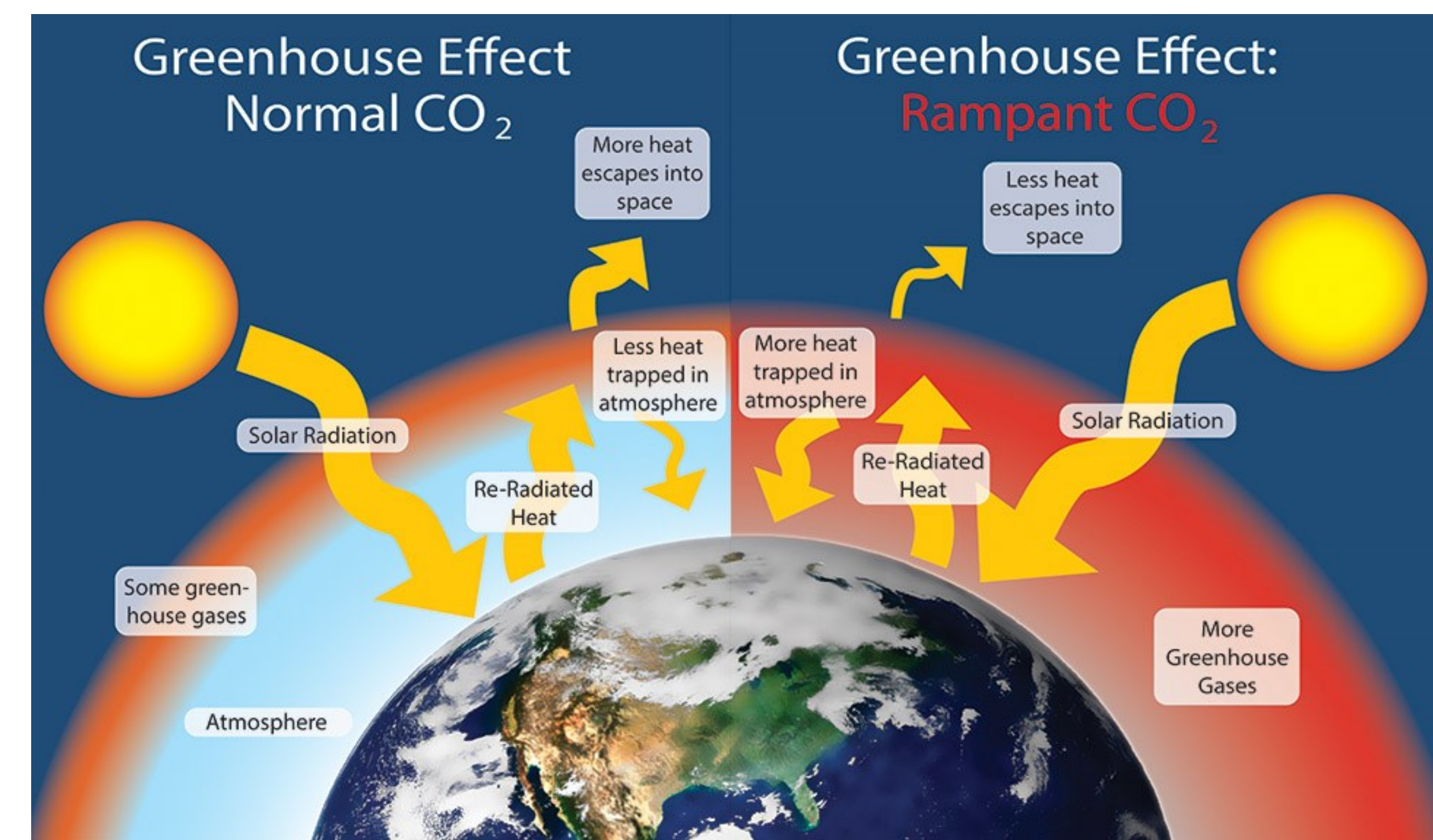
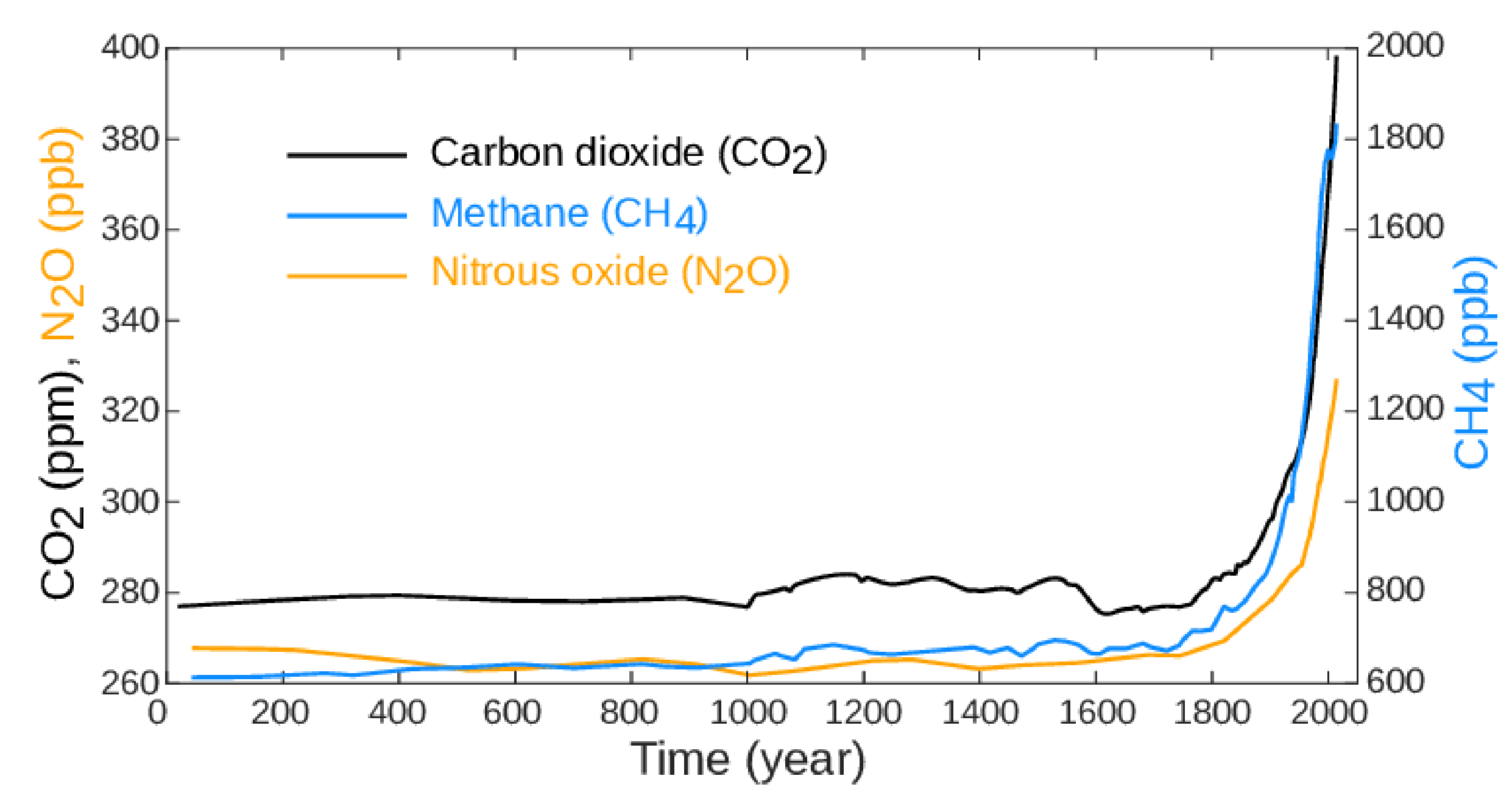


Earth is overheating because of an energy imbalance. **Greenhouse gases (GHGs) trap heat in our atmosphere, raising Earth's surface temperature.** The most important GHGs are carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous Oxide (N<sub>2</sub>O), and water vapor. GHGs are different from other gases because they hold onto the specific wavelengths of radiation emitted by the Earth. If GHG concentrations were lower, more of that radiation would leave the Earth's atmosphere and go back into space.



Source: National Park Service, Golden Gate Recreation Area

GHGs are very important! Without them, our planet would be too cold to sustain human life. However, since the industrial revolution, **humans have increased the amount of greenhouse gases in the atmosphere far above sustainable levels.** Just look how much GHG levels have changed since the 1800s!

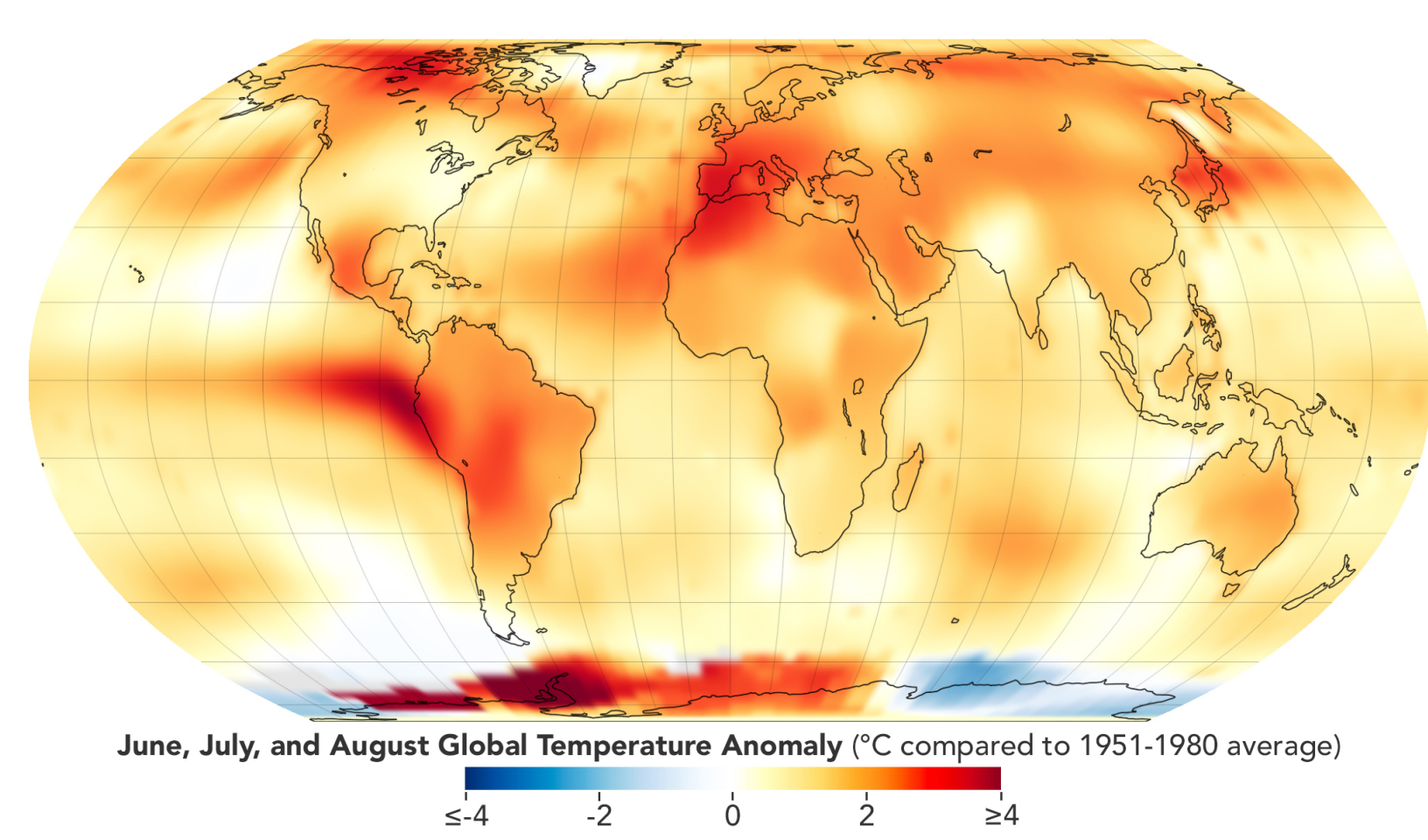


Source: Pillot et al., Energy Policy, 2019

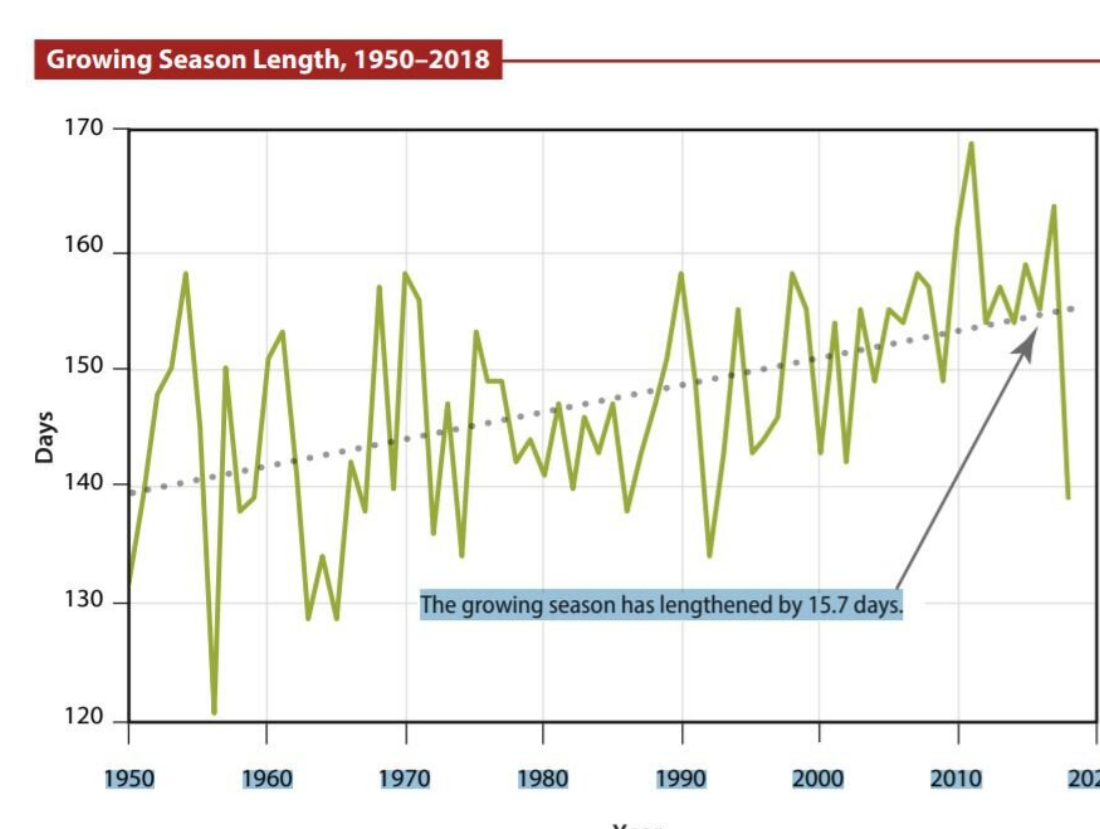
Greenhouse warming, enhanced by feedback loops, has produced numerous changes in climate. These changes come in the form of **heat waves, more intense and frequent storms, diminished ecosystem function, and more.**

The impacts of global warming are visible globally...

...across the state of Maine...

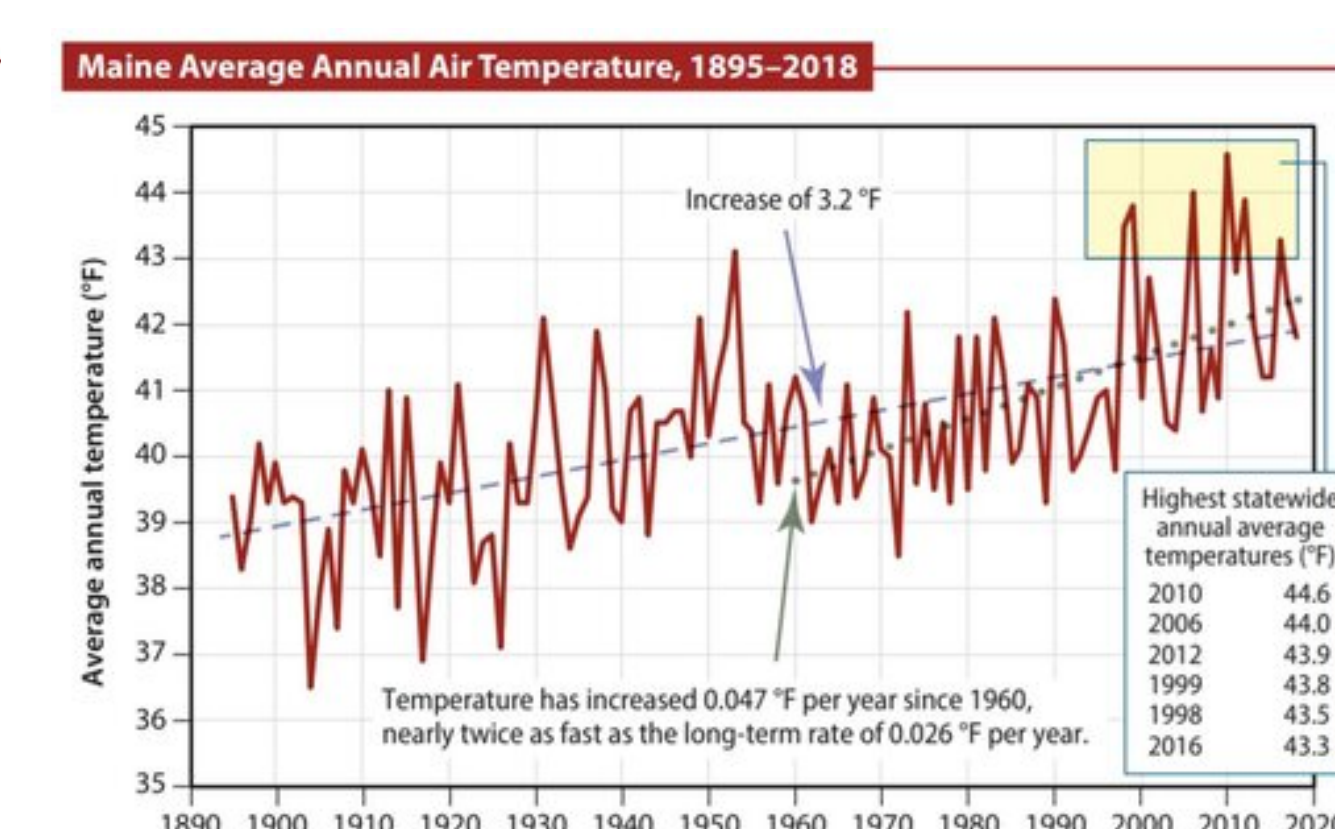


"NASA Announces Summer 2023 Hottest on Record"  
Source: NASA Climate

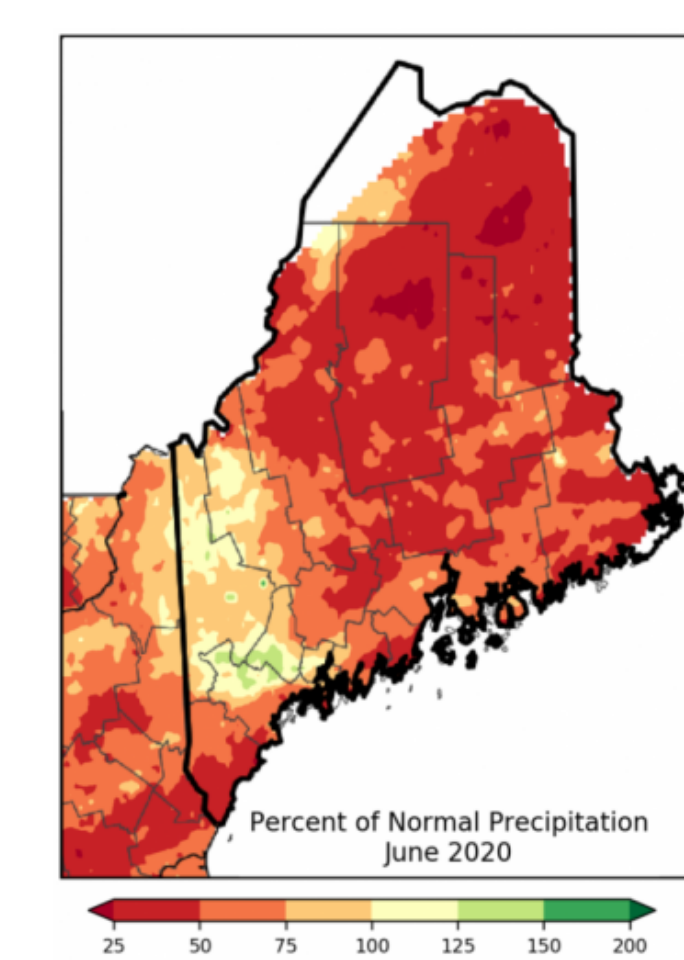


Growing season lengths based on a statewide mean of 20 stations with long term (since 1950) observational records of daily minimum and maximum temperature: Acadia National Park, Augusta, Belfast, Bangor, Bar Harbor, Caribou, Corrina, Eastport, Farmington, Fort Kent, Gardiner, Houlton, Jackman, Jonesboro, Lewiston, Madison, Presque Isle, Portland, Stanford, and Waterville. Data from the NOAA Global Historical Climatology Network (NOAA GHCN)

Source: Maine's Climate Future: 2020 Update



Annual temperature, 1895-2018, averaged across Maine based on monthly data from the NOAA U.S. Climate Division Database (NOAA CAAG). Linear trends calculated for the entire record (dashed line) and since 1960 (dotted line).



Source: Northeast Regional Climate Center

...and right here on Chebeague.



Source: Chebeague Resident Photographs of January 2024 Storm Impacts

**The global community can slow or halt these changes** by reducing GHG emissions, and we can do our part right here on Chebeague. Our climate future is up to us!