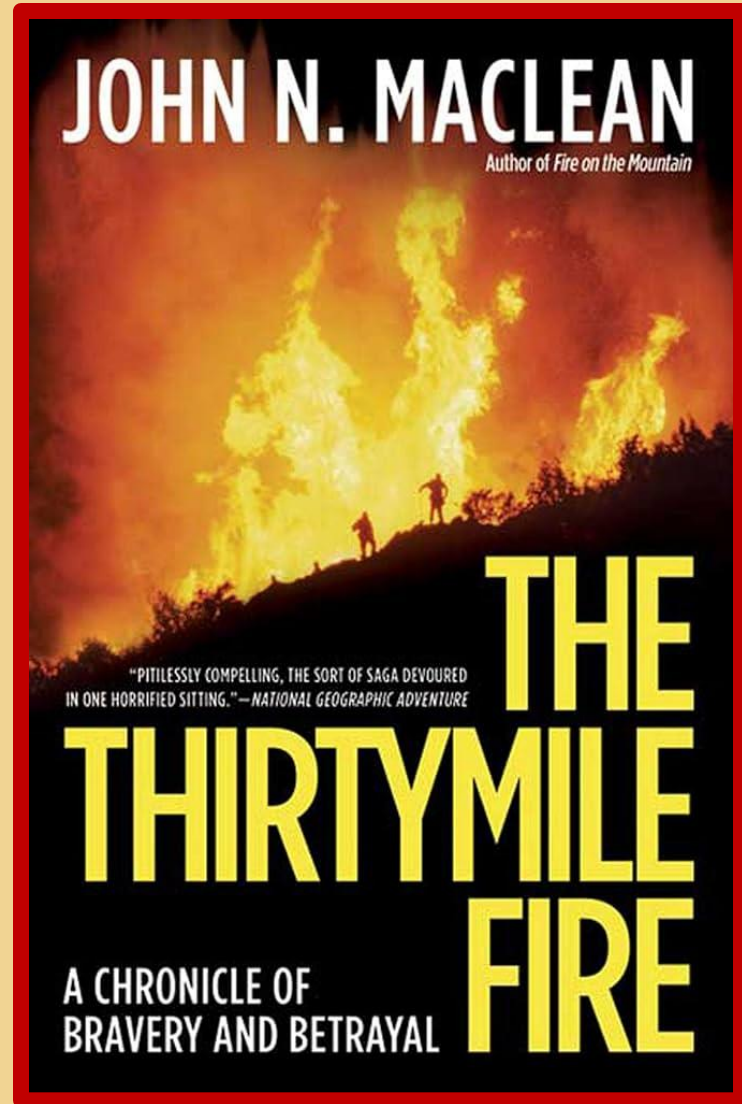


## Spotted Owl Controversy



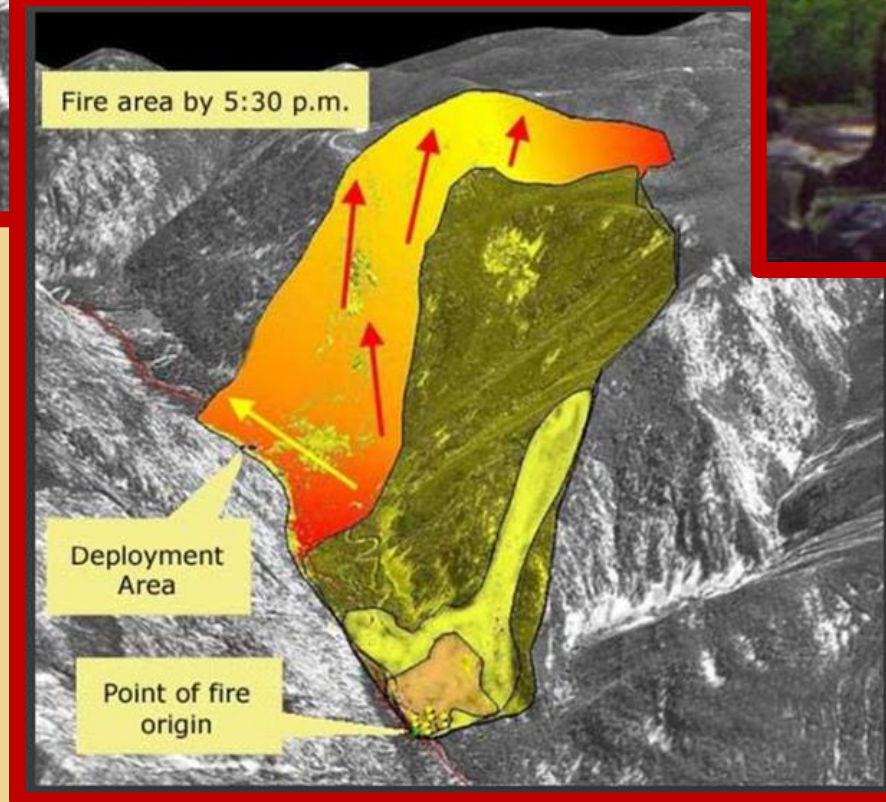
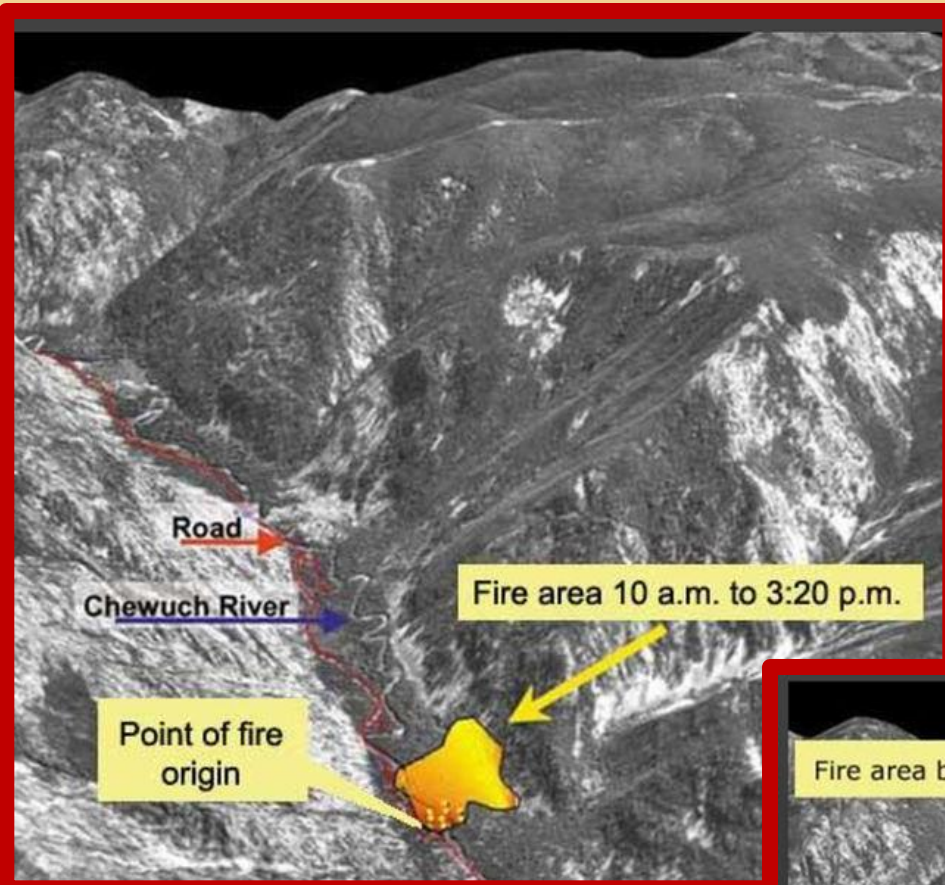
***A sweeping federal court ruling in 1991 closed much of the Northwest woods to logging.***

# Thirtymile Fire 2001





# Thirtymile Fire 2001



# *Thirtymile Fire 2001*



# *Thirtymile Fire 2001*

## *2:1 Work/Rest Ratio*



# ***U.S. Forest Service & Department of the Interior (2010)***

In 2010, working with the Department of the Interior, the Forest Service engaged the entire wildland fire community in developing a joint long-term ***National Cohesive Wildland Fire Management Strategy***. We brought together federal, tribal, state, and local governments and nongovernmental organizations to develop a shared national approach—a national blueprint for building synergies in wildland fire management. Our strategy has three main goals:

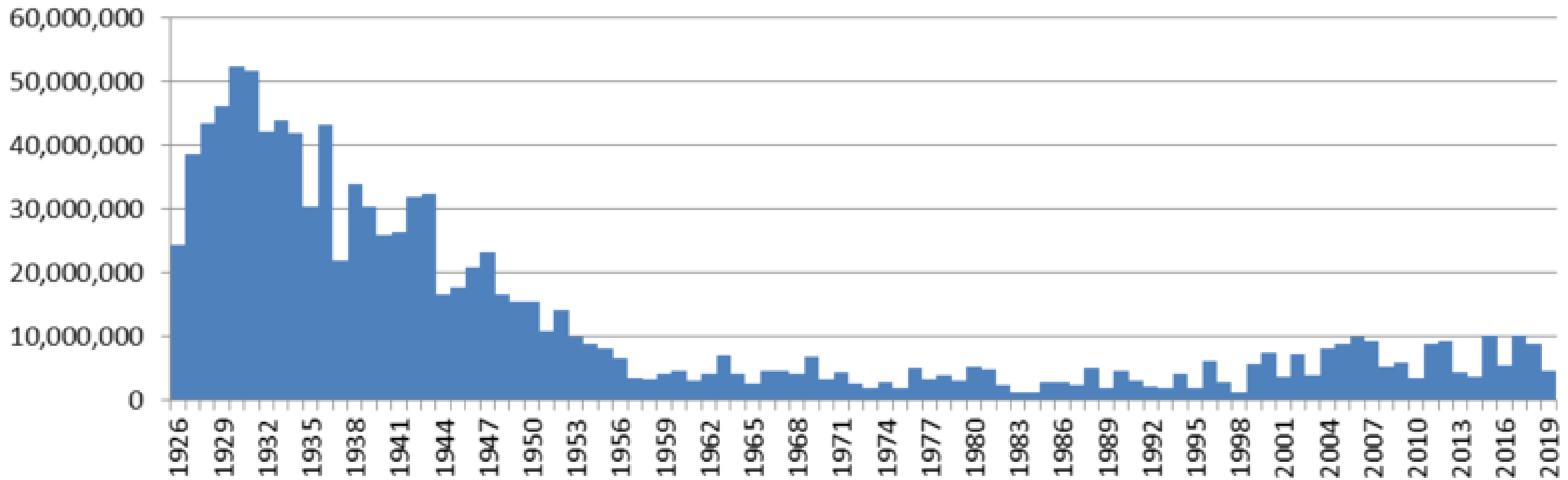
1. **Restore fire-adapted natural communities.**
2. **Create fire-adapted human communities** by treating fuels in the wildland/urban interface and by helping people adopt planning and building practices that make homes and communities safer from wildfire.
3. **Make safe, effective, risk-based wildfire management decisions.** Many of America's landscapes evolved with fire; sooner or later, they will burn. Fire protection requires an appropriate response to wildfire—not only suppression, but also, where safe and beneficial, the use of fire for management purposes. ***We need to learn to live with fire.***



I HATE TO SAY IT, BUT CLIMATE CHANGE HAS BEAT ME!

HORSE  
© 2022  
The Seattle Times

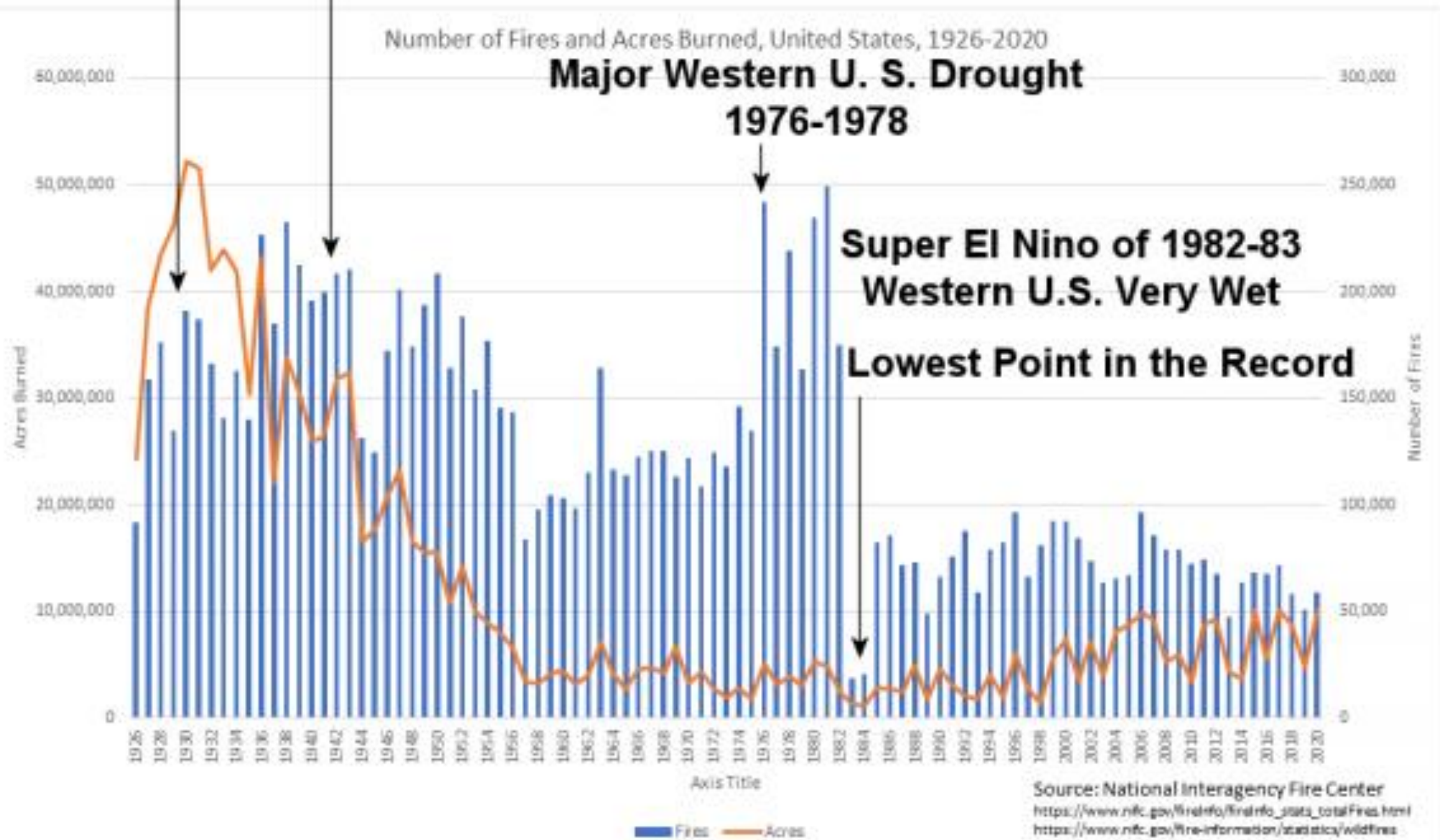
# Acres Burned Annually in United States Wildfires



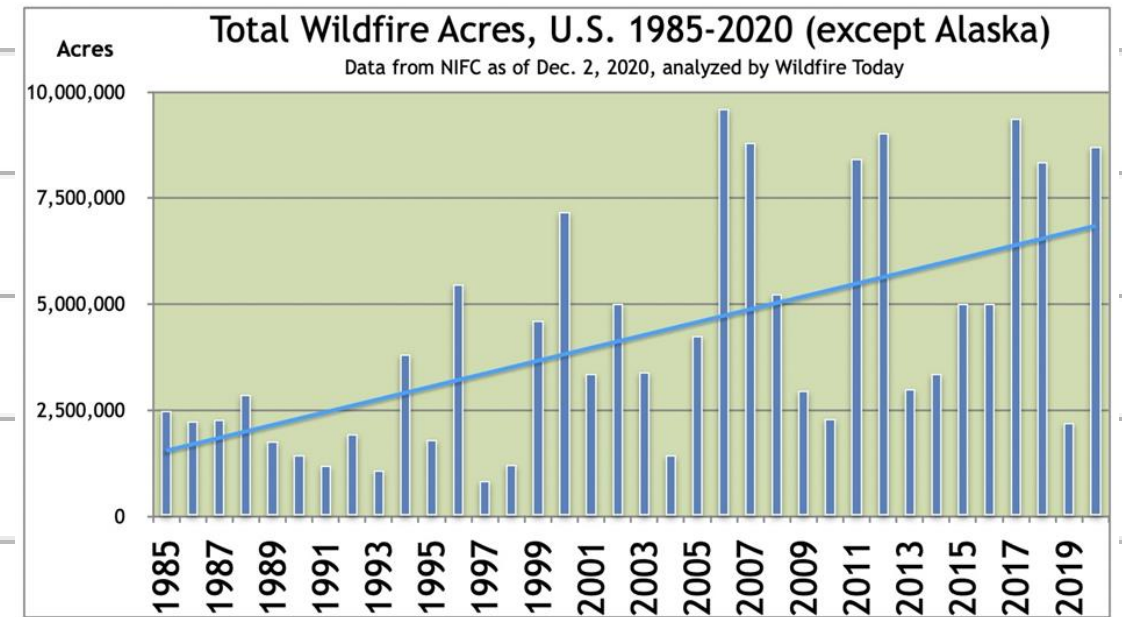
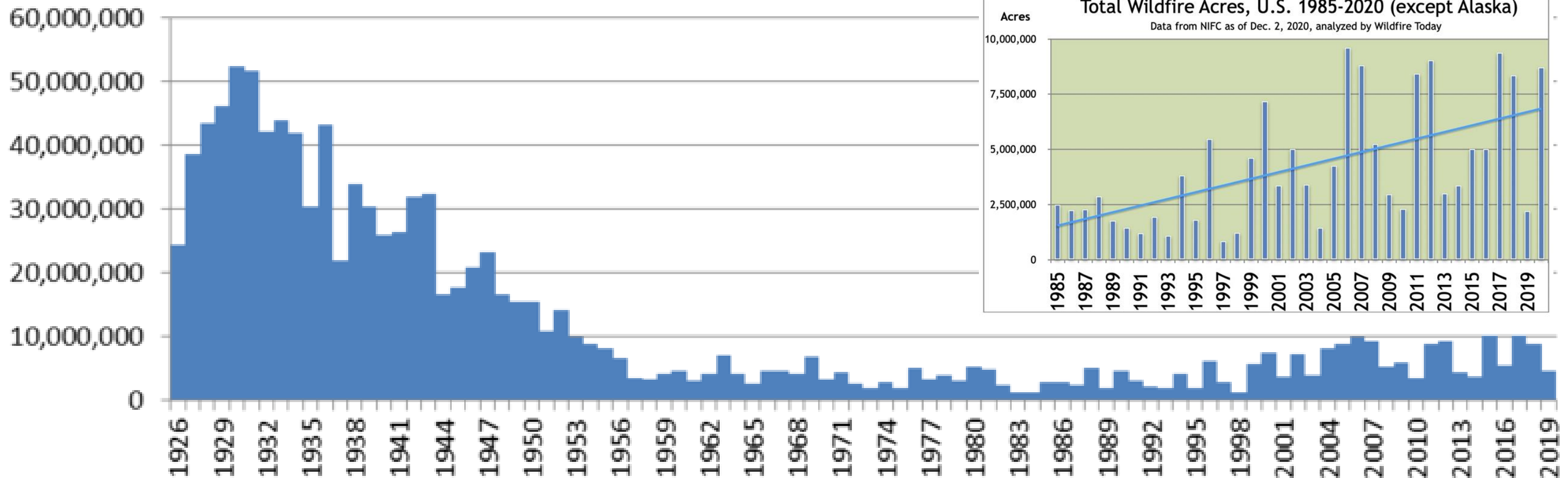
Source: NIFC (National Interagency Fire Center, Boise, Idaho)

# Record Heat/Drought & the U.S. "Dust Bowl"

1930-1941

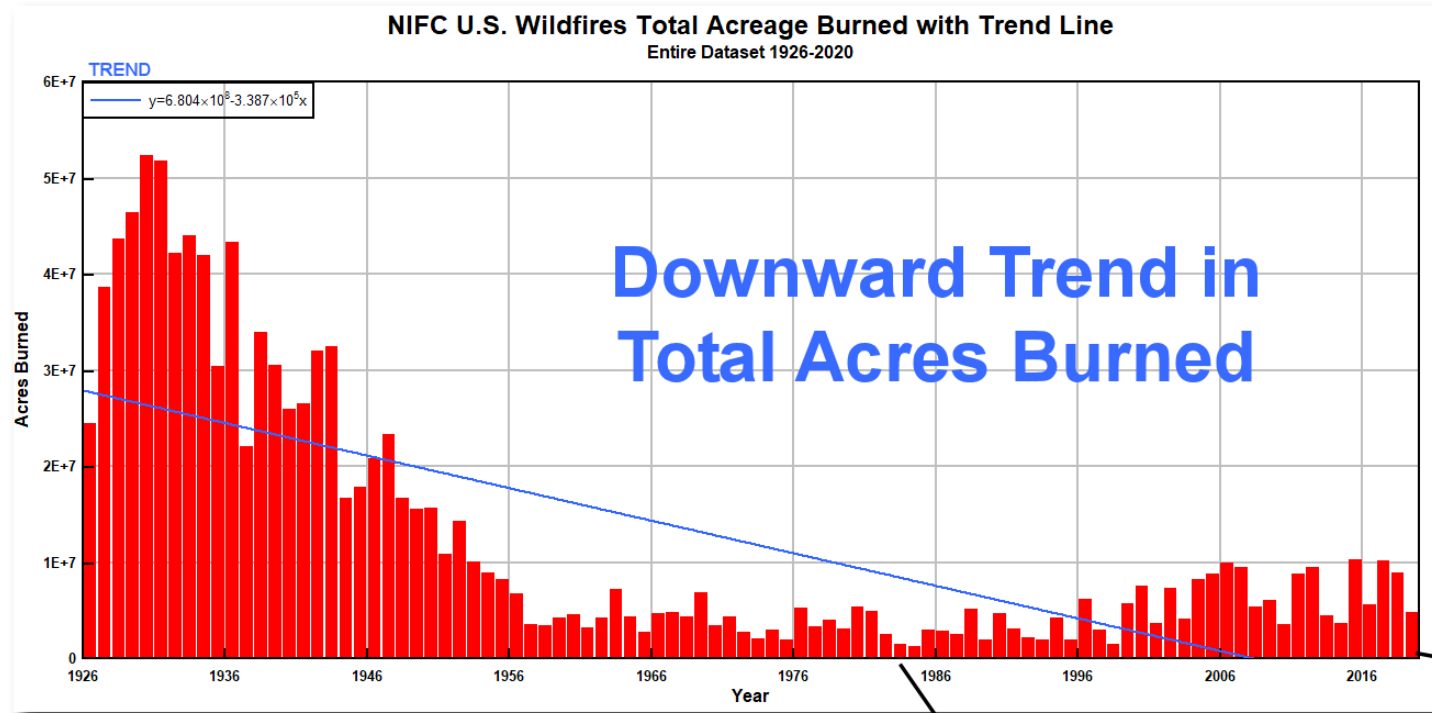


# Acres Burned Annually in United States Wildfires



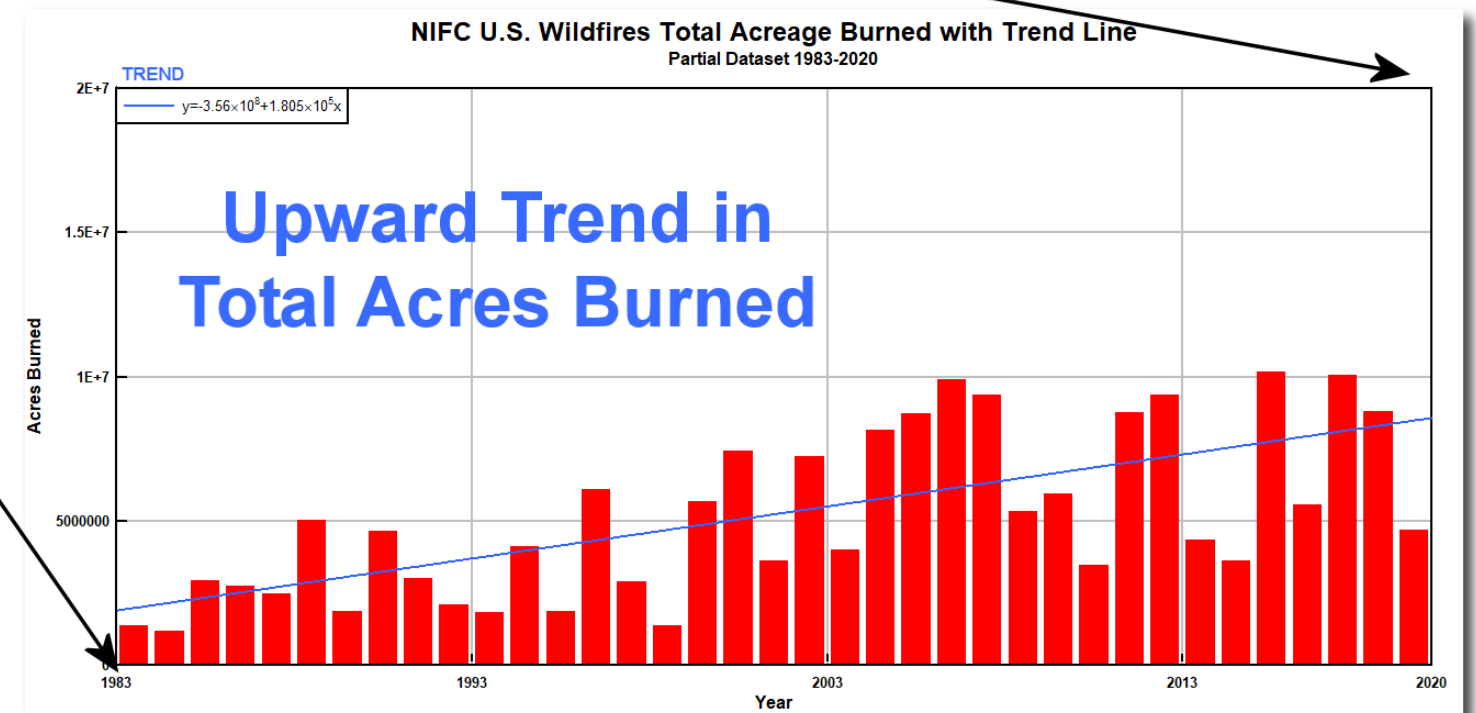


# ALL THE DATA 1926-2020



National Interagency Fire Center (NIFC) hides data prior to 1983 - turning a downward trend into an upwards trend

CHERRY PICKED DATA 1983-2020



***“ . . . . the study didn't look at poor forest management and other factors that are just as, if not more, important to fire behavior because I knew that it would detract from the clean narrative centered on the negative impact of climate change and thus decrease the odds that the paper would pass muster with Nature's editors and reviewers.”***

# Total Wildfire Acres, U.S. 1985-2020 (except Alaska)

Data from NIFC as of Dec. 2, 2020, analyzed by Wildfire Today

Acres

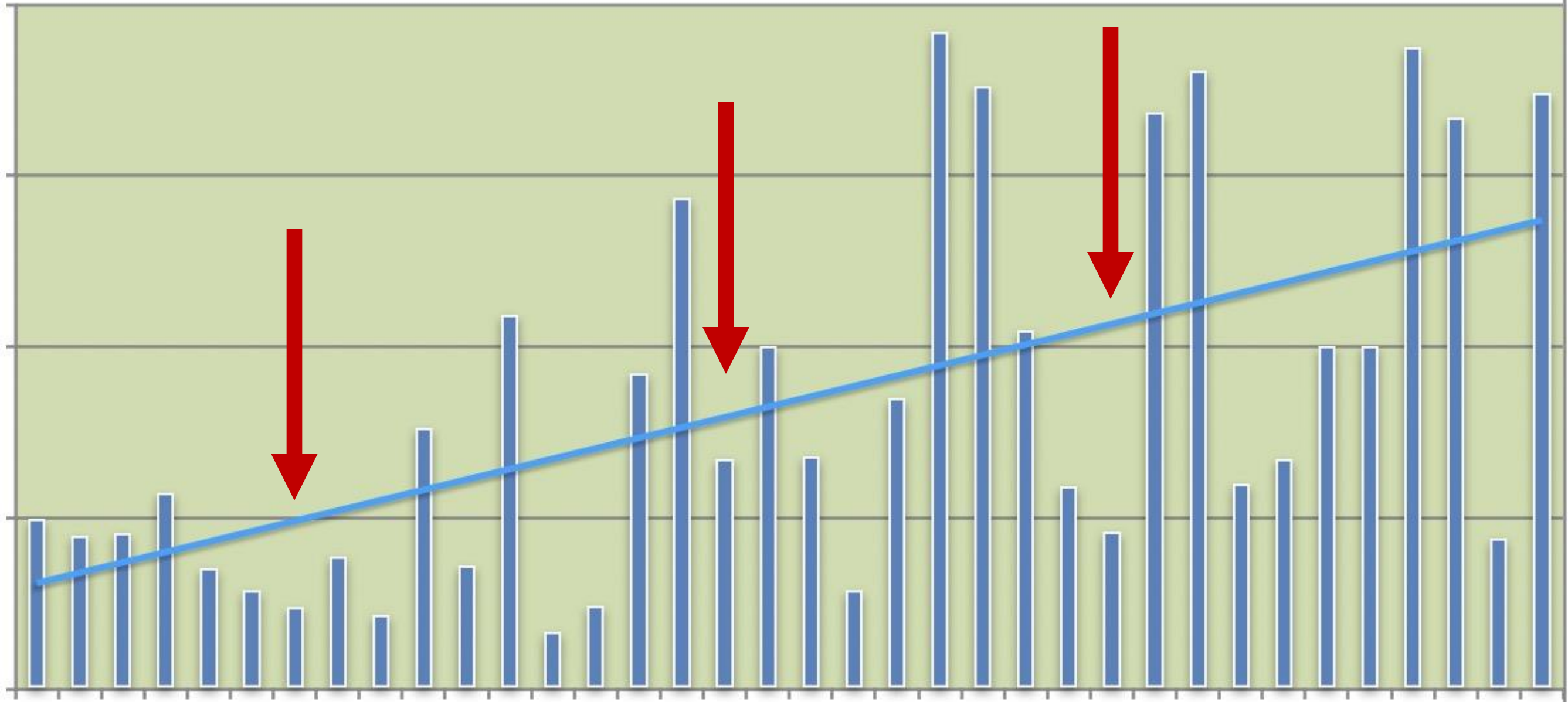
10,000,000

7,500,000

5,000,000

2,500,000

0



1985

1987

1989

1991

1993

1995

1997

1999

2001

2003

2005

2007

2009

2011

2013

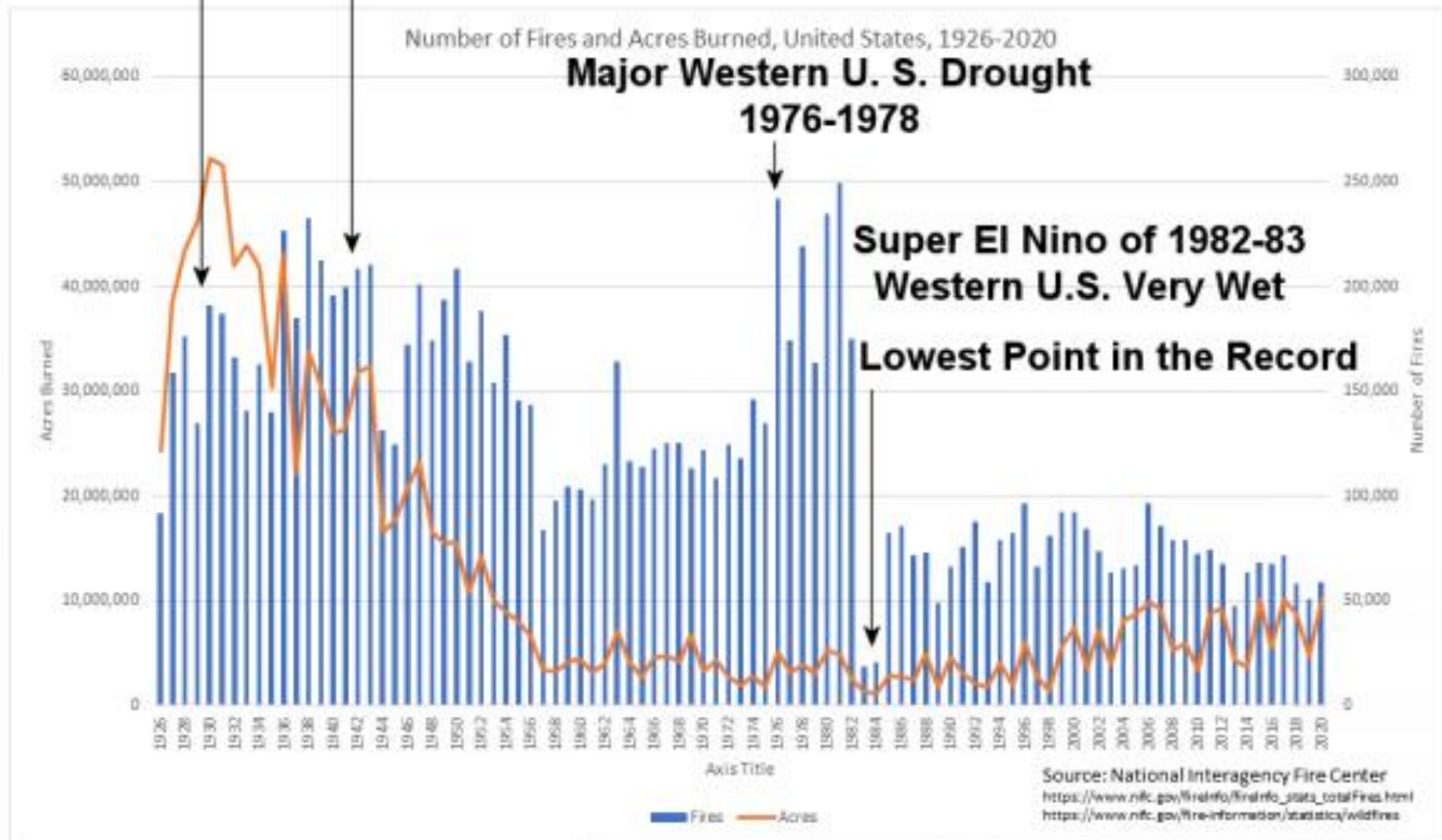
2015

2017

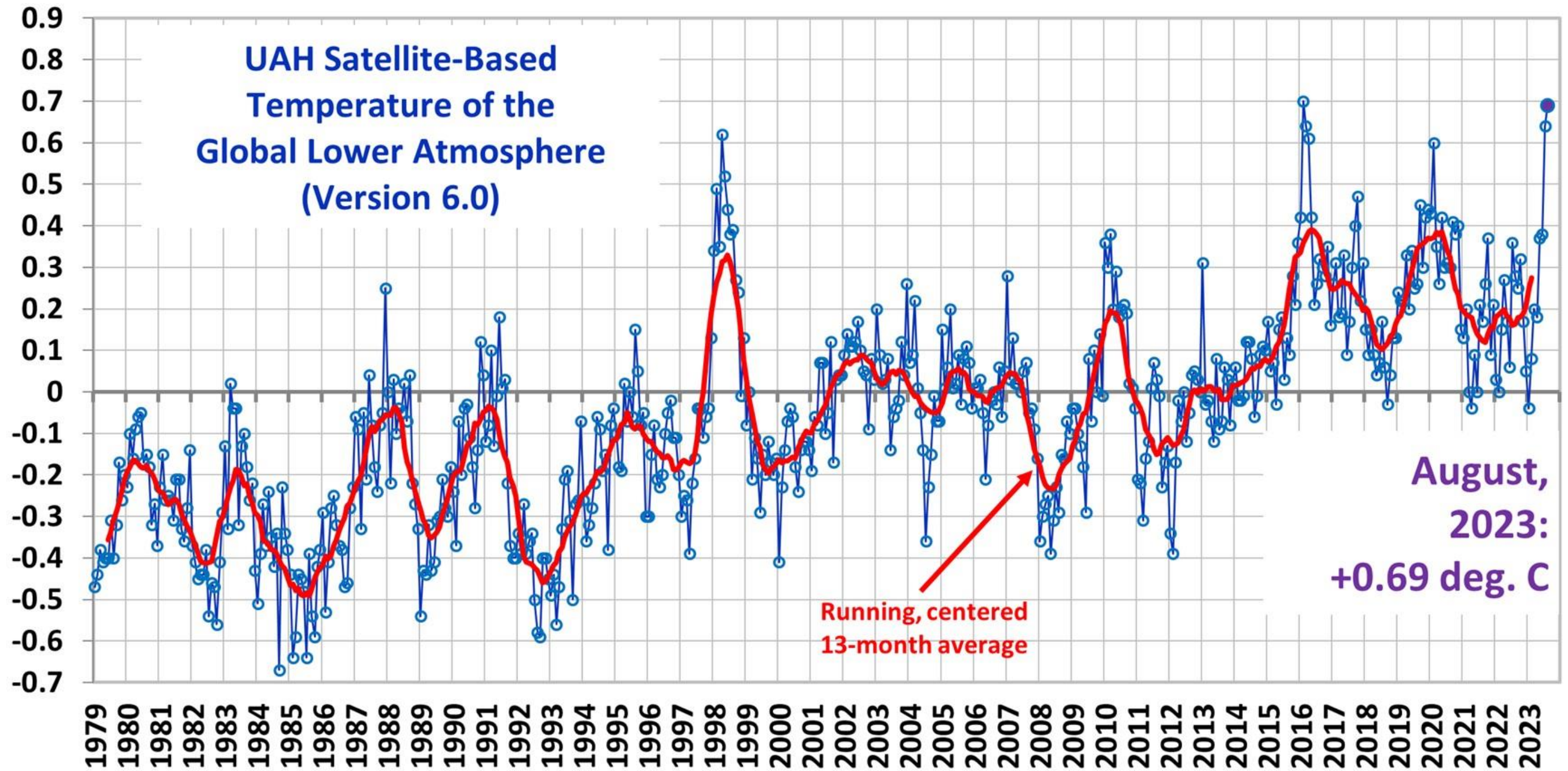
2019

# Record Heat/Drought & the U.S. "Dust Bowl"

1930-1941



T Departure from '91-'20 Avg. (deg. C)



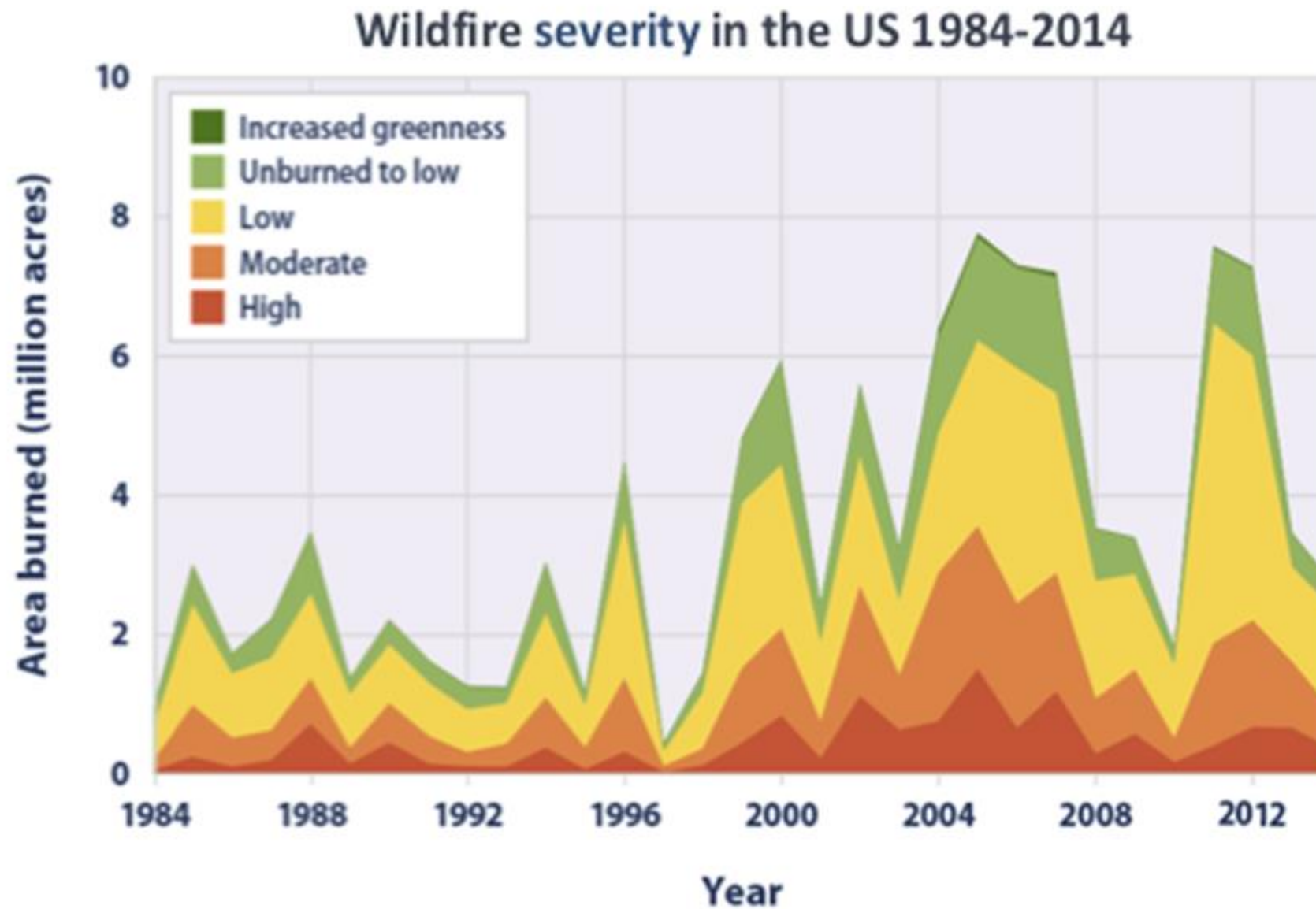
**Roy Spencer, Ph. D.**  
climatologist, author, former NASA scientist

<https://www.drroyspencer.com/>

# Recent trends in wildfires in the US: **Severity**

**Most area burned is low severity**

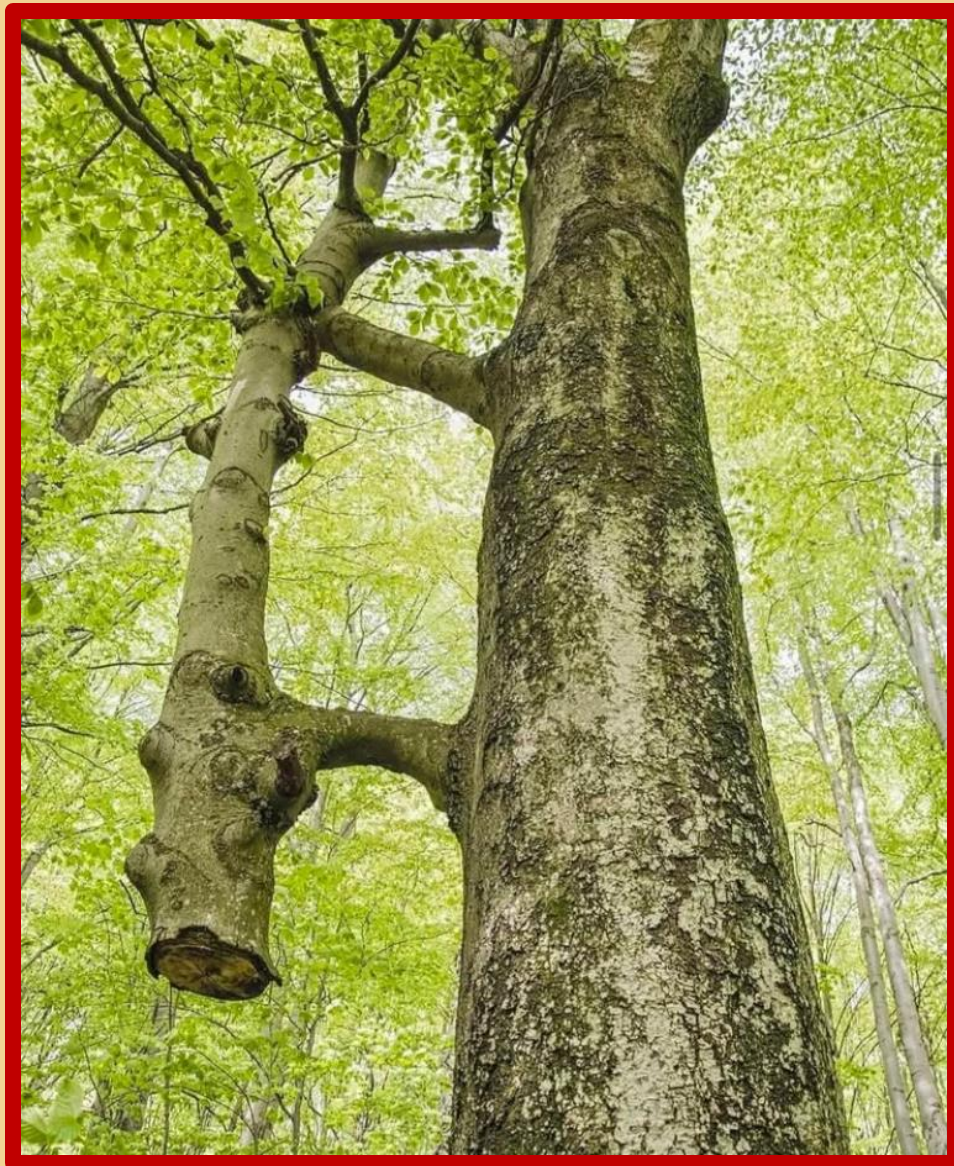
**No relative increase in high severity**



Wildfire severity in the US 1984-2014

Incr. greenness	1%	
Unb. to Low	19%	
Low	45%	65%
Moderate	23%	
High	12%	35%

***Avoid panic, practice sound and sustainable forest management, educate the public, and maintain vigilance for fires near valued resources.***



***“Fire is a wonderful servant,  
but a terrible master.”***



A photograph of a forest at night, illuminated by warm, golden-yellow lights. The trees are dark silhouettes against a glowing background. The text "Questions?" is overlaid in a white, italicized serif font.

*Questions?*



