



STORMS, FLOODING, & SEA LEVEL DEFENSE CONFERENCE 2024



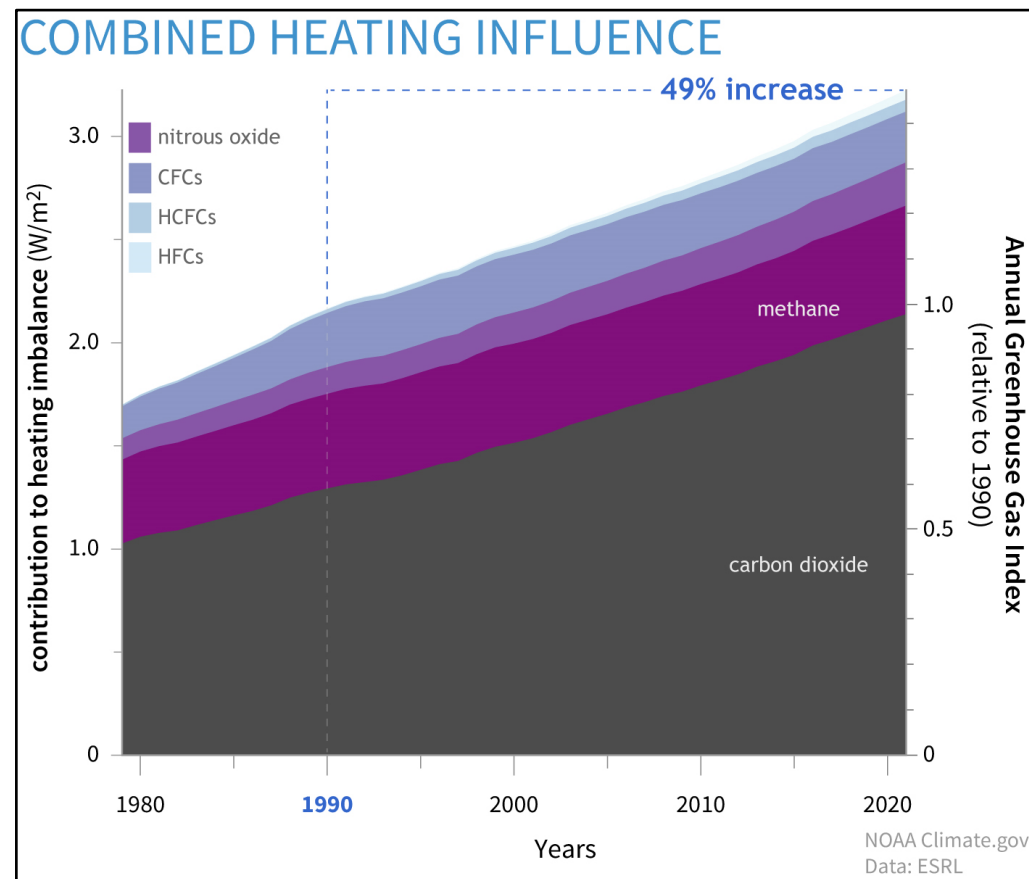
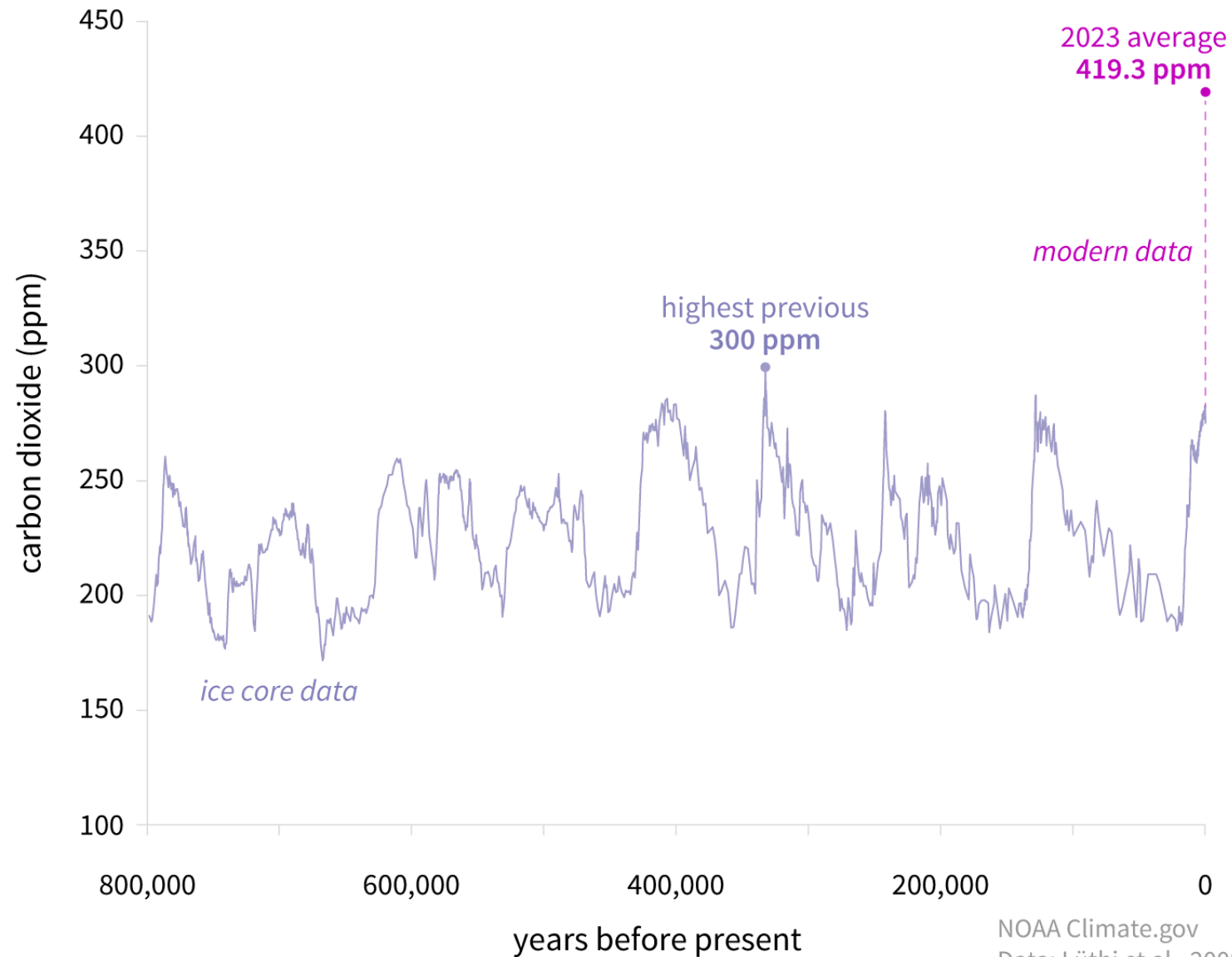
Photo CalCoastalCommission

Warning Coordination Meteorologist – Brian Garcia



Greenhouse Gases

CARBON DIOXIDE OVER 800,000 YEARS

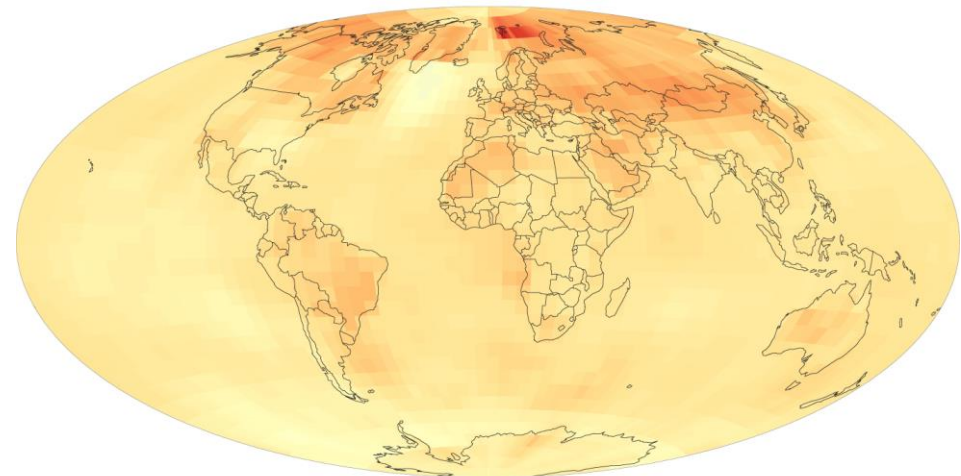


Surface (2m) Air Temperature

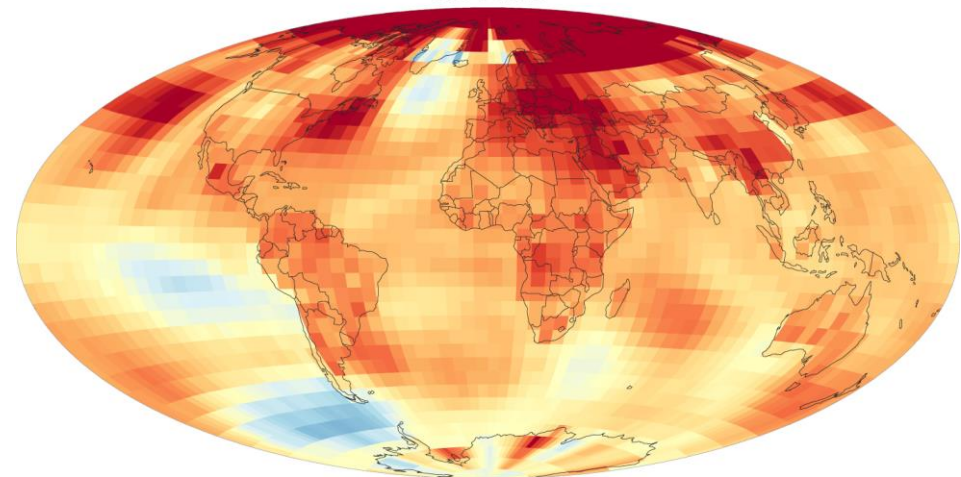
GLOBAL AVERAGE SURFACE TEMPERATURE

WARMING OVER PAST 30 YEARS IS MUCH FASTER THAN LONG-TERM TREND

1901-2023



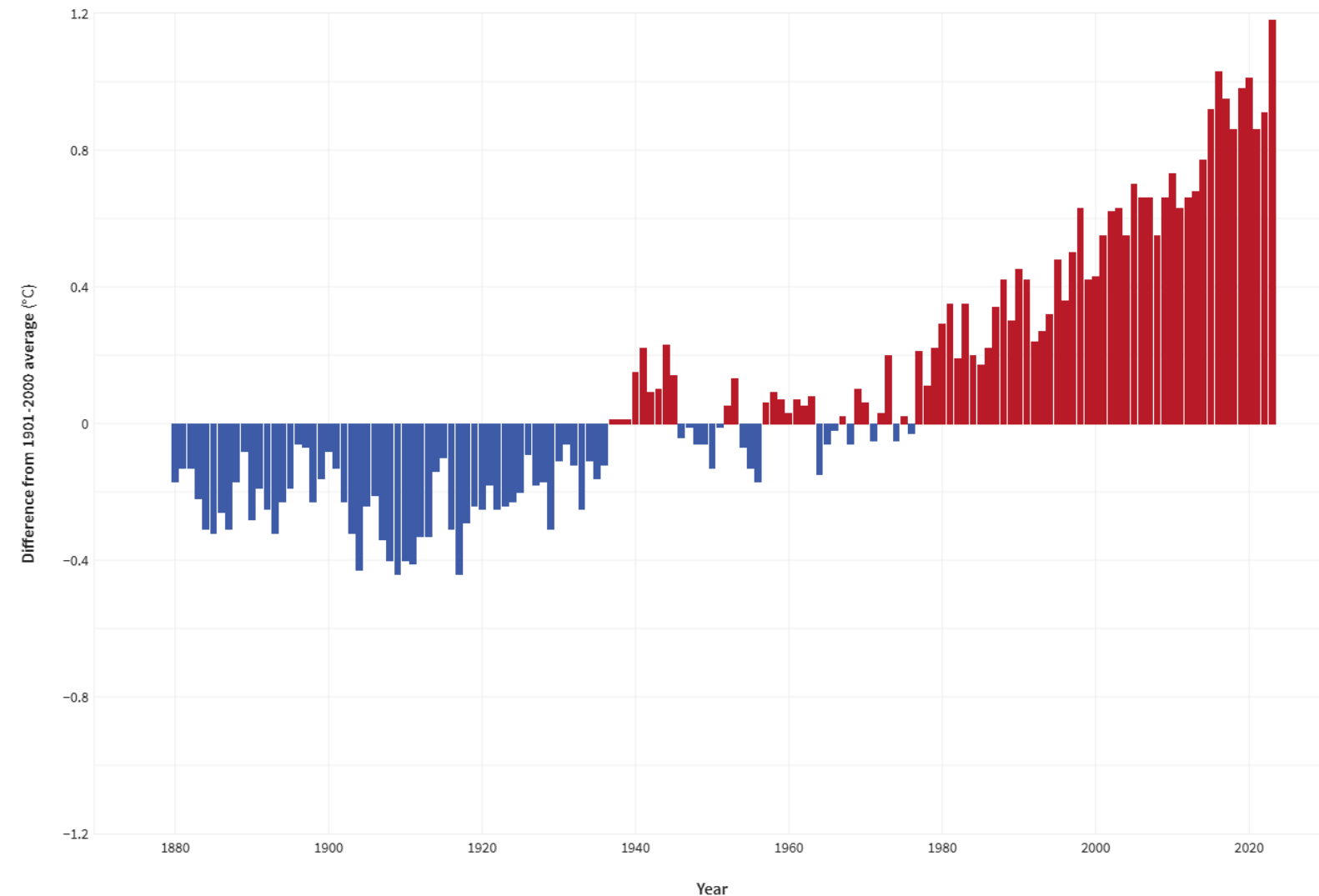
1994-2023



Change in temperature ($^{\circ}\text{F}/\text{decade}$)

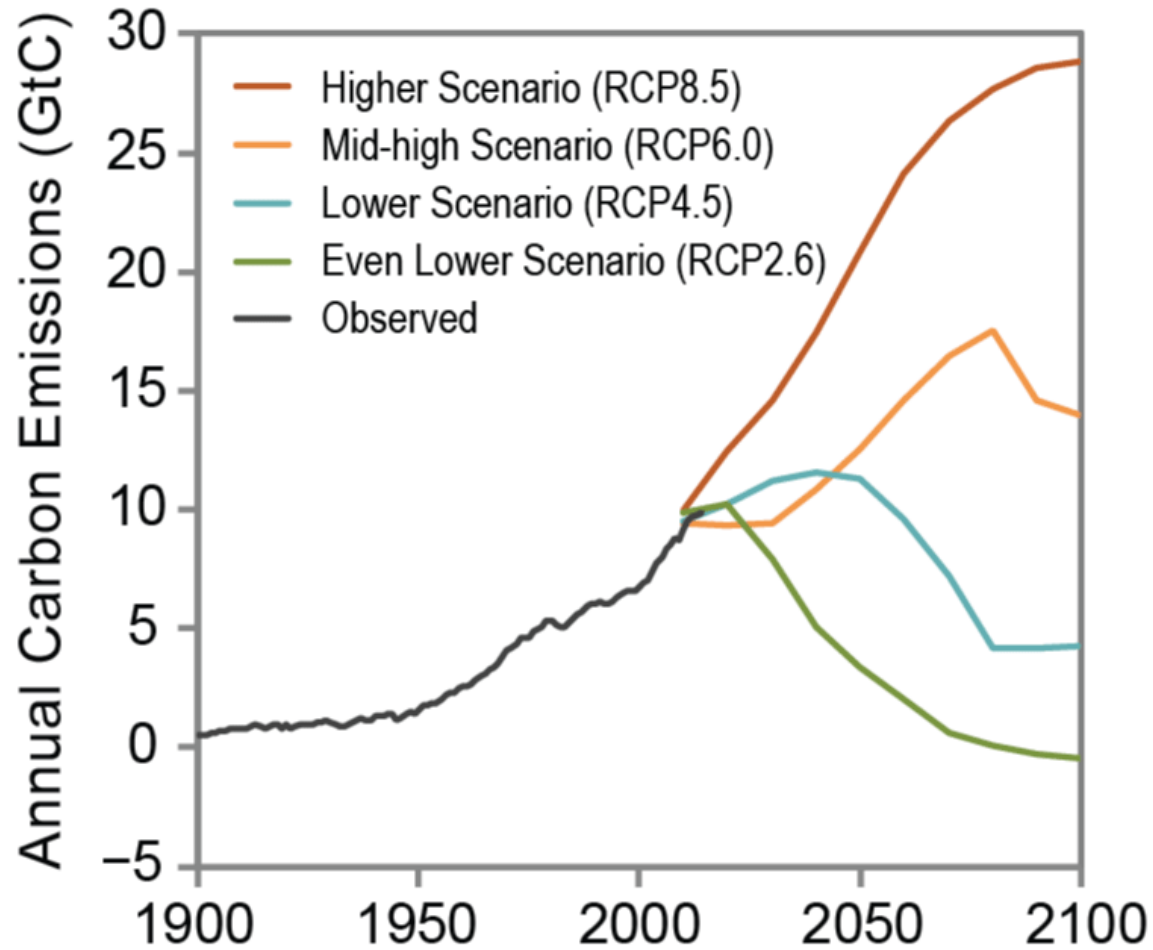


NOAA Climate.gov
Data: NCEI

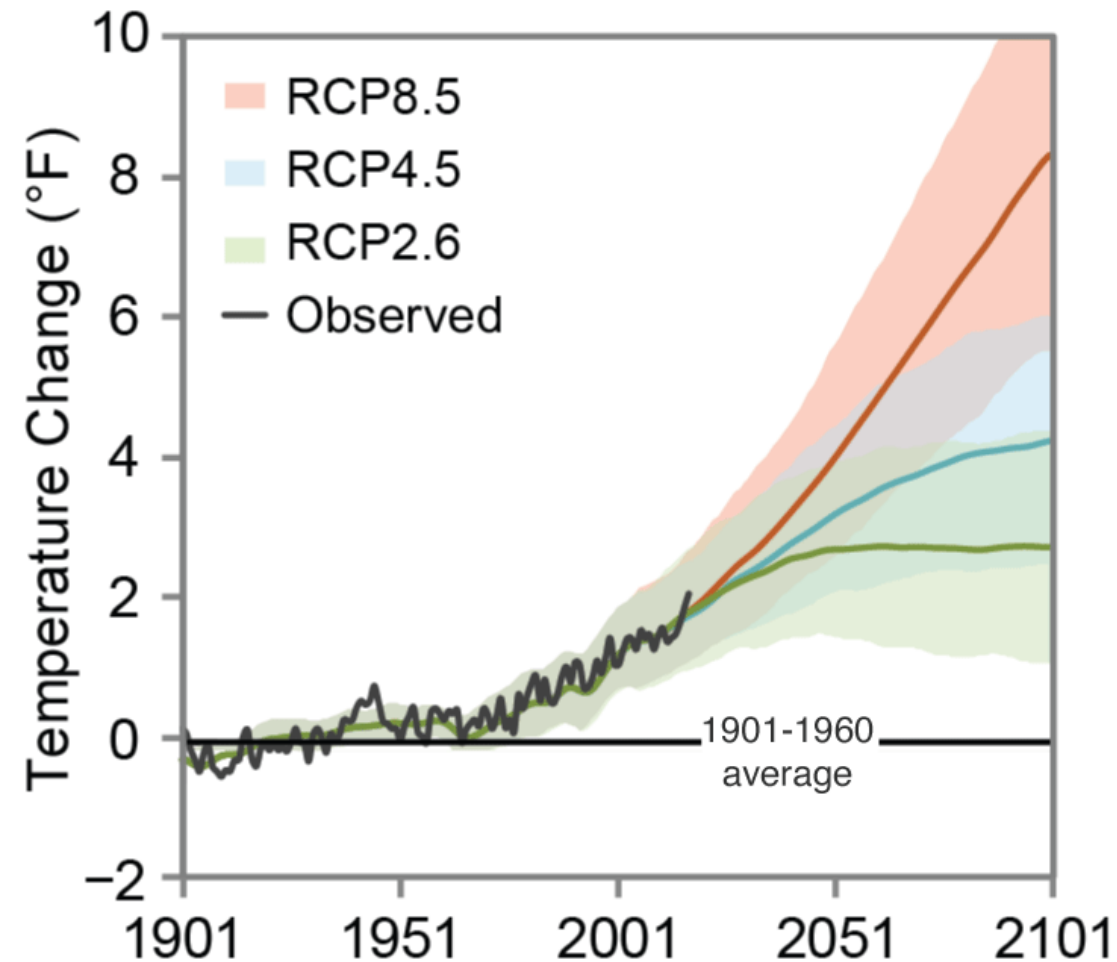


Projected GHG Emissions and Global Temperatures

Projected Annual Global Carbon Emissions



Projected Global Temperatures





In the News

NOVEMBER 7, 2024 | 2 MIN READ

Earth Will Exceed 1.5 Degrees Celsius of Warming This Year

This year won't just be the hottest on record—it could be the first to surpass 1.5 degrees Celsius. The Paris climate accord aims to keep warming below that level when looking over multiple years

BY ANDREA THOMPSON

Scientific America

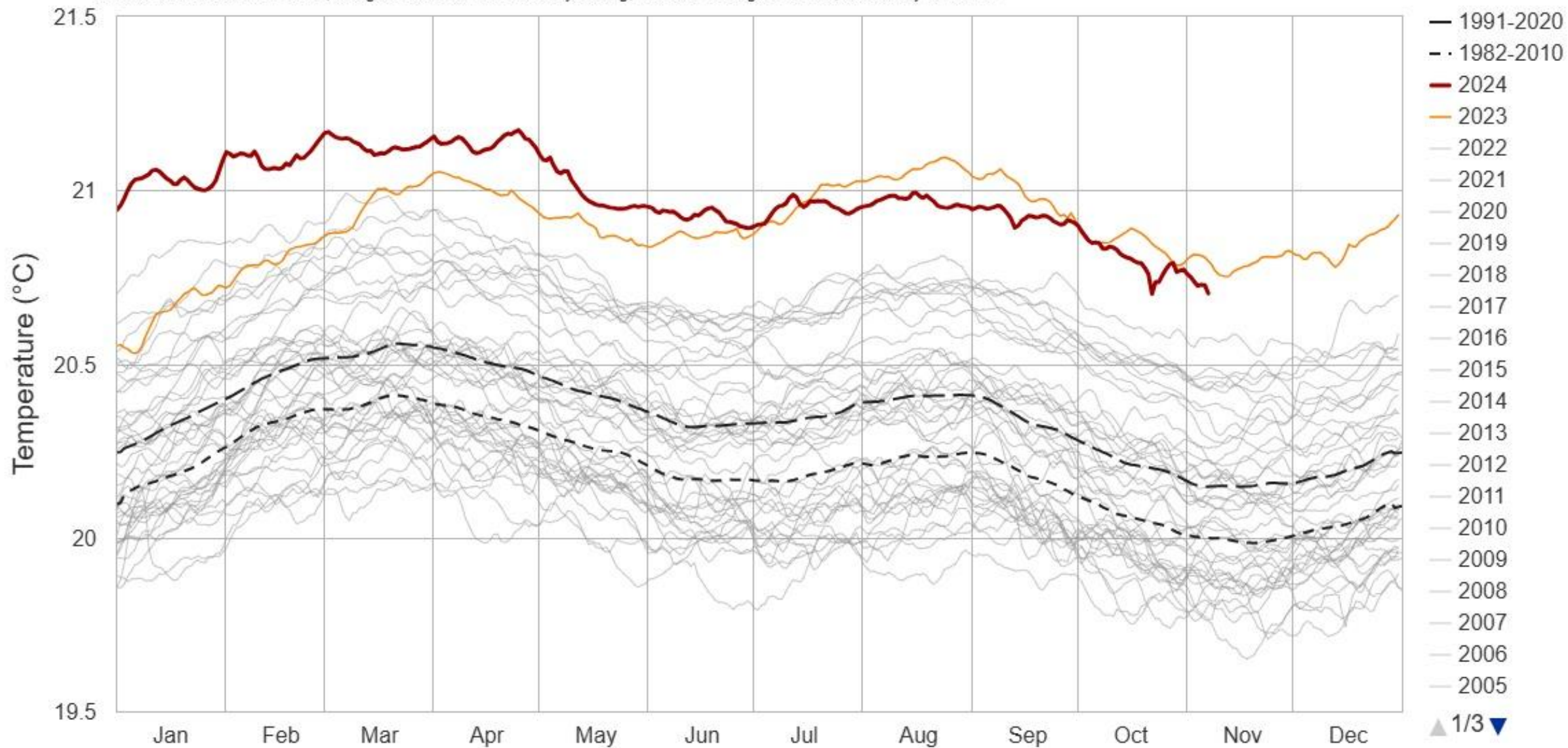
<https://www.scientificamerican.com/article/2024-will-be-the-first-year-to-exceed-the-1-5-degree-celsius-warming/>



Global Sea Surface Temperature

Daily Sea Surface Temperature, World (60°S–60°N, 0–360°E)

Dataset: NOAA OISST V2.1 | Image Credit: ClimateReanalyzer.org, Climate Change Institute, University of Maine

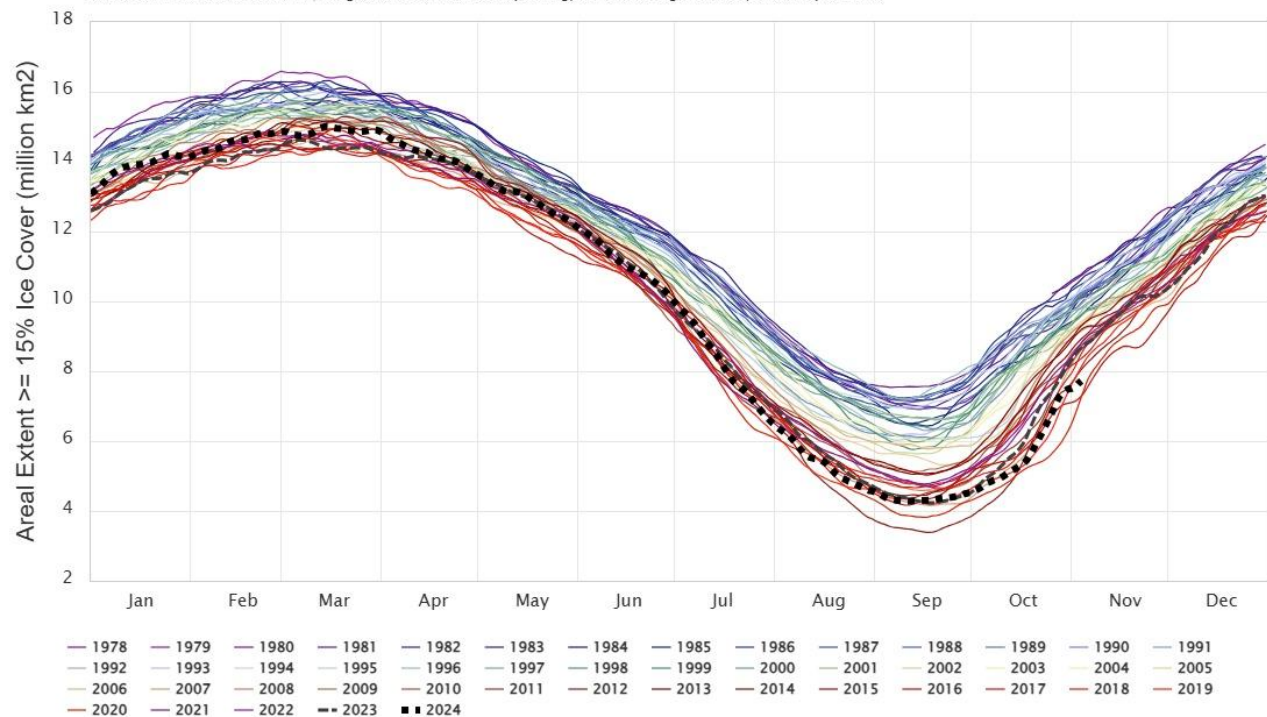




Sea Ice

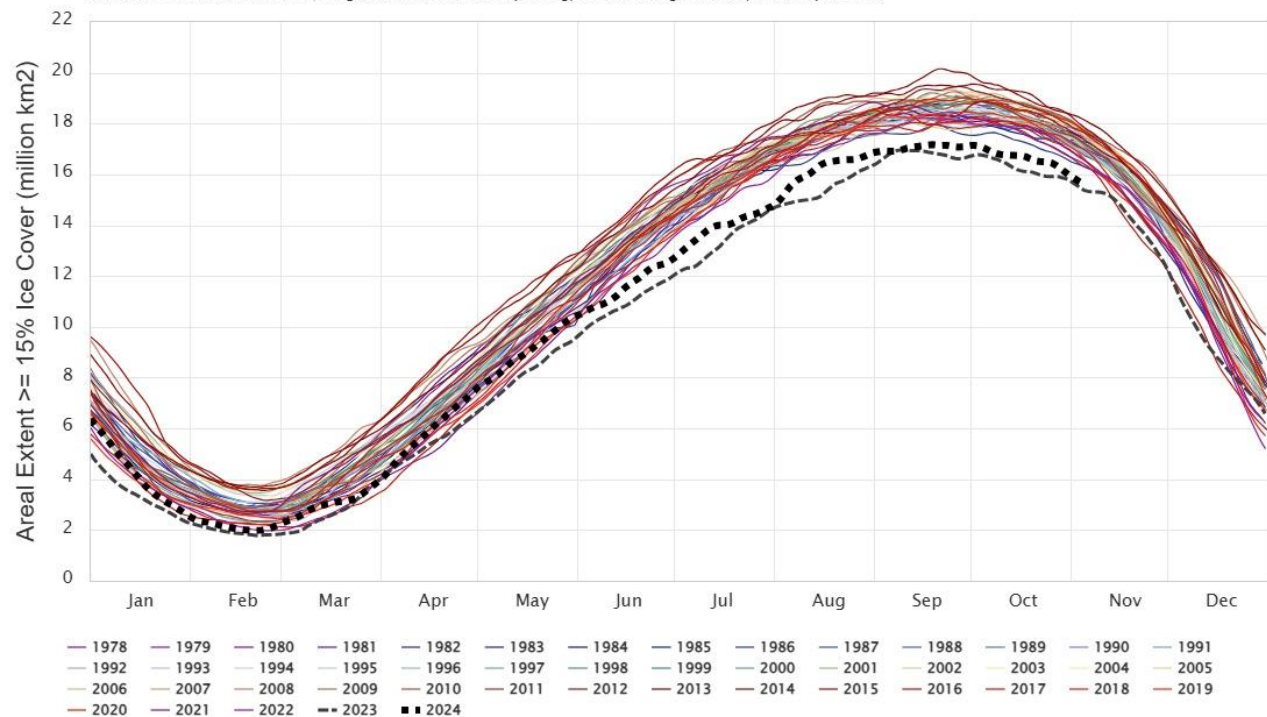
Northern Hemisphere Sea Ice Extent

Dataset: NSIDC Sea Ice Index V3 | Image Credit: ClimateReanalyzer.org, Climate Change Institute, University of Maine



Southern Hemisphere Sea Ice Extent

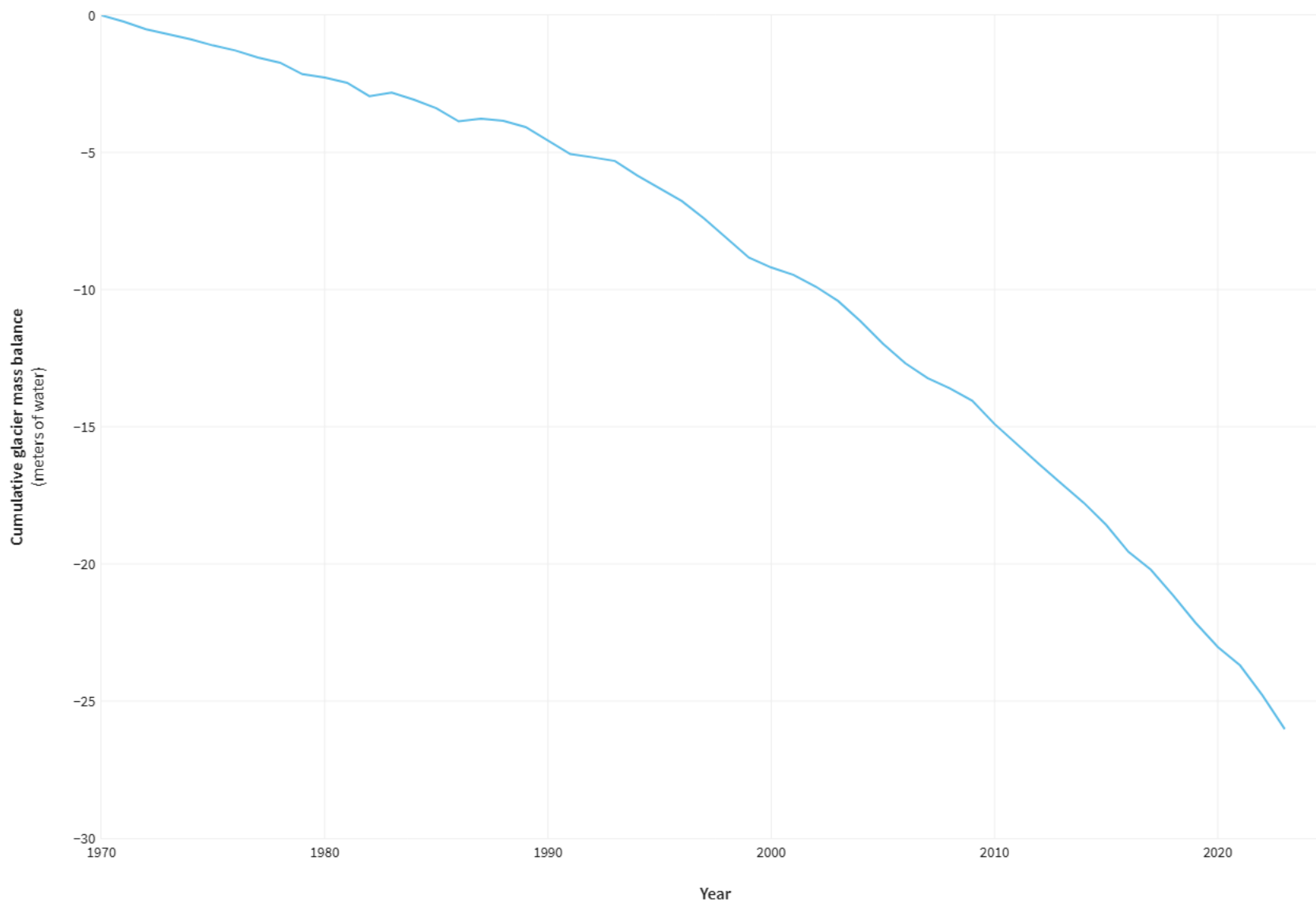
Dataset: NSIDC Sea Ice Index V3 | Image Credit: ClimateReanalyzer.org, Climate Change Institute, University of Maine





Glacier Mass

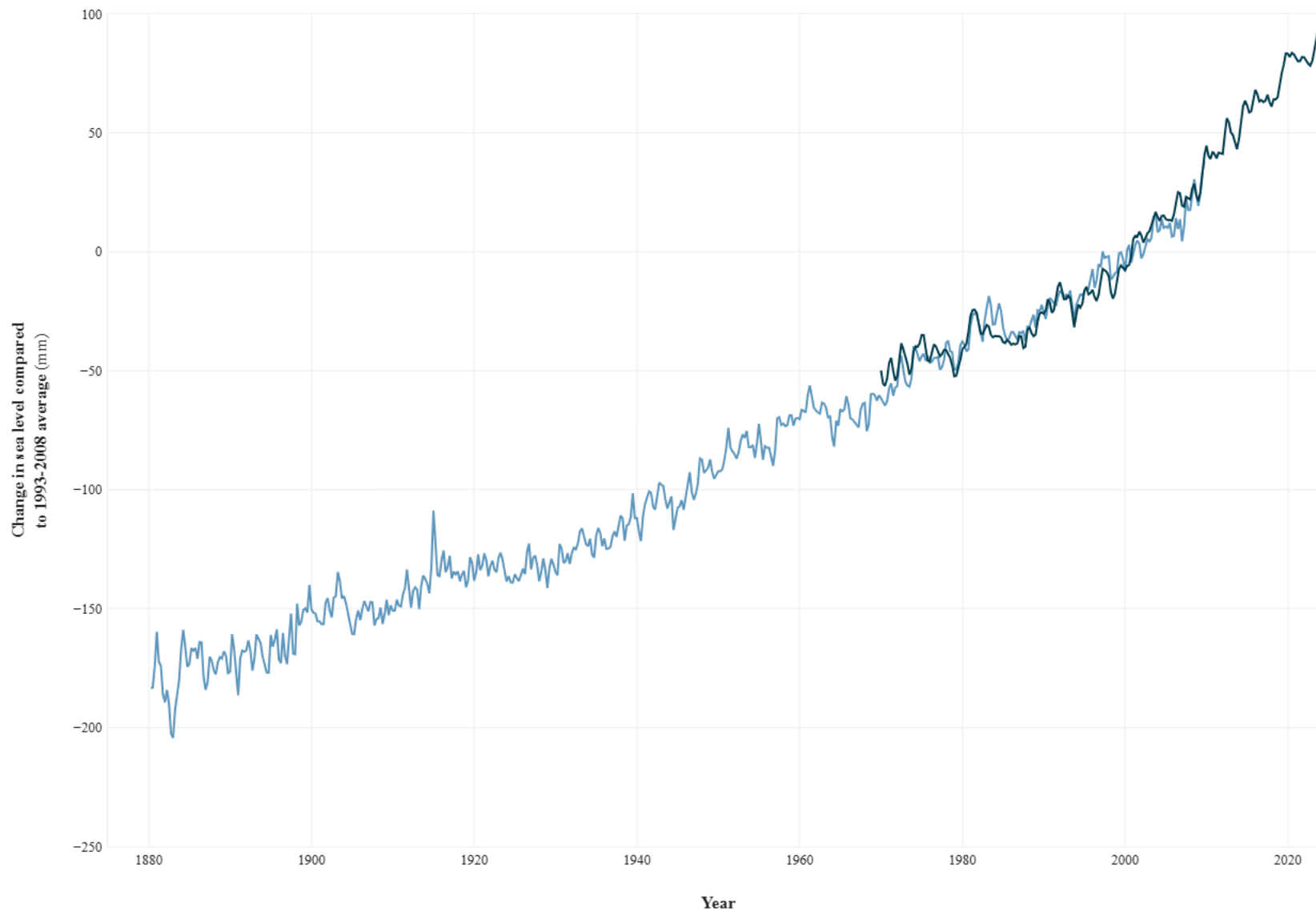
GLACIER MASS BALANCE (YEARLY)





Sea Level Rise

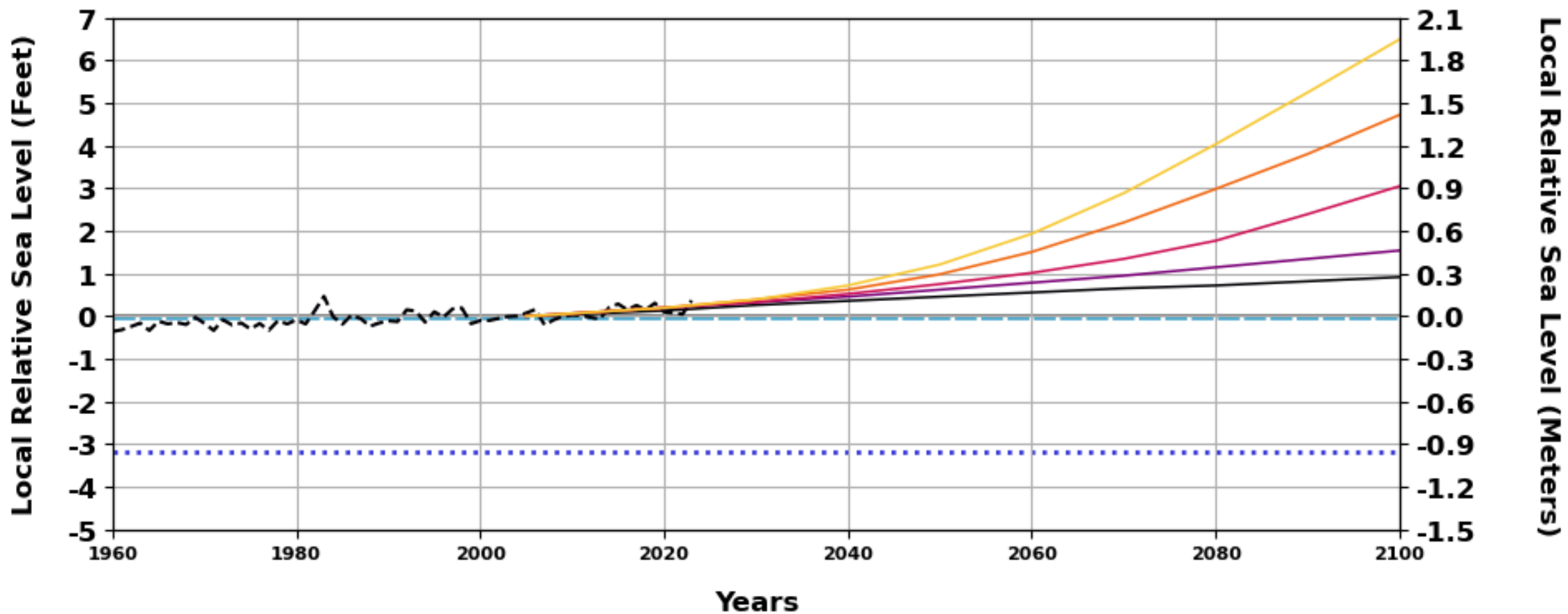
GLOBAL SEA LEVEL





Sea Level Rise

Annual Relative Sea Level Since 1960 and Projections 9414290 San Francisco





AI in NOAA



Harvesting the Power of AI for NOAA's Mission

Applying Artificial Intelligence to NOAA's Mission



Providing more accurate weather forecasts by improving models



Operating uncrewed systems for bathymetric mapping and geographic surveys



Predicting space weather by identifying solar events in real time



Reviewing aerial and underwater surveys to assess fish populations



Studying protected species with images and acoustic recordings



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Democratizing Access to NOAA Environmental Intelligence



Exchanging ideas during NOAA's 2021 AI Workshop



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Photo CalCoastalCommission

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