



# On the Road to Paris: Promises, Opportunities and Challenges



*Rachel Cleetus*  
*February 4, 2015*



[ Union of  
**Concerned Scientists**



# Time Is Running Out

**We have used up two-thirds of the global carbon budget available to have a better-than-even chance of staying below 2°C**

**Global emissions must peak by 2020; U.S. emissions must be cut by *at least* 80 percent by mid-century**

**If we delay 10 more years, rate of annual decrease needed doubles**

# Limping home from Lima



- Positive momentum from U.S.-China announcement
- Nevertheless, disappointing outcome
- Major schisms around differentiation and equity
- A lot of work to do before Paris



# **The 2015 opportunity**

**Broaden participation in climate action regime**

**Strong signal to markets on the low-carbon transition**

**Set a benchmark for post-Obama US climate policy**

# The renewable energy revolution



- Rapid global ramp-up
- Dramatically falling costs
- Public health, economic and climate benefits

**BUT**

- Need strong policies



# Steps to a Post-2020 Climate Deal

**Early 2015: countries propose post-2020 actions**

**Actions assessed in light of 2°C goal and equity**

**End-game issues: legal form, overall ambition, finance**

**Need political guidance from leaders in run-up to Paris**

# Impacts of climate change are here... and likely to worsen

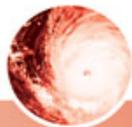
SCIENCE  
CONNECTIONS →

## EXTREME WEATHER & CLIMATE CHANGE

→ Strongest Scientific Evidence Shows Human-Caused Climate Change Is Increasing Heat Waves and Coastal Flooding



TORNADOES



HURRICANES



SEVERE  
DROUGHTS



EXTREME  
PRECIPITATION  
EVENTS



COASTAL  
FLOODING



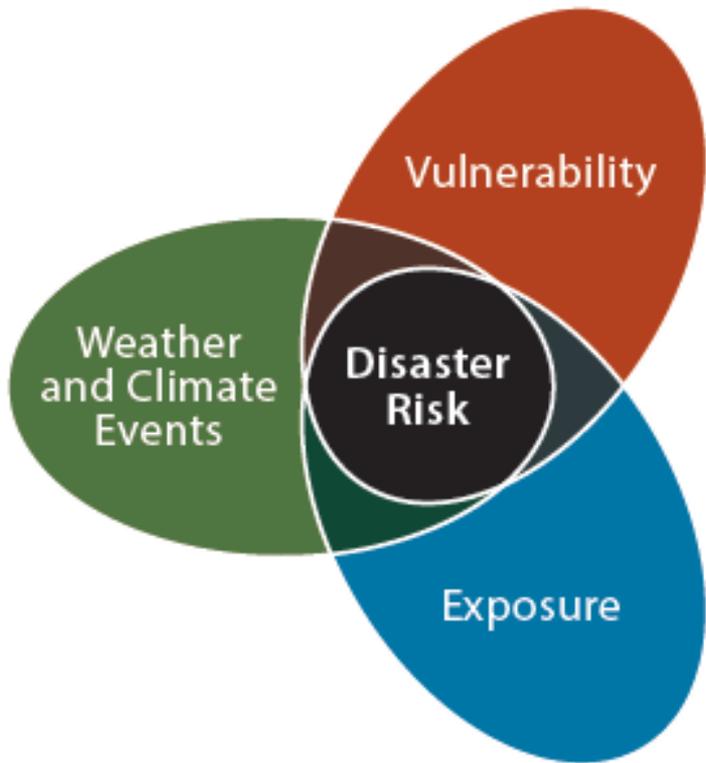
HEAT  
WAVES

Limited  
Evidence

Strong  
Evidence

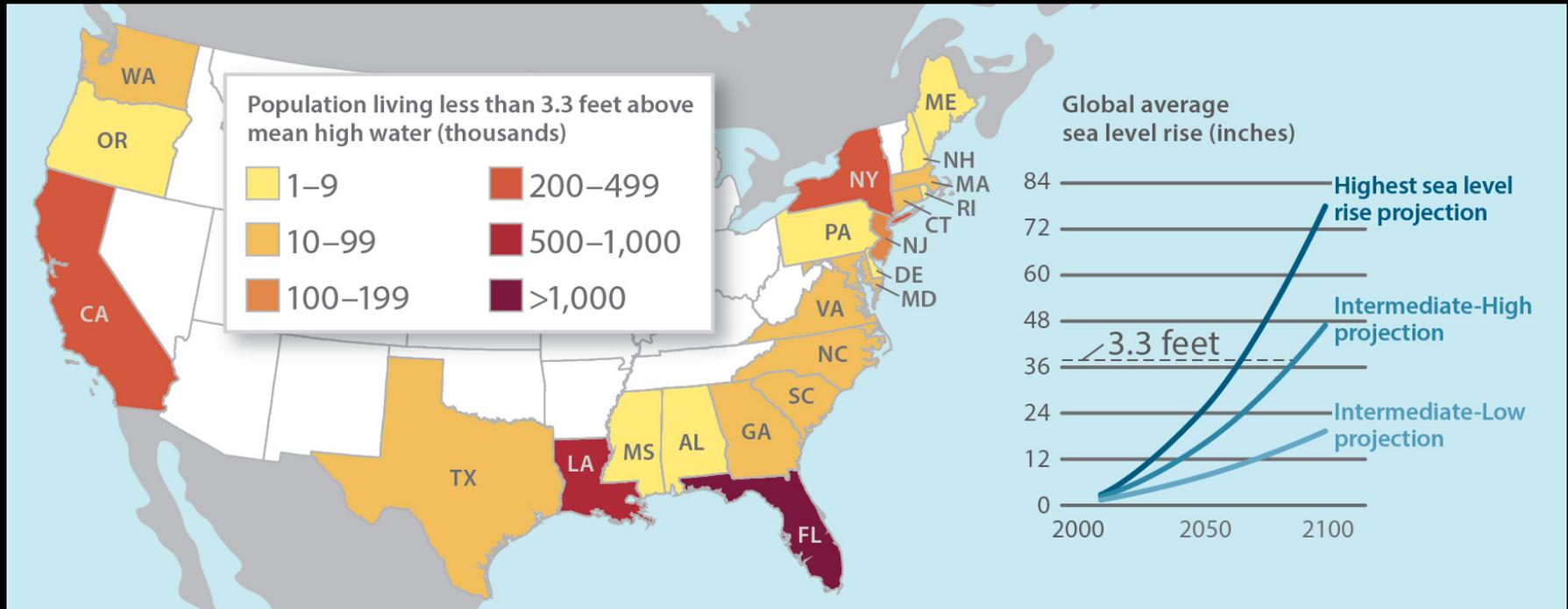
Strongest  
Evidence

# Communities at Risk



- Increasing population in risky areas
- Increasing development in risky areas
- Climate factors

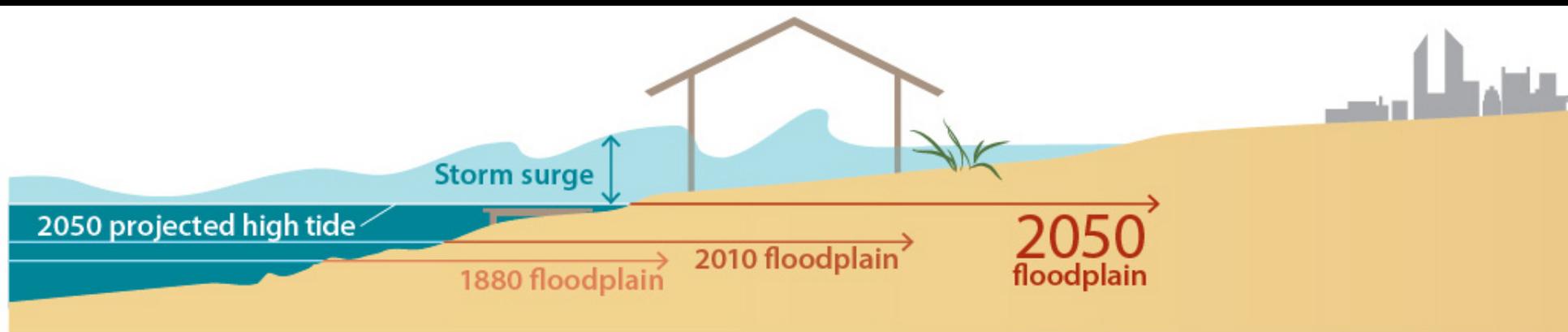
# Sea Level Rise



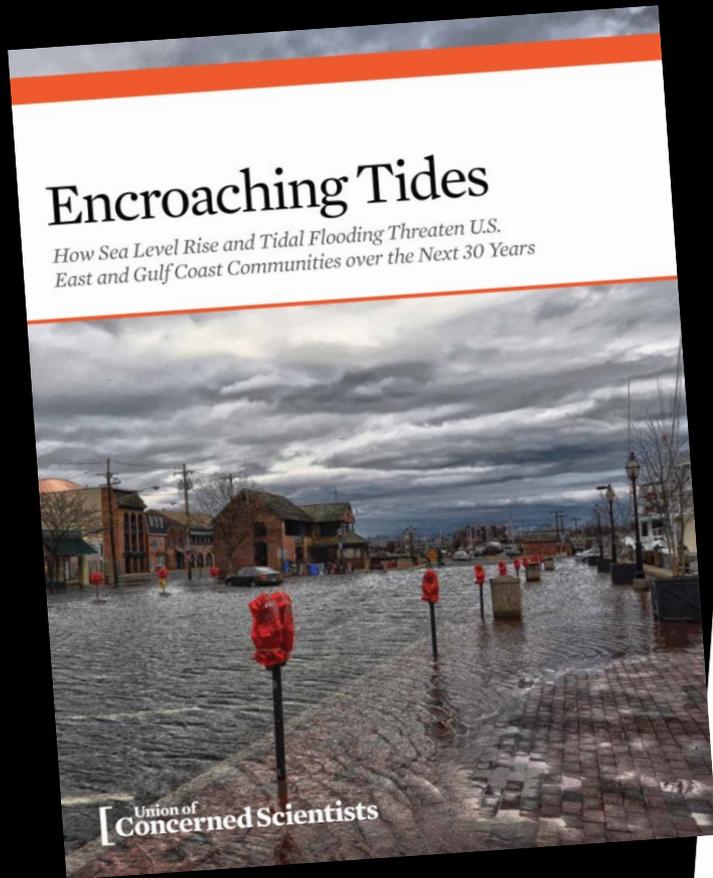
- More than 100 million people live in coastal counties in the U.S.
- Almost ***three million people***, and their homes, reside within three feet of mean high water

# Storm surge

- Sea level sets a higher baseline for storm surge
- Destructive rise in sea height during a storm



# Encroaching Tides Report

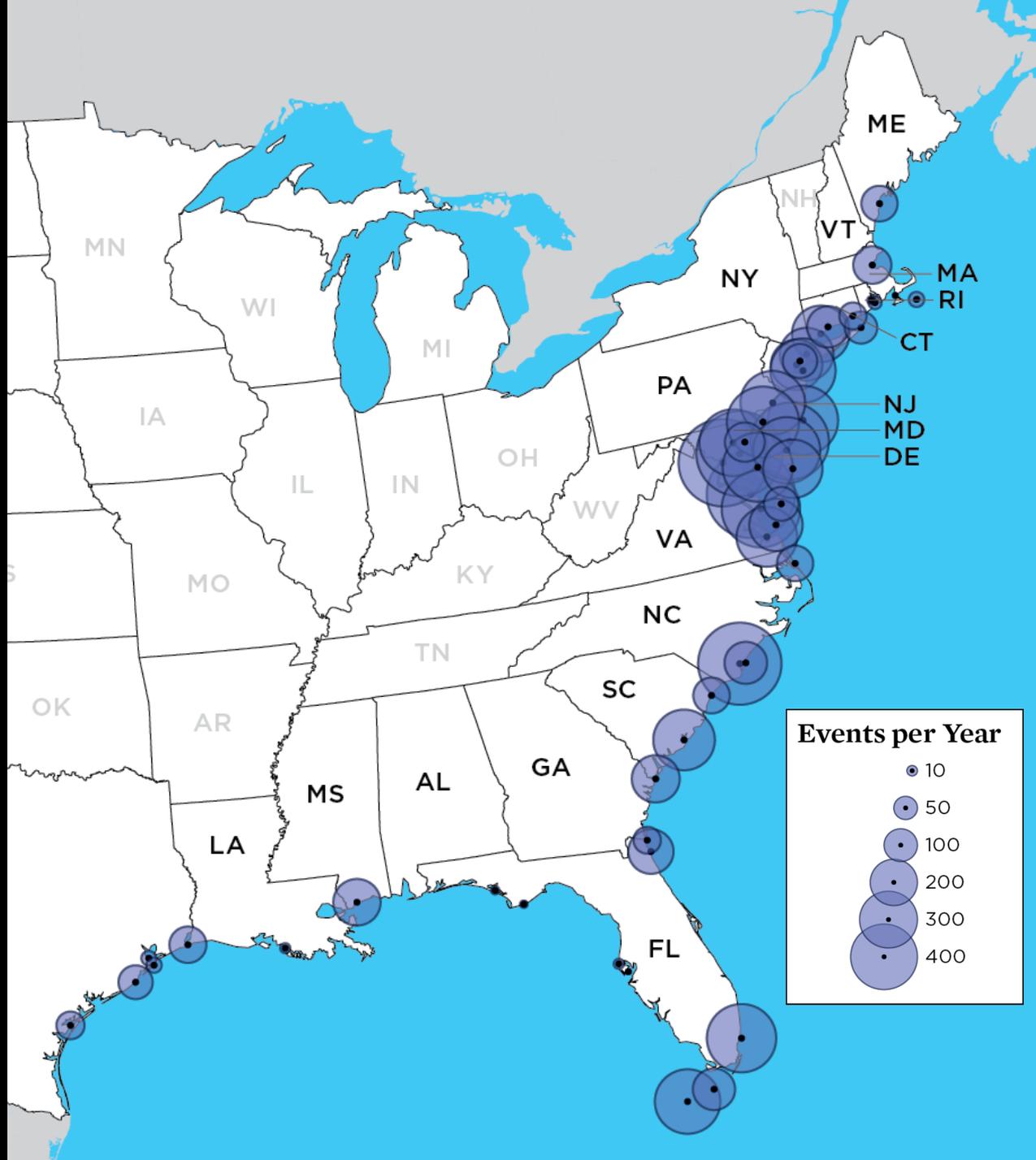


# About this Report

- Looks at 52 locations on the U.S. East and Gulf Coasts
- Uses local minor and moderate flooding thresholds, correlated with local flooding
- Uses local SLR projections for 2030 and 2045
- Projects the future frequency and duration with which future tides exceed flooding thresholds



# Growing Frequency and Spread of Tidal Flooding



# Reforming Coastal Insurance



Union of Concerned Scientists

## Overwhelming Risk

Rethinking Flood Insurance in a World of Rising Seas

**S**TORMS STRIKE THE U.S. COAST EACH YEAR, sometimes with devastating force. Both the risks of flooding and wind damage to coastal communities are growing. Rising populations and increasing development along scenic coastlines are putting more people and more valuable properties at risk. Accelerating sea level rise, which puts higher water levels in the path of coastal storms, is a growing threat, especially along the East and Gulf Coasts of the United States, which have seen much higher and faster rates of sea level rise than the global average. Global warming has resulted in stronger and more frequent hurricanes in the North Atlantic, and more frequent heavy rain events. Together, these socioeconomic and climate-related trends are driving increased property damage and loss along our coasts—costs that are projected only to grow in a warming world.

In the face of increasingly unmanageable risks, many private insurers have left the coastal insurance market. The National Flood Insurance Program (NFIP) is now practically the sole provider of flood insurance for home owners and small businesses nationwide.

To ensure widespread coverage against flooding and storm damages at an affordable cost, the federal government and many state governments have established taxpayer-backed subsidized insurance options. However, the artificially low insurance rates that result, and other aspects of these subsidized programs, have instead allowed—indeed, reinforced—risky patterns of land development. They have also created perverse incentives for repetitive insurance claims and an unsustainable level of financial exposure for all taxpayers, who ultimately help pay for insurance claims and disaster relief in the event of a major storm.

With sea levels projected to rise globally between at least eight inches and more than six and a half feet above 1992 levels by the end of this century, and at a substantially faster rate than at present along densely populated parts of the East Coast, our risk of physical and financial harm is rising rapidly, too. We urgently need to reform our insurance system so that it can help us manage these risks effectively, even as we invest in measures to slow global warming and sea level rise and prepare for their impacts.

for all taxpayers, who ultimately help

SUMMARY

## Overwhelming Risk

Rethinking Flood Insurance in a World of Rising Seas

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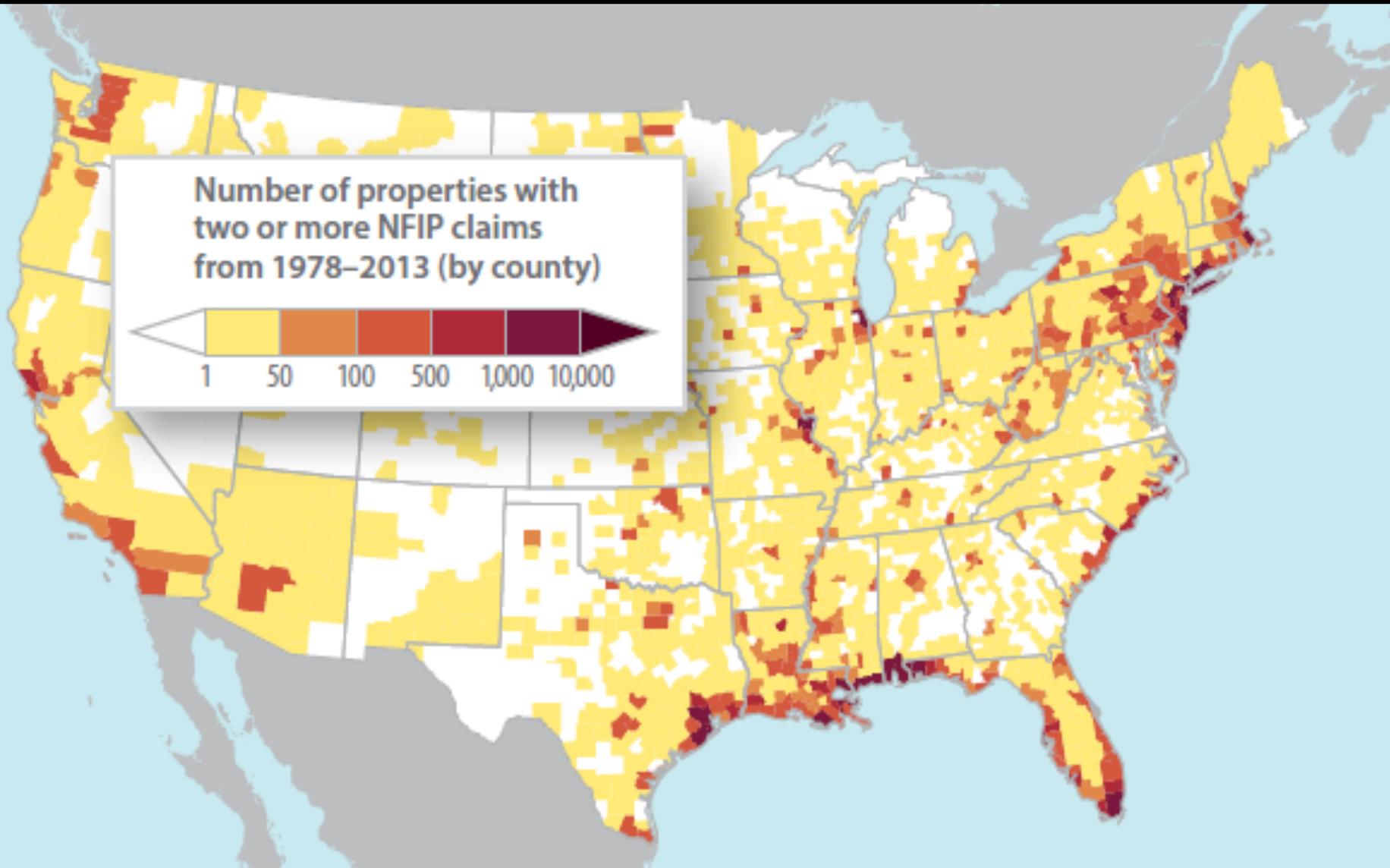
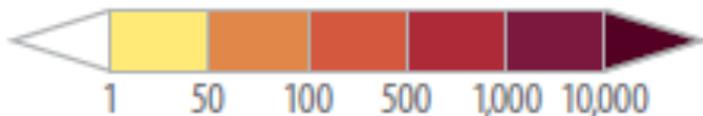


FIGURE 1. Recipe for Disaster

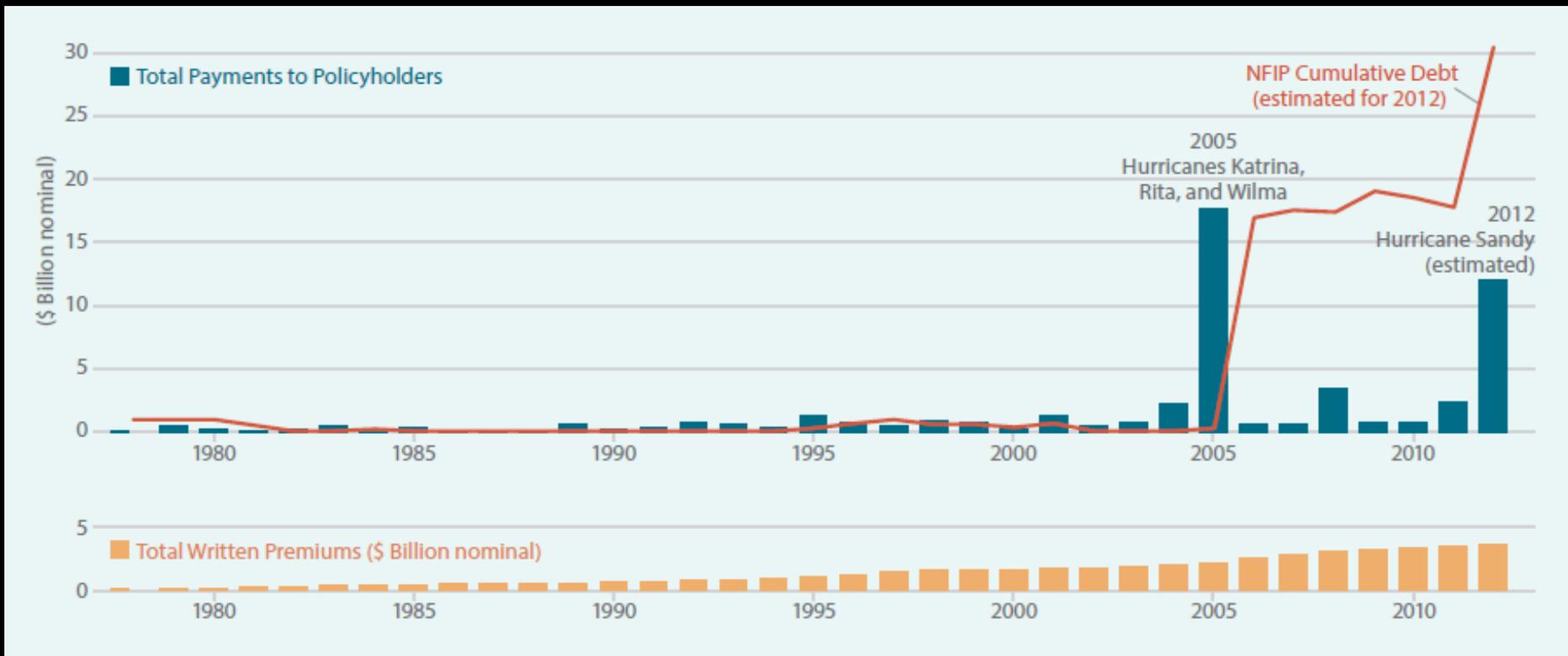
Densely populated areas and highly developed U.S. coastlines mean that the nation is greatly exposed to potential damages from coastal storms. The vulnerability of many communities, determined by such factors as people's access to essential services and the resilience of critical infrastructure, is often high as well. As climate change drives rising sea levels, intensifies storms, and more frequent heavy rain events, the ingredients for future disasters are dangerously aligned. Fortunately, we can make choices to help lower our physical and financial risks by investing in measures to increase coastal resilience and cut the carbon emissions that fuel accelerating sea level rise. Based on a figure from IPCC 2002.

# Repetitive-Loss Properties

Number of properties with  
two or more NFIP claims  
from 1978–2013 (by county)

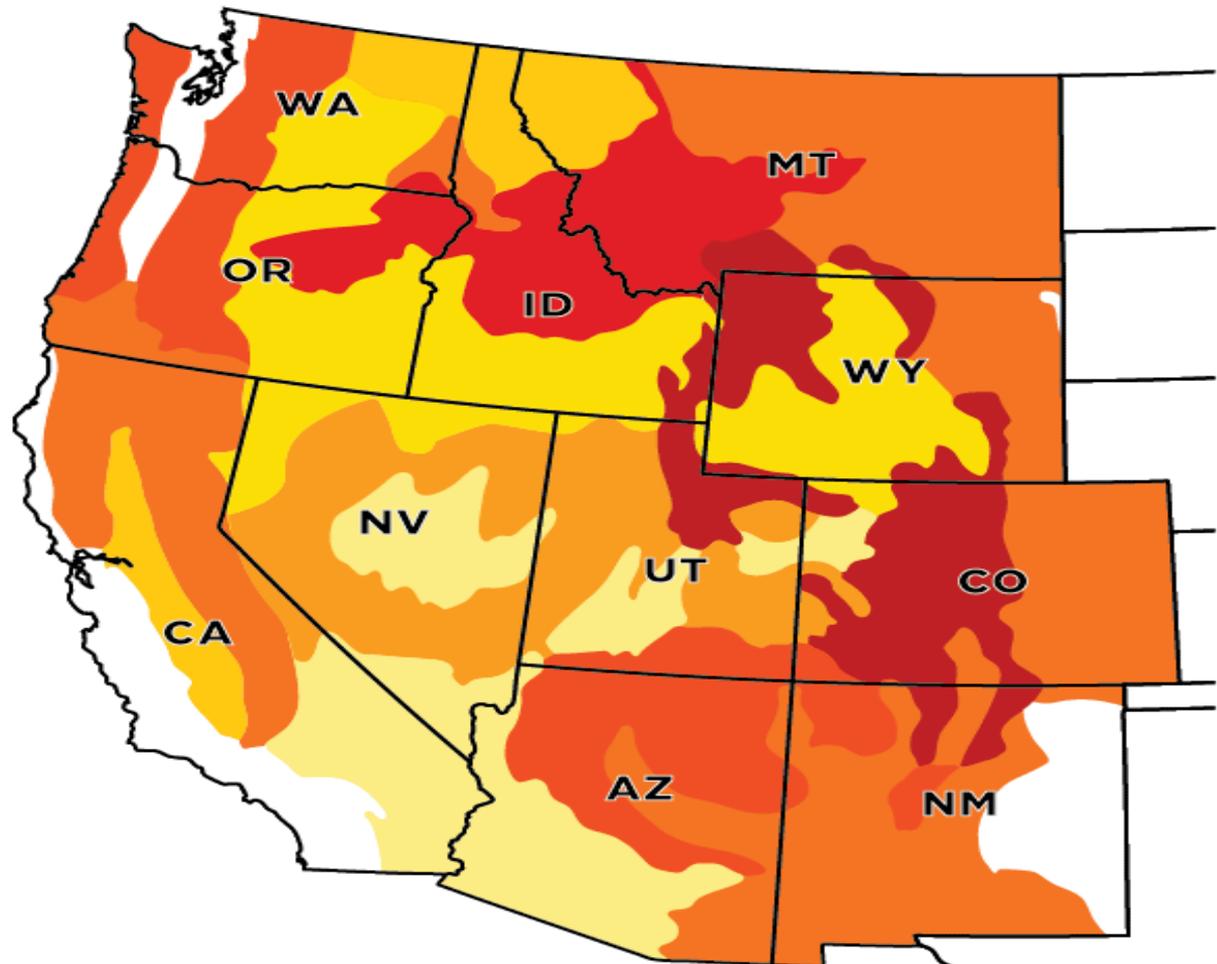


# NFIP's Growing Debt



Taxpayers are on the hook for large payouts and disaster relief after major storms

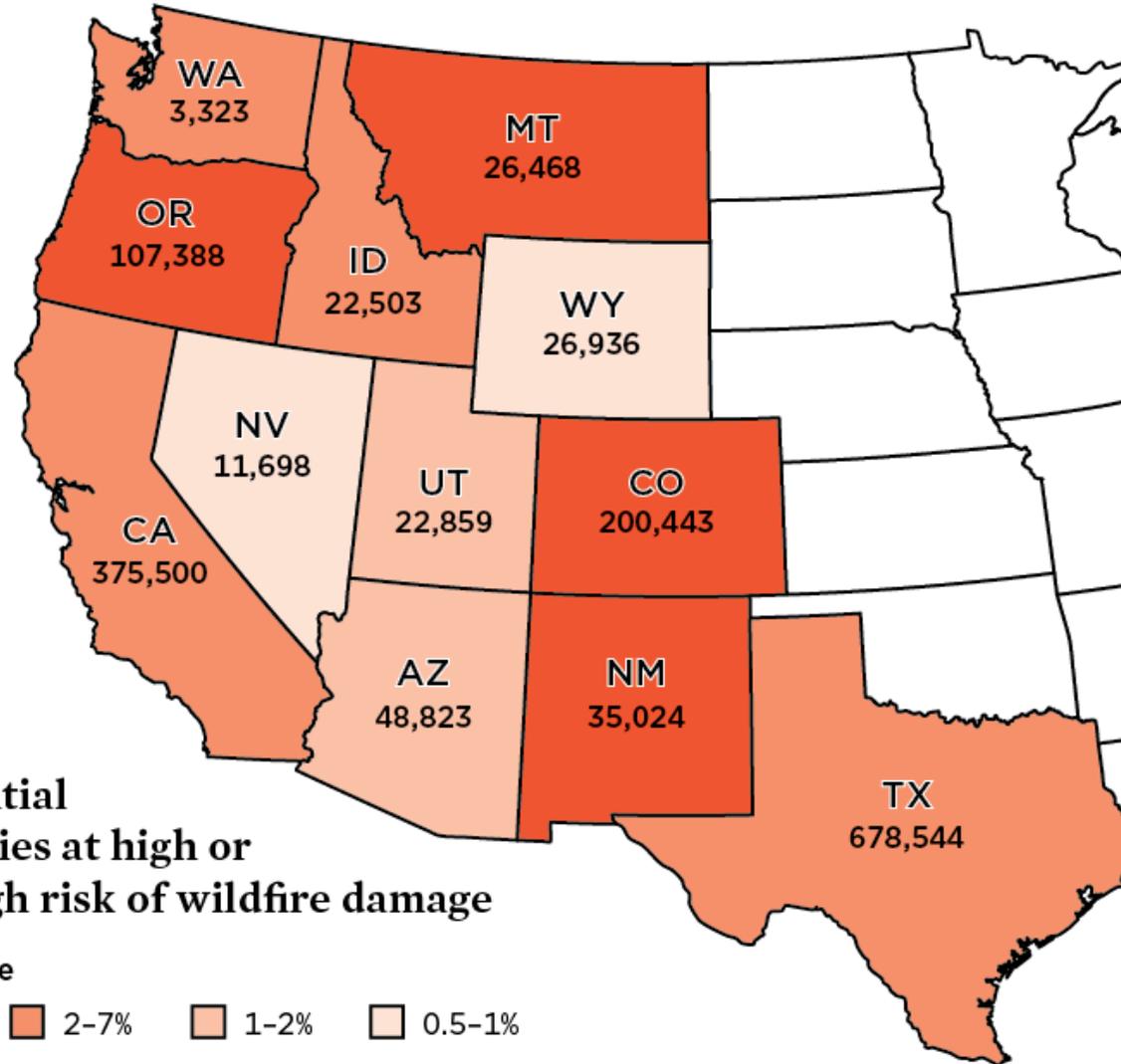
# Hotter, drier conditions elevate wildfire risks



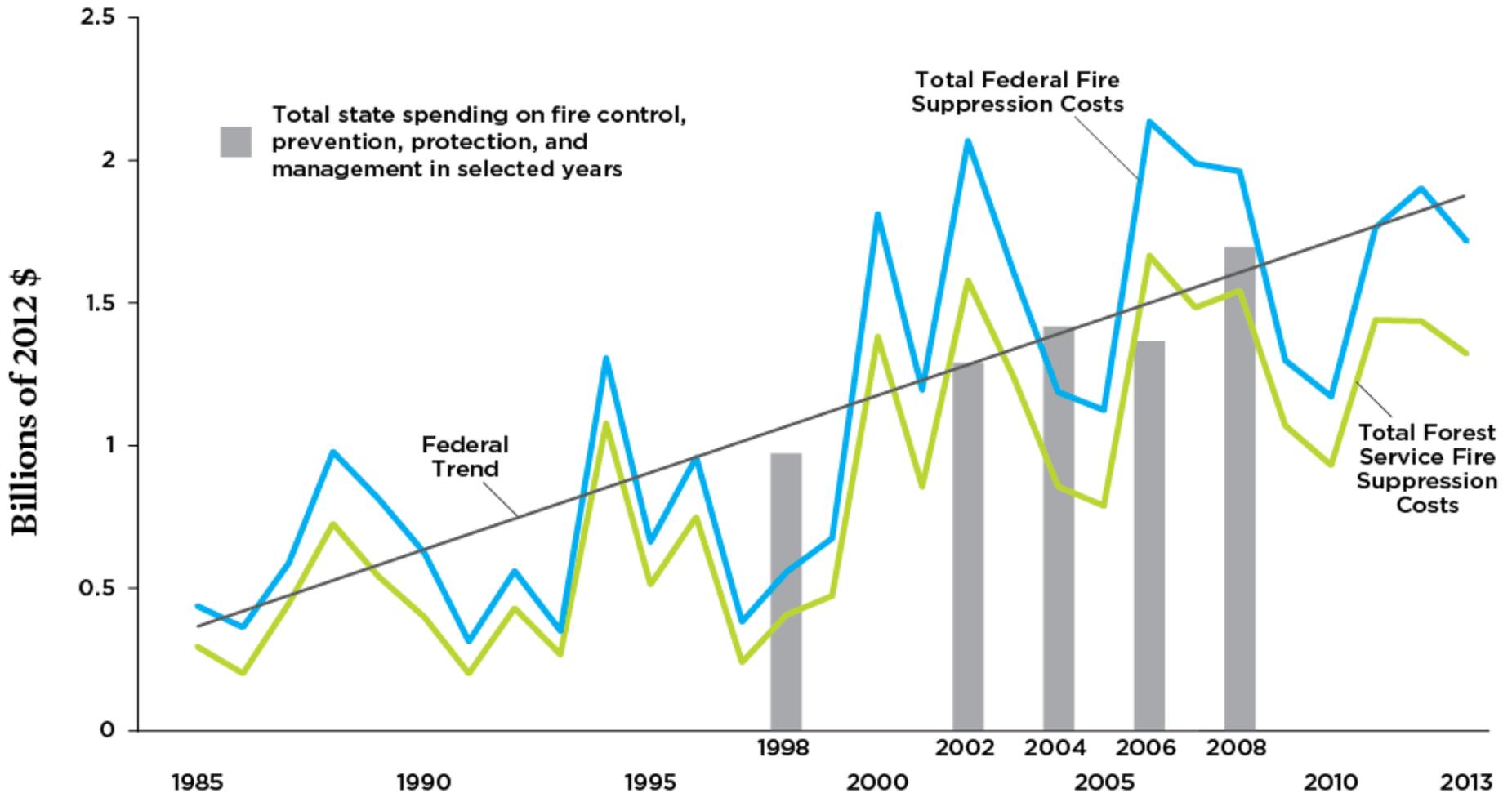
Projected increase in annual burn area with an additional 1.8°F rise in temperature



# Homes at risk from wildfires



# Growing costs of fire-fighting



# The Burden is Unequal

- Low-income communities are often the hardest-hit by major disasters
- Of the more than half a million households seeking federal aid after Hurricane Sandy, 43% had annual incomes of less than \$30,000



# Sensible Steps and Policies



- Mitigation
  - Reducing emissions
  - Ramping up renewable energy and efficiency
  - Putting a price on carbon
- Adaptation/Resilience
  - Actionable science
  - Defend/Accommodate/Retreat
  - Resilience fund

# President Obama's Climate Action Plan

- Clean Power Plan
- Heavy duty vehicle fuel economy standards
- Multi-sector methane strategy
- Clean energy R&D investments
- Resilience investments
- International cooperation

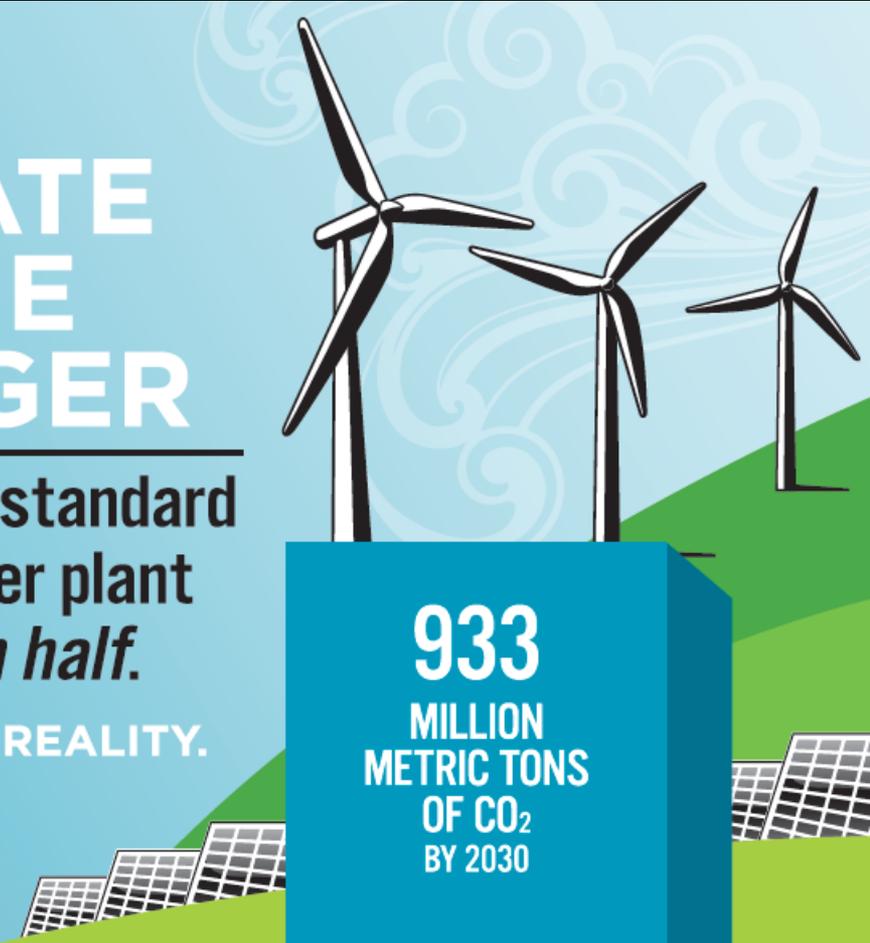


**2,043**  
MILLION  
METRIC TONS  
OF CO<sub>2</sub>  
IN 2013

# CLIMATE GAME CHANGER

Historic carbon standard  
could cut power plant  
emissions *in half*.

HELP MAKE IT A REALITY.



**933**  
MILLION  
METRIC TONS  
OF CO<sub>2</sub>  
BY 2030

[UCSUSA.org/ClimateGameChanger](http://UCSUSA.org/ClimateGameChanger)



**“Earth Rise” – Apollo 8, Christmas Eve, 1968**

# Questions or Comments?

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**For more information:**

[www.ucsusa.org/encroachingtides](http://www.ucsusa.org/encroachingtides)

[www.ucsusa.org/playingwithfire](http://www.ucsusa.org/playingwithfire)

[www.ucsusa.org/  
renewablesandcleanpowerplan](http://www.ucsusa.org/renewablesandcleanpowerplan)