



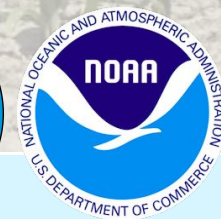
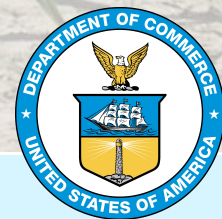
Role of Climate Science in Catalyzing a More Resilient Future

Dr. Sarah Kapnick

Chief Scientist

National Oceanic and Atmospheric Administration

chief.scientist@noaa.gov



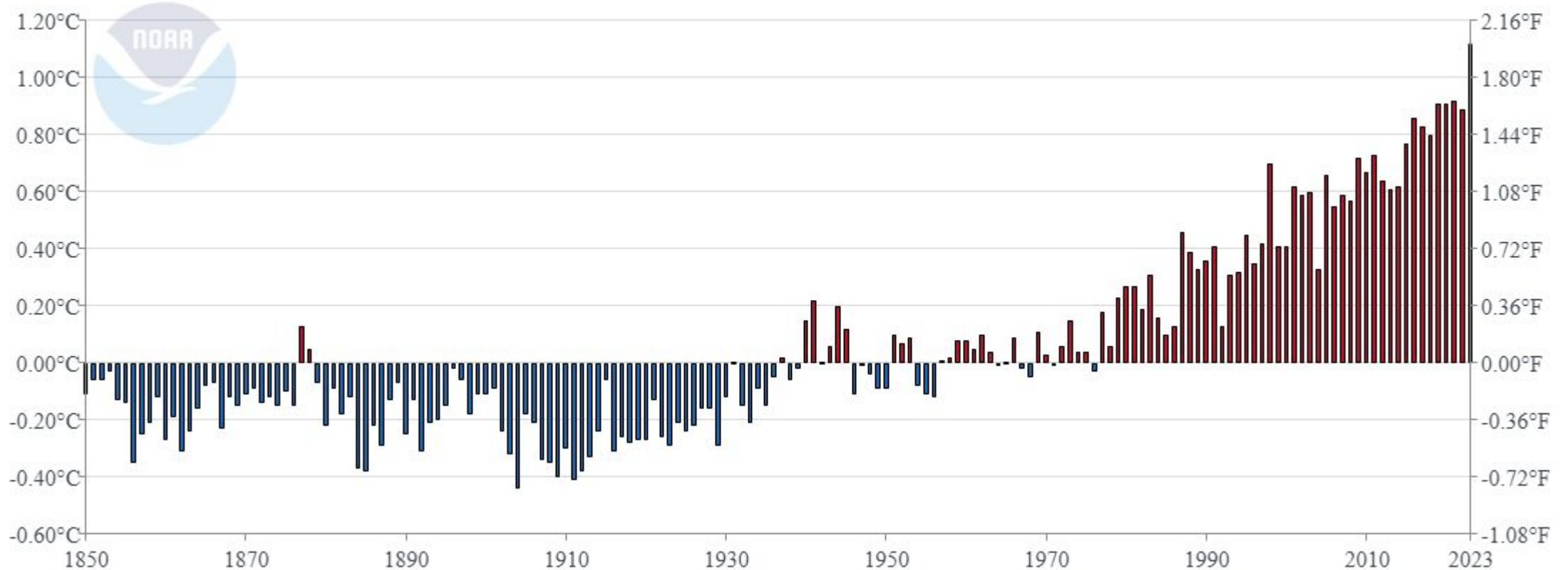




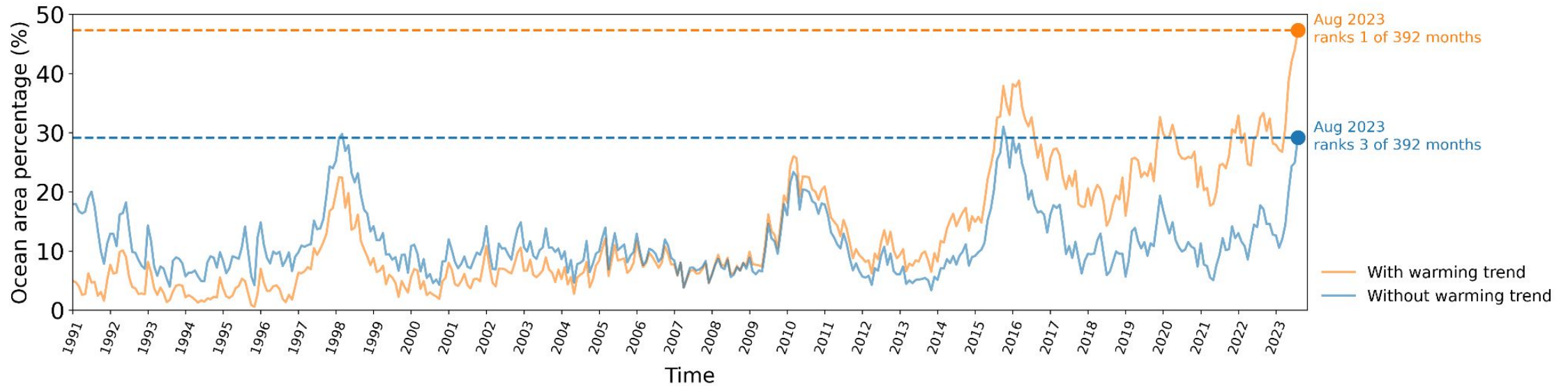
A Hot Summer: Exceeding Records For July By ~0.3c



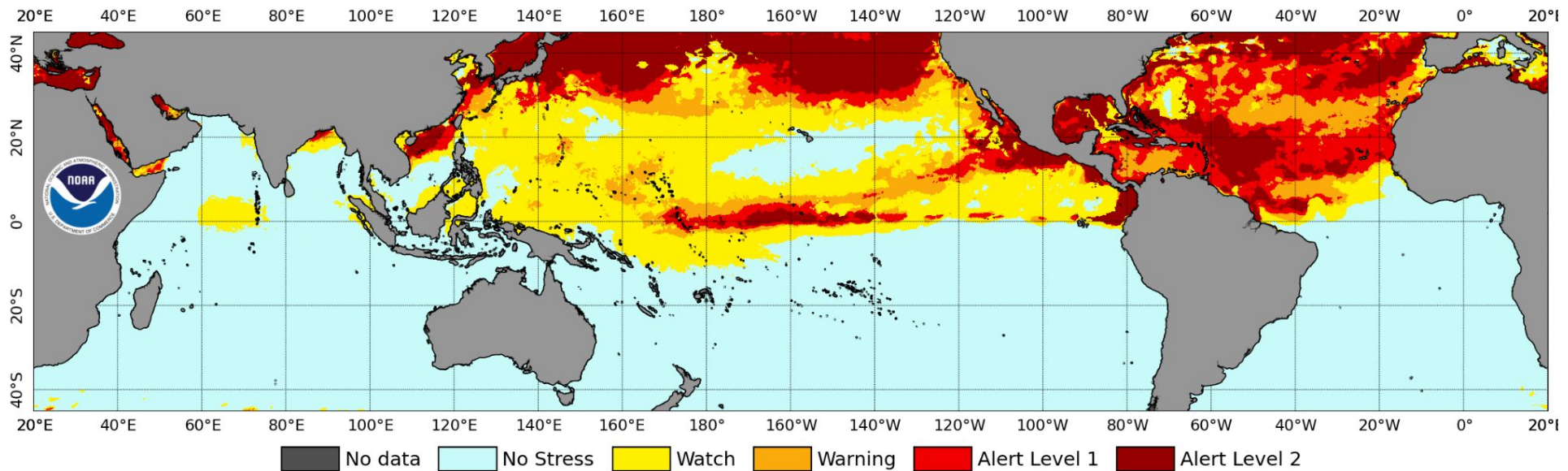
Global Land and Ocean
July Temperature Anomalies



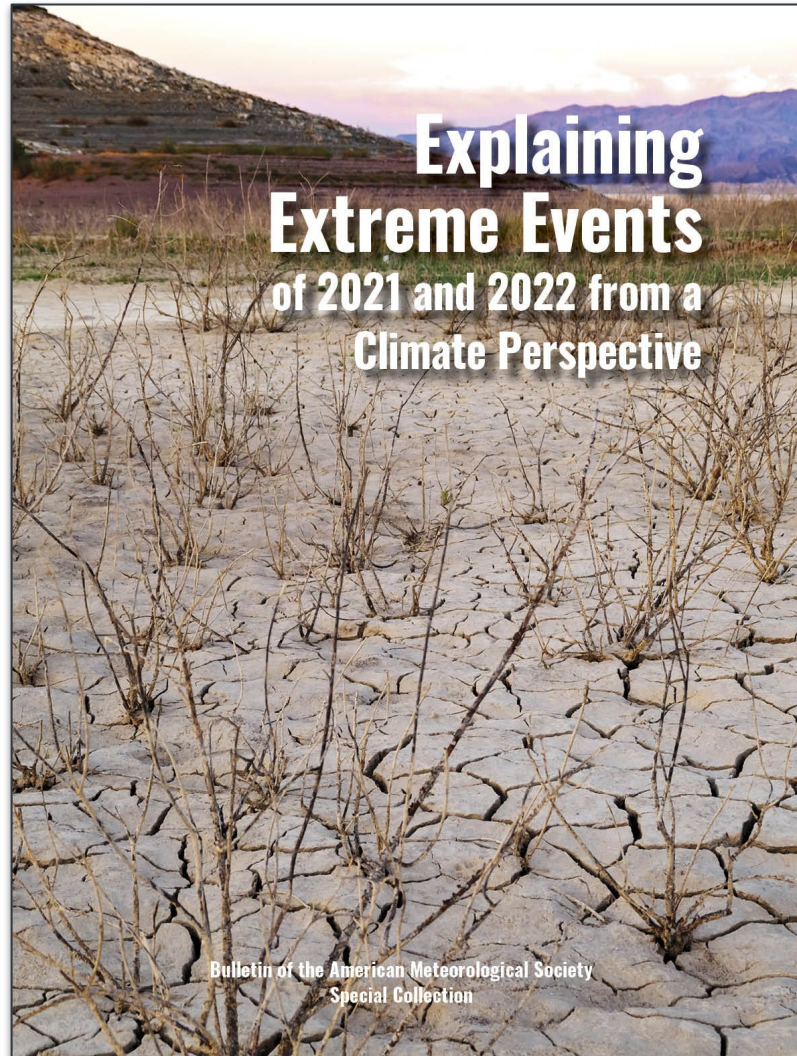
Marine Heatwaves & Impacts



NOAA Coral Reef Watch Daily 5km Bleaching Alert Area 7-day Maximum (v3.1) 5 Sep 2023



Climate Attribution Science: Magnitude and Likelihood of Events Globally Increasing

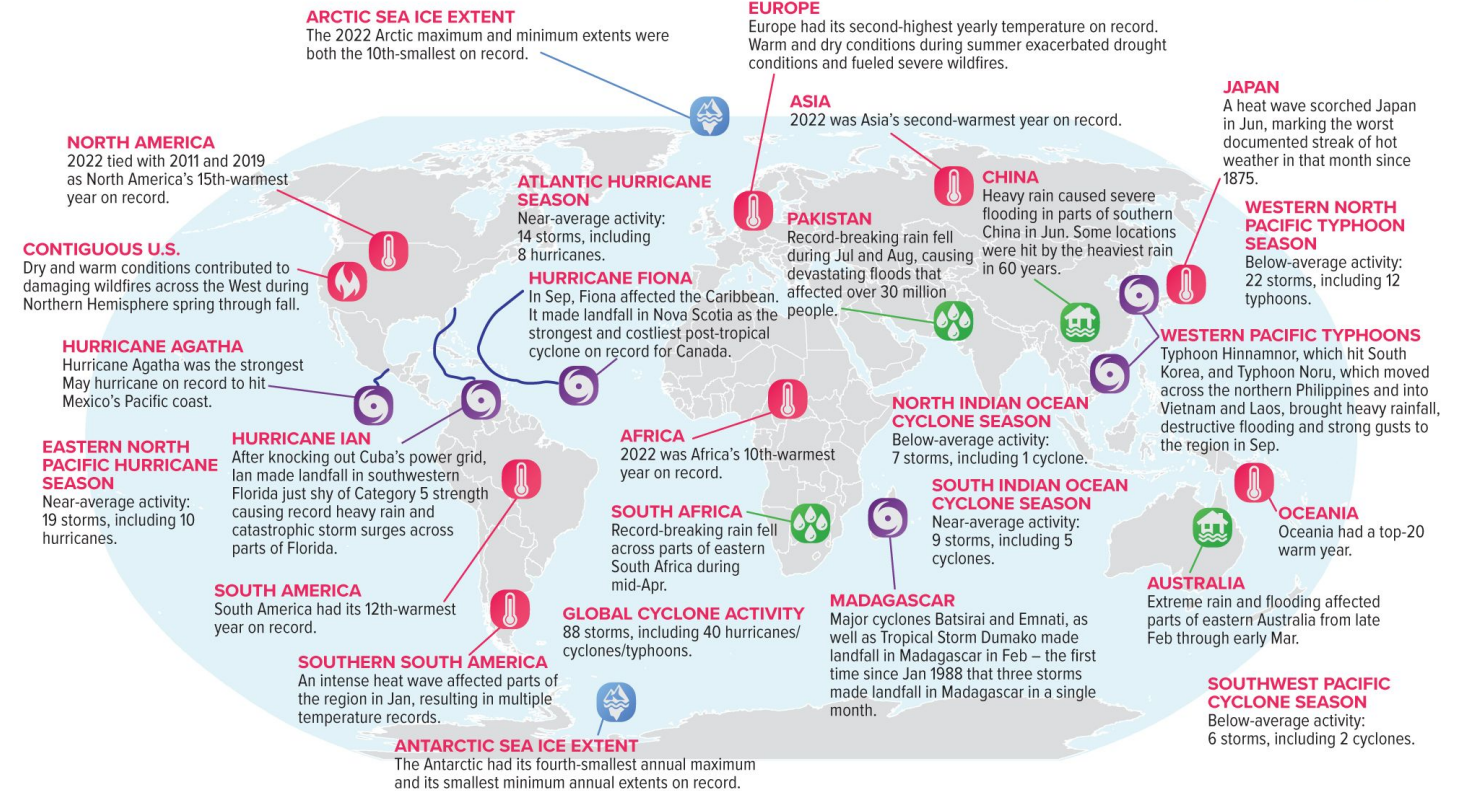


Selected Significant Climate Anomalies and Events in 2022



GLOBAL AVERAGE TEMPERATURE

The Jan-Dec 2022 average global surface temperature was the sixth highest since global records began in 1880.



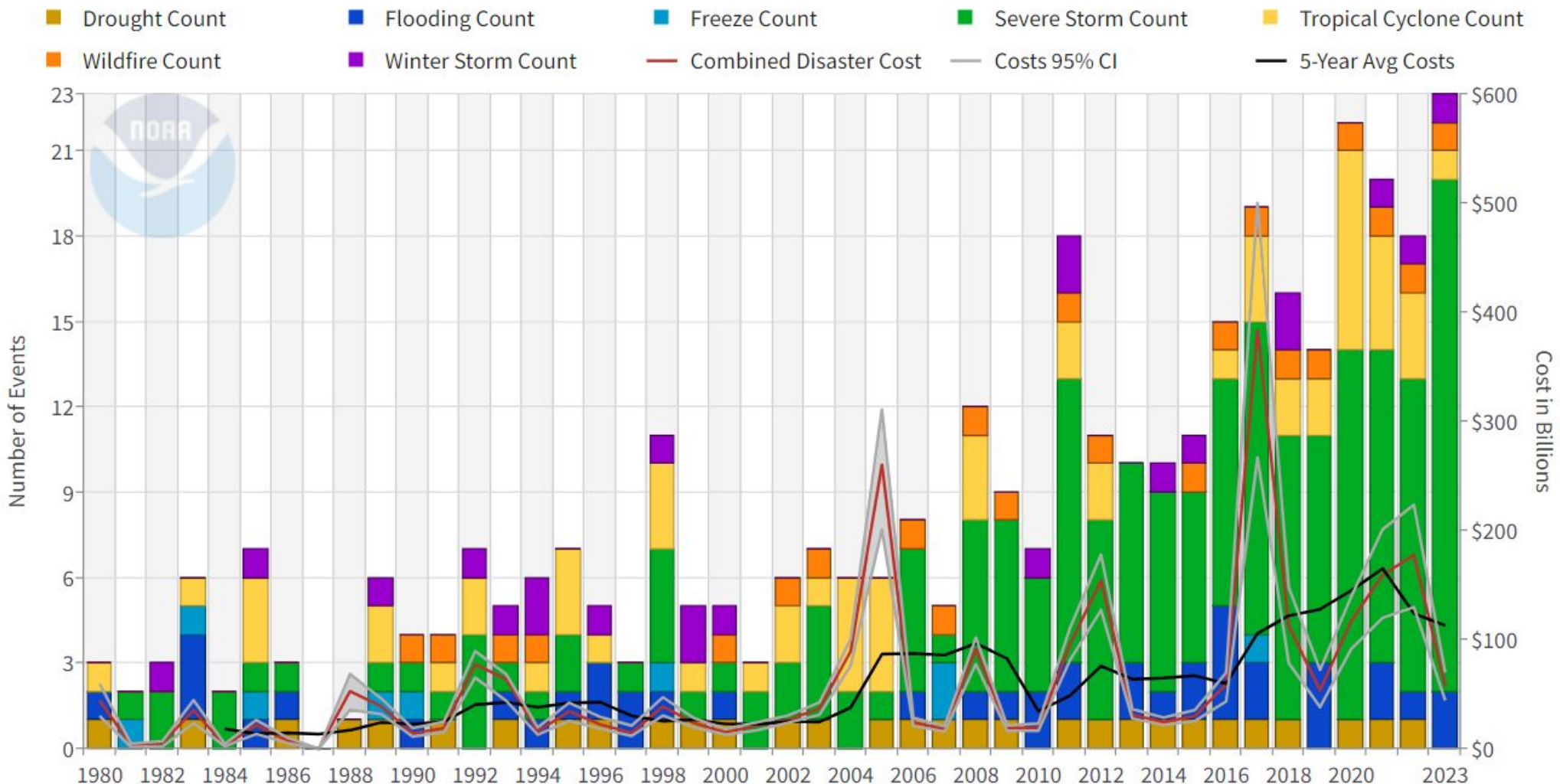
Please note: Material provided in this map was compiled from NOAA's State of the Climate Reports. For more information please visit: <https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/>



U.S. Extreme Weather and Climate Events: Cost & Number



United States Billion-Dollar Disaster Events 1980-2023 (CPI-Adjusted)



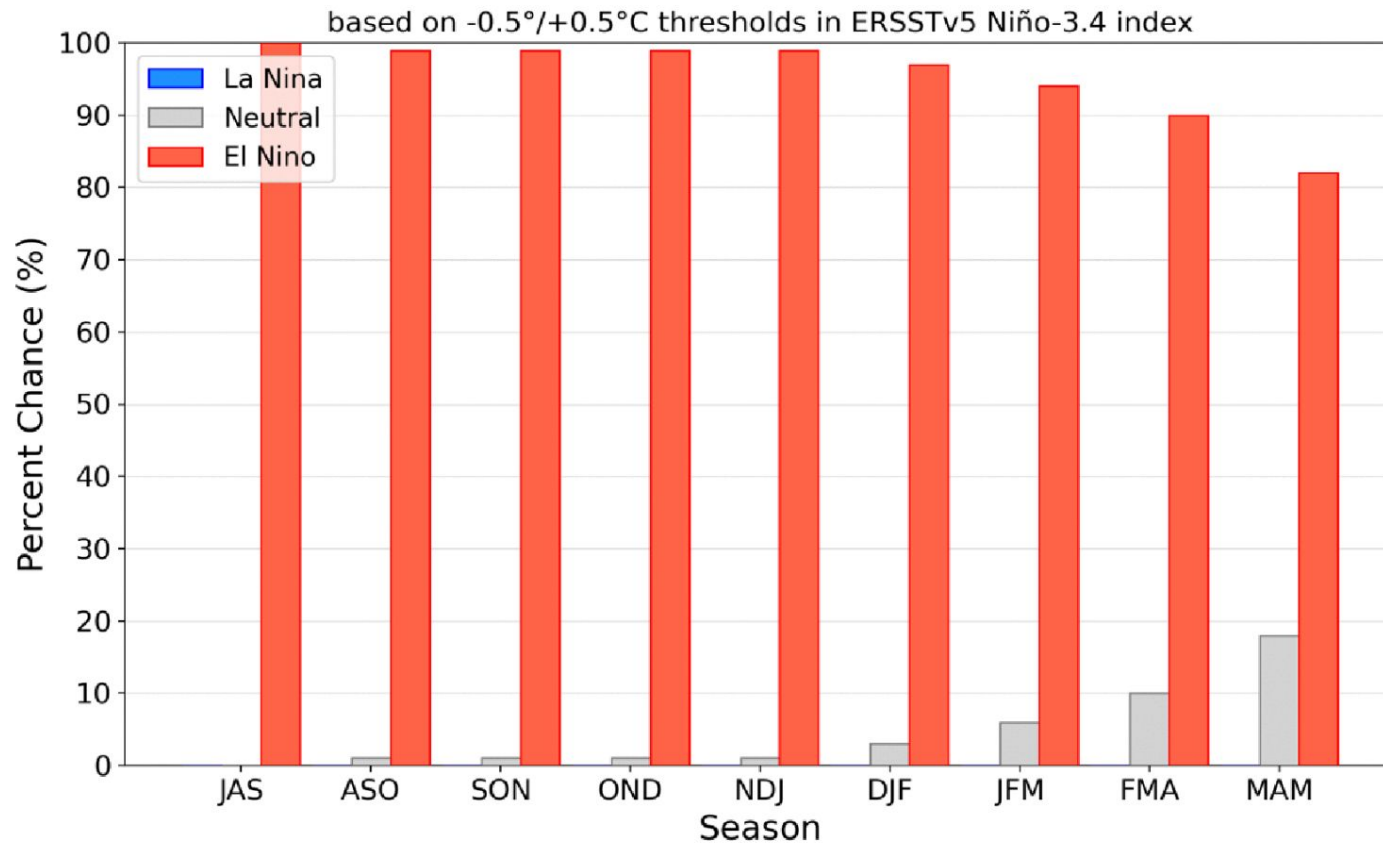
Updated: September 11, 2023

Powered by ZingChart

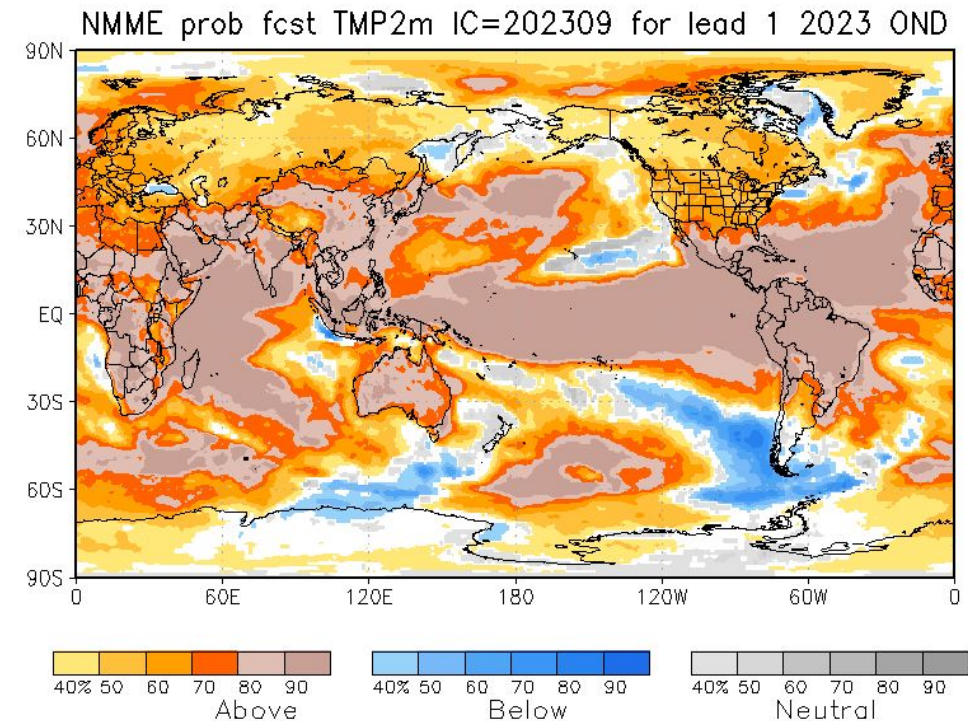


Seasonal Outlook: El Niño Developing

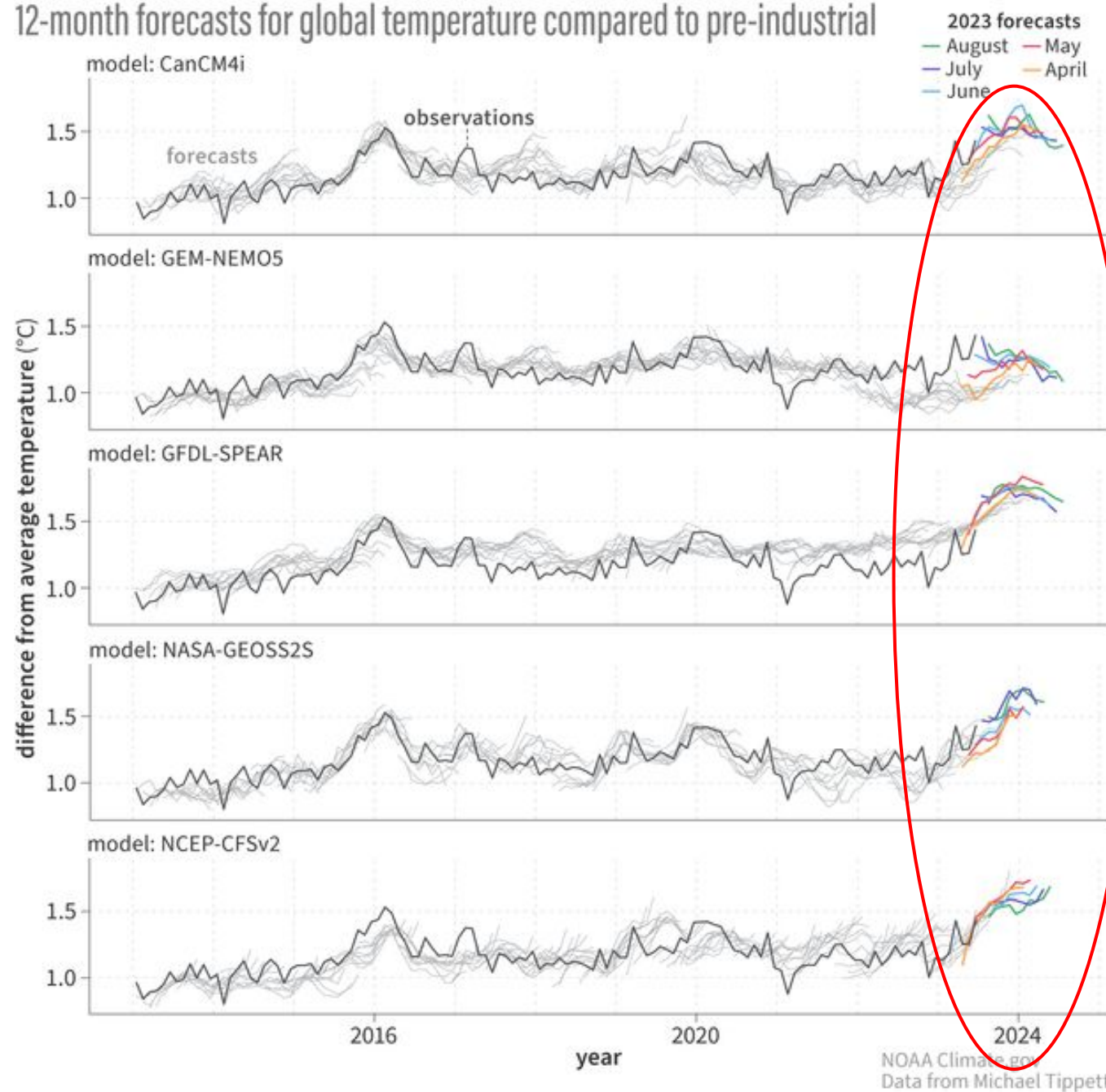
Official NOAA CPC ENSO Probabilities (issued Aug. 2023)



- 90% chance of at least a moderate El Niño (>1.0 C anomaly)
- 66% chance of a strong El Niño (>1.5 C anomaly)
- 30% chance of at least strength of 97-98 extreme El Niño

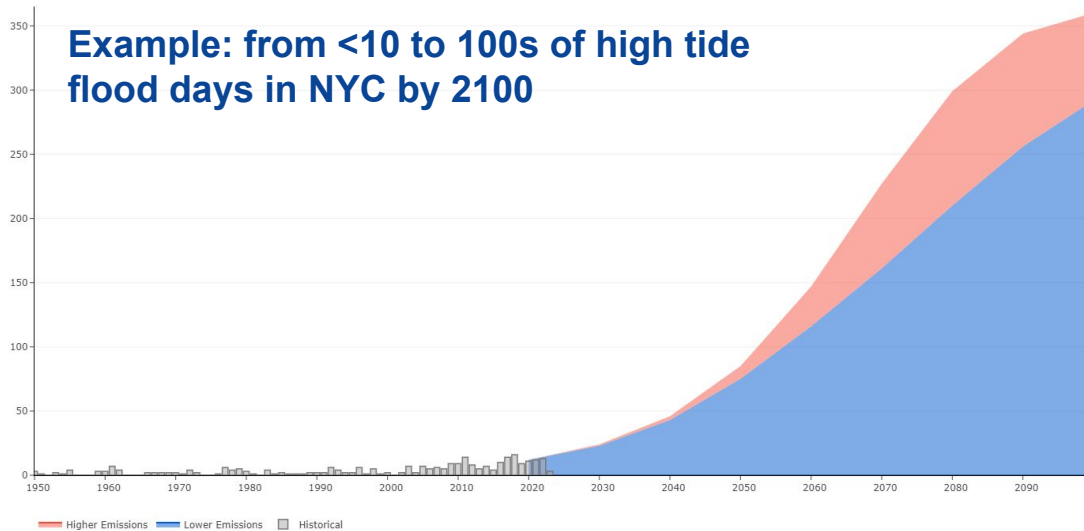
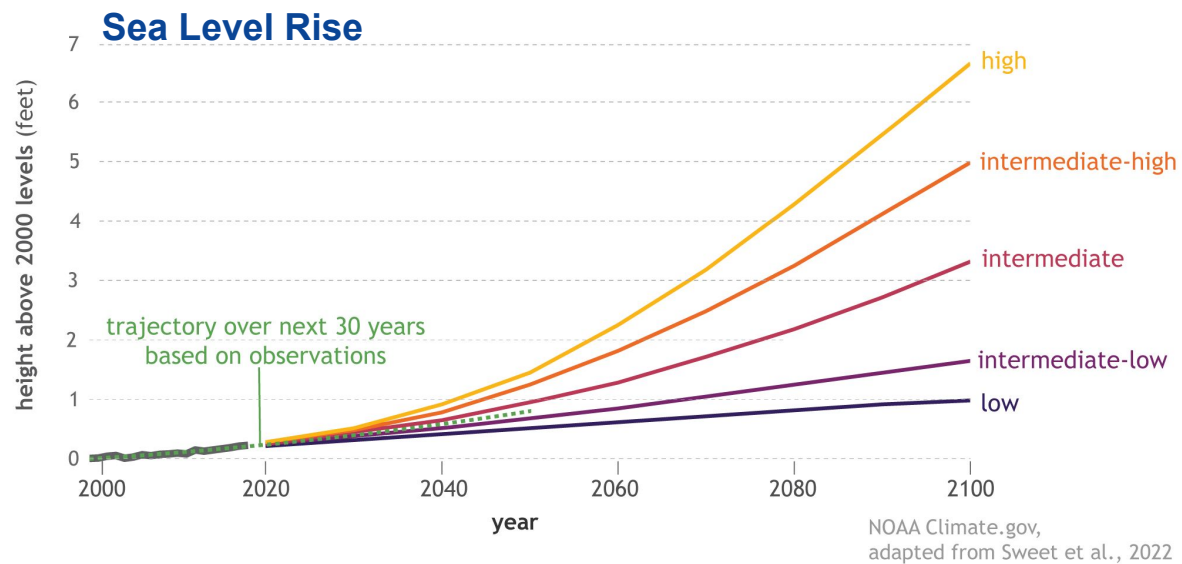


Impact of El Nino: Global Temperature through 2024





Projections

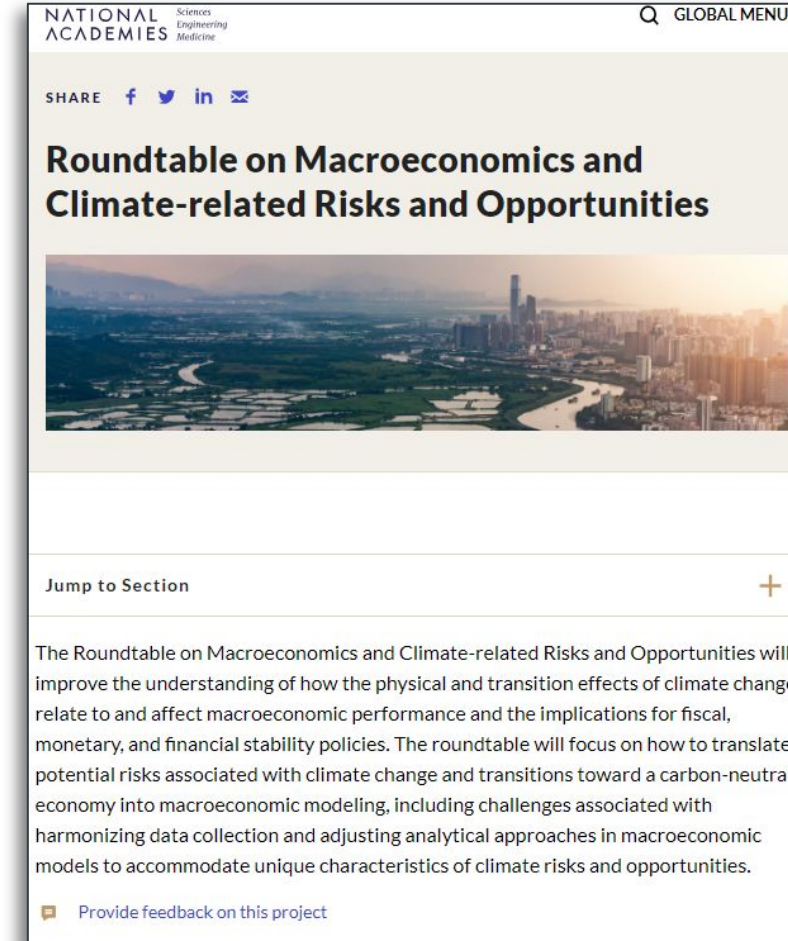
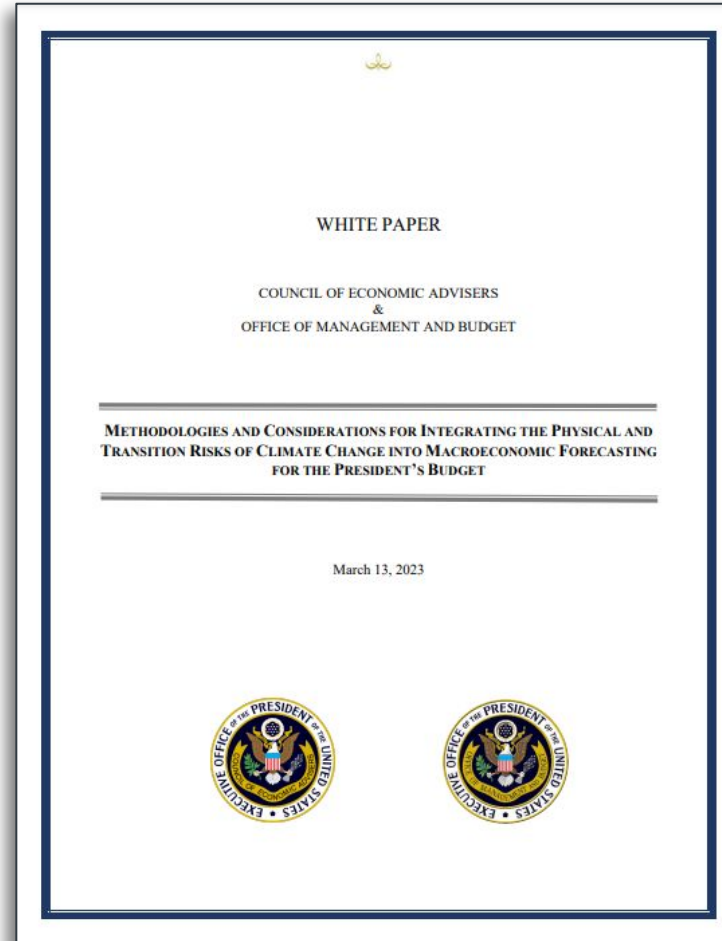
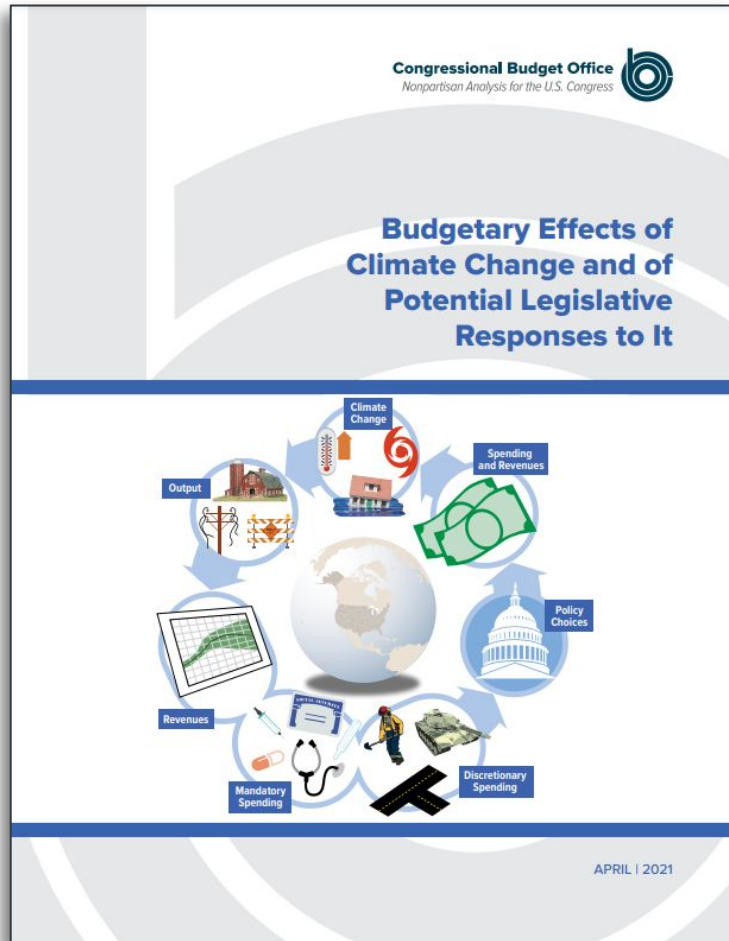


Accessing best of federal government projection information: **Climate Mapping for Resilience and Adaptation**
www.resilience.climate.gov



Integrating the Physical and Transition Risks of Climate Change Into Macroeconomic Models

Congressional Budget Office, Office of Management and Budget, National Academies





Climate Change in the Economic Report of the President

March 2023





NOAA and NSF to create research center in response to insurance industry climate needs

Focus areas: Across NOAA Topics: natural disasters , climate change

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May 16, 2023



Partnership Examples

Agreement between NOAA, ASCE prepares nation for climate-ready infrastructure

Focus areas: Climate, Research Topics: infrastructure, Climate-Ready Nation

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UPDATED: February 15, 2023. Updated to include the link to

February 2, 2023



NOAA, Microsoft team up to advance Climate-Ready Nation

Focus areas: Research Topics: climate

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November 30, 2022



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EPRI, NOAA Sign MOU on Energy Sector Physical Climate Risk Assessment

Aug 9, 2022

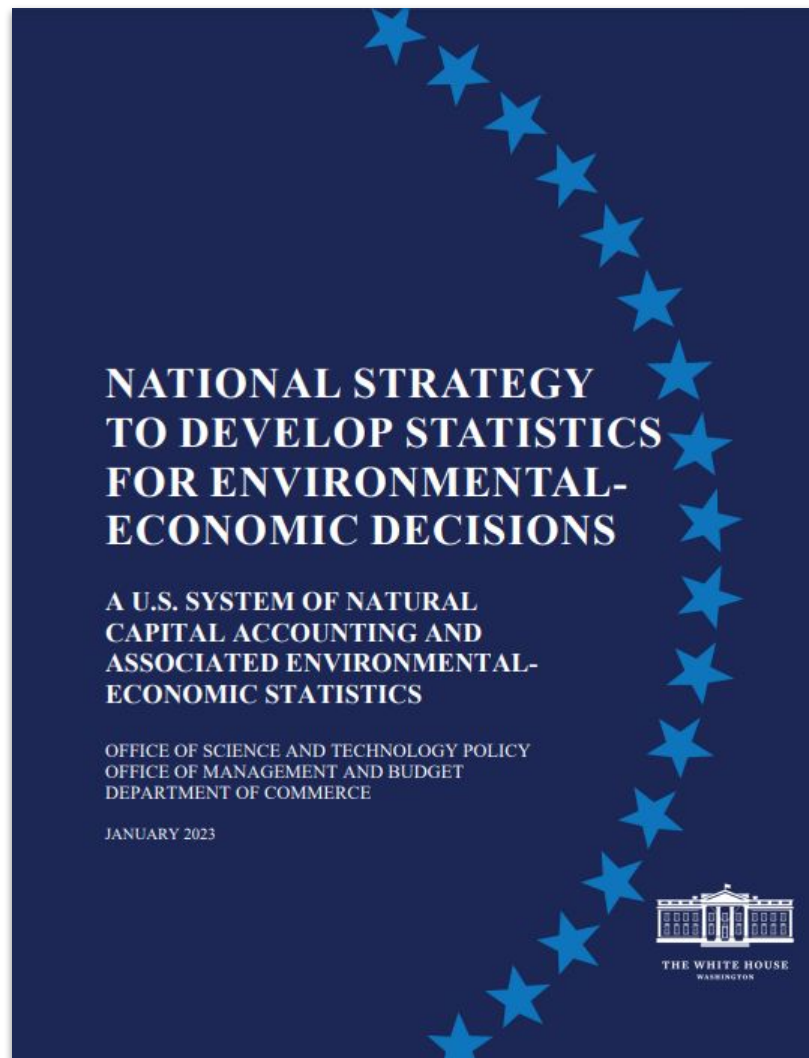
Los Angeles, Calif. (Aug. 9, 2022) -- EPRI and NOAA are pleased to announce they have entered into a three-year memorandum of understanding (MOU) focused on developing a scientifically based approach to physical climate risk assessment in the energy sector.

As extreme weather increases in frequency and intensity, along with society's dependence on electricity, it's imperative there is a consistent approach to the assessment of physical climate risks, such as understanding the increasing probability and intensity of hazards like extreme precipitation, heatwaves, and hurricanes, driven by potential changes in climate. Earlier this year, EPRI launched **Climate READI™: Power** (REsilience and ADaptation initiative), convening global thought leaders and industry stakeholders to address power system climate resilience and adaptation. NOAA is one of the first governmental stakeholders to join the collaborative effort.

Under the MOU, the organizations agreed to share publicly available knowledge, data, industry specific research, and ideas related to physical climate risk assessment, while leveraging respective resources, expertise, and facilities, among other provisions.



National Strategy to Develop Statistics for Environmental Economic Decisions





Partnership: NIHHIS heat.gov



HEAT.gov

National Integrated Heat Health Information System

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Welcome to HEAT.gov

Heat related illnesses and death are largely preventable with proper planning, education, and access to heat and health information for the most vulnerable communities.

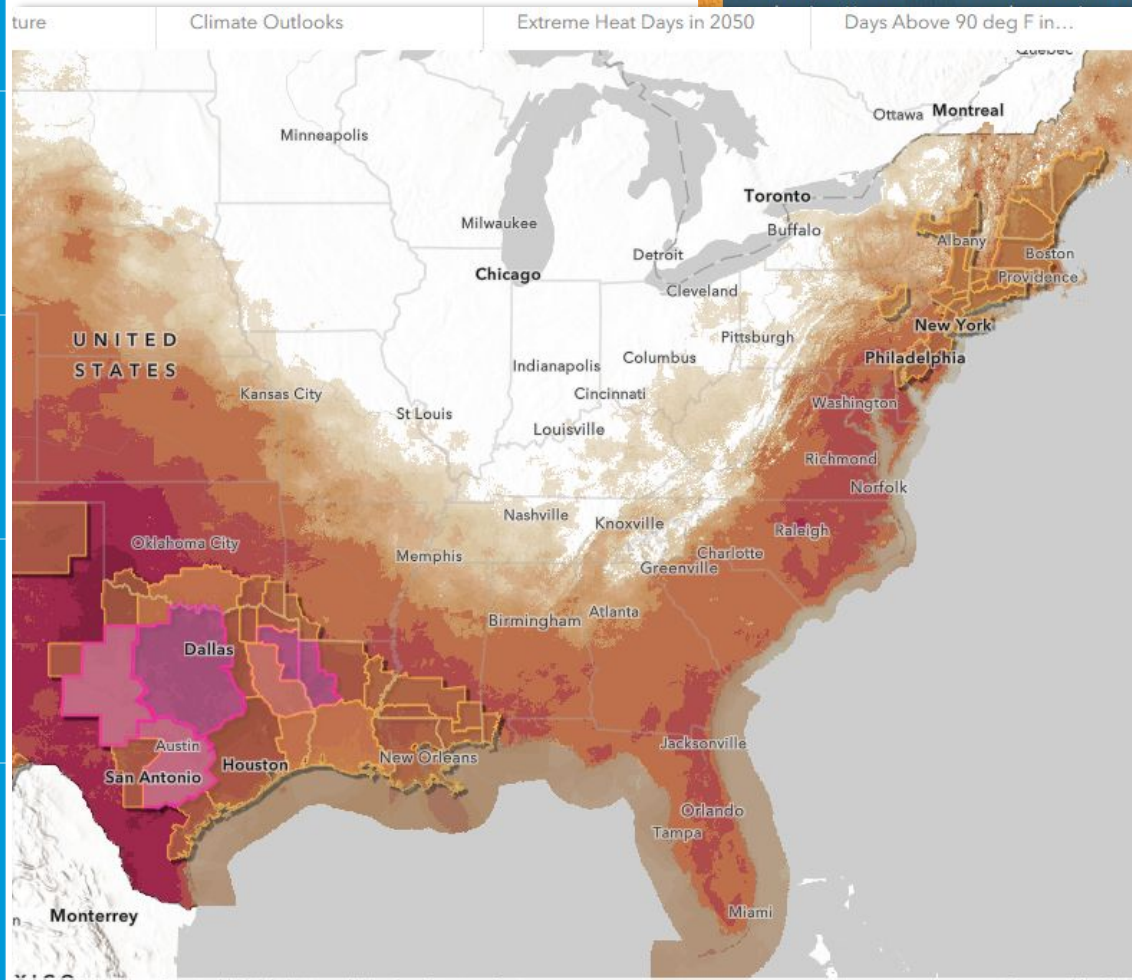
National Integrated Heat Health Information System

News

[Register for NIHHIS National 2023](#)

[Announcing the 2023 NIHHIS-CAPA UHI Mapping Communities](#)

[Upcoming NIHHIS Heat Season Awareness Social Media Campaign](#)



Who is at Risk to
Extreme Heat



Climate and Health
Outlook

Heat Forecast

USA Weather Watches and Warnings

Heat advisories, watches, warnings



Excessive Heat Warning



Excessive Heat Watch



Heat Advisory





NOAA Climate Information Resources

NCEI: <https://www.ncei.noaa.gov/>



Sea Level Rise Viewer: <https://coast.noaa.gov/slr/>

NOAA Climate.gov: <https://www.climate.gov/>

U.S. Climate Resilience Toolkit: <https://toolkit.climate.gov/>



Climate Mapping for Resilience and Adaptation: <https://resilience.climate.gov/>

National Integrated Heat Health Information System: <https://www.heat.gov/>

National Integrated Drought Information System: <https://www.drought.gov/>



Climate Adaptation Partnerships Program:

<https://cpo.noaa.gov/Divisions-Programs/Climate-and-Societal-Interactions/CAP-RISA>



Billion Dollar Weather and Climate Disasters: <https://www.ncei.noaa.gov/access/billions/>

Global Climate Report:

<https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202301>



[An Evidence-based Collaborative Framework for Improving Predictive Capabilities](#)

[2022 Sea Level Rise Technical Report](#)