

The background features a light gray gradient with several white, wavy, contour-like lines. A large, horizontal splash of ink in shades of teal, blue, and magenta is the central focus. The text is overlaid on this splash.

Severity of Climate Change

Robyn Ramsden BA & BSc. (Geol.)⁺

A series of blue dashed wavy lines in the top-left corner, with a white semi-circle partially visible at the top edge.

SWDC

Climate Change and Environment Committee

A series of blue dashed wavy lines in the bottom-right corner, with a white semi-circle partially visible at the bottom edge. A solid orange line runs parallel to the dashed lines, curving upwards from the bottom left towards the right.

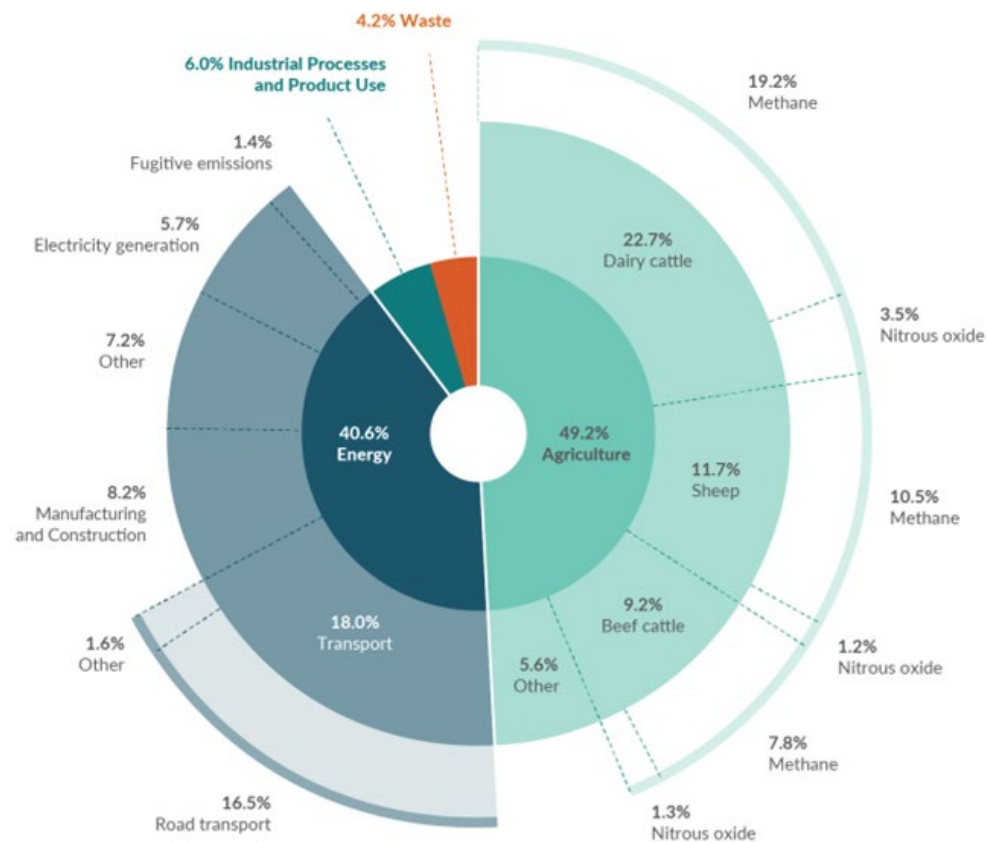
The background features a light beige color with several wavy, dashed blue lines that create a sense of movement and depth. There are also two white circles: one in the top-left corner and another in the bottom-right corner. The text is centered in the middle of the page.

How do we know?

+

γνώθι σεαυτόν

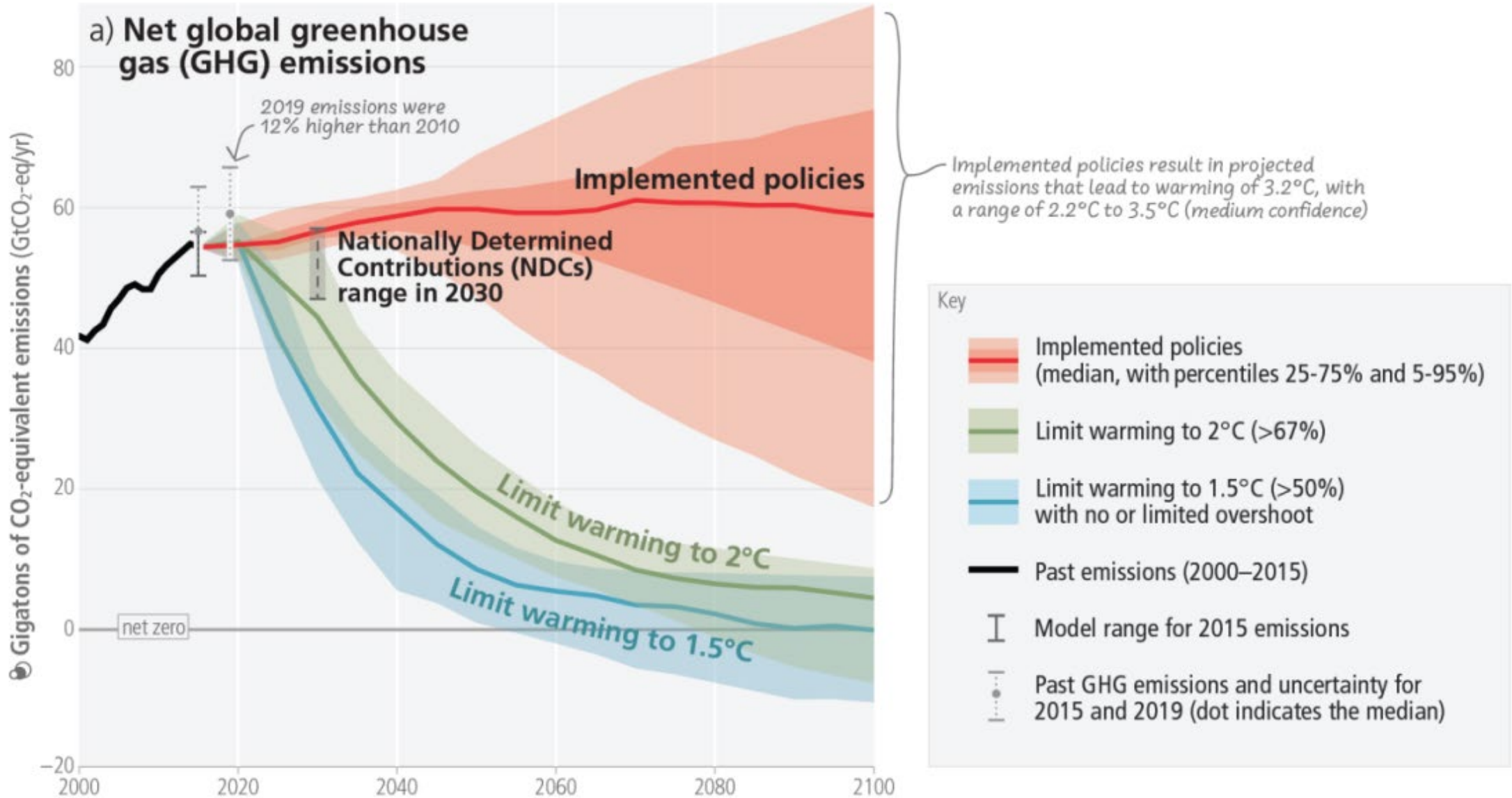
Figure 2: Gross greenhouse gas emissions in 2021 by sector, sub-category and gas type



Breakdown of emissions by sector (Agriculture, Energy, Industrial Processes and Product Use (IPPU), and Waste) and sub-category, and greenhouse gas by type. The emissions contribution from Tokelau is too small to be shown in the figure.

Limiting warming to 1.5°C and 2°C involves rapid, deep and in most cases immediate greenhouse gas emission reductions

Net zero CO₂ and net zero GHG emissions can be achieved through strong reductions across all sectors





New Zealand

CHOOSE UPDATE TO VIEW 7 Mar 2023 ▾

SHARE



Overall rating
HIGHLY INSUFFICIENT

Policies and action
against modelled domestic pathways
HIGHLY INSUFFICIENT
< 4°C WORLD

NDC target
against modelled domestic pathways
ALMOST SUFFICIENT
< 2°C WORLD

NDC target
against fair share
INSUFFICIENT
< 3°C WORLD

Climate finance
HIGHLY INSUFFICIENT

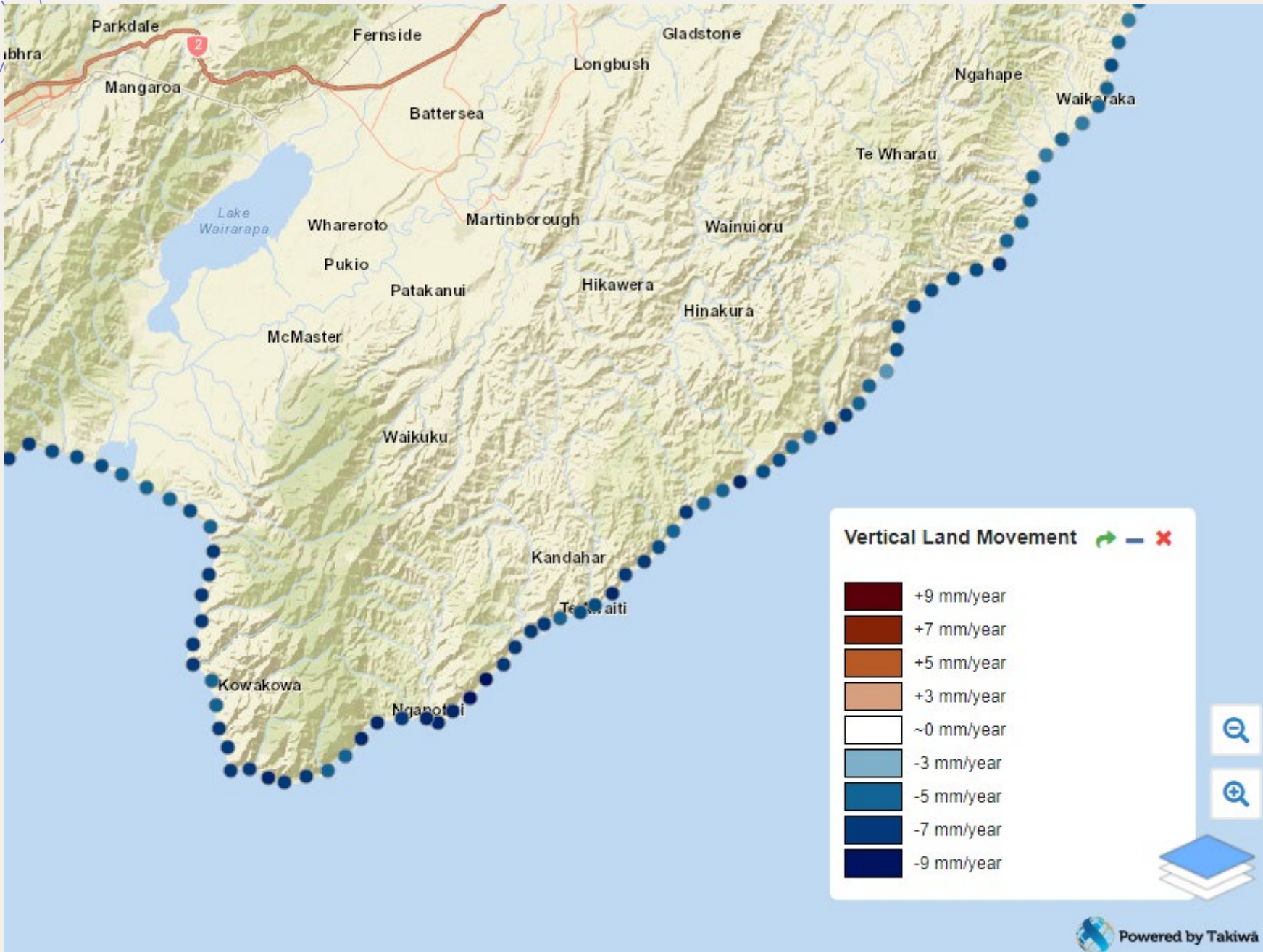
Net zero target

year
2050

comprehensiveness rated as
POOR

Land use & forestry

historically considered a
SINK



LONG TERM AVERAGE TEMPERATURE

(1981-2010)

FORECAST TEMPERATURE



SEASONAL CLIMATE OUTLOOK

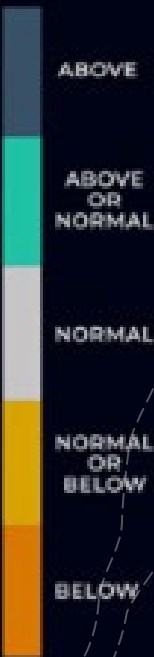
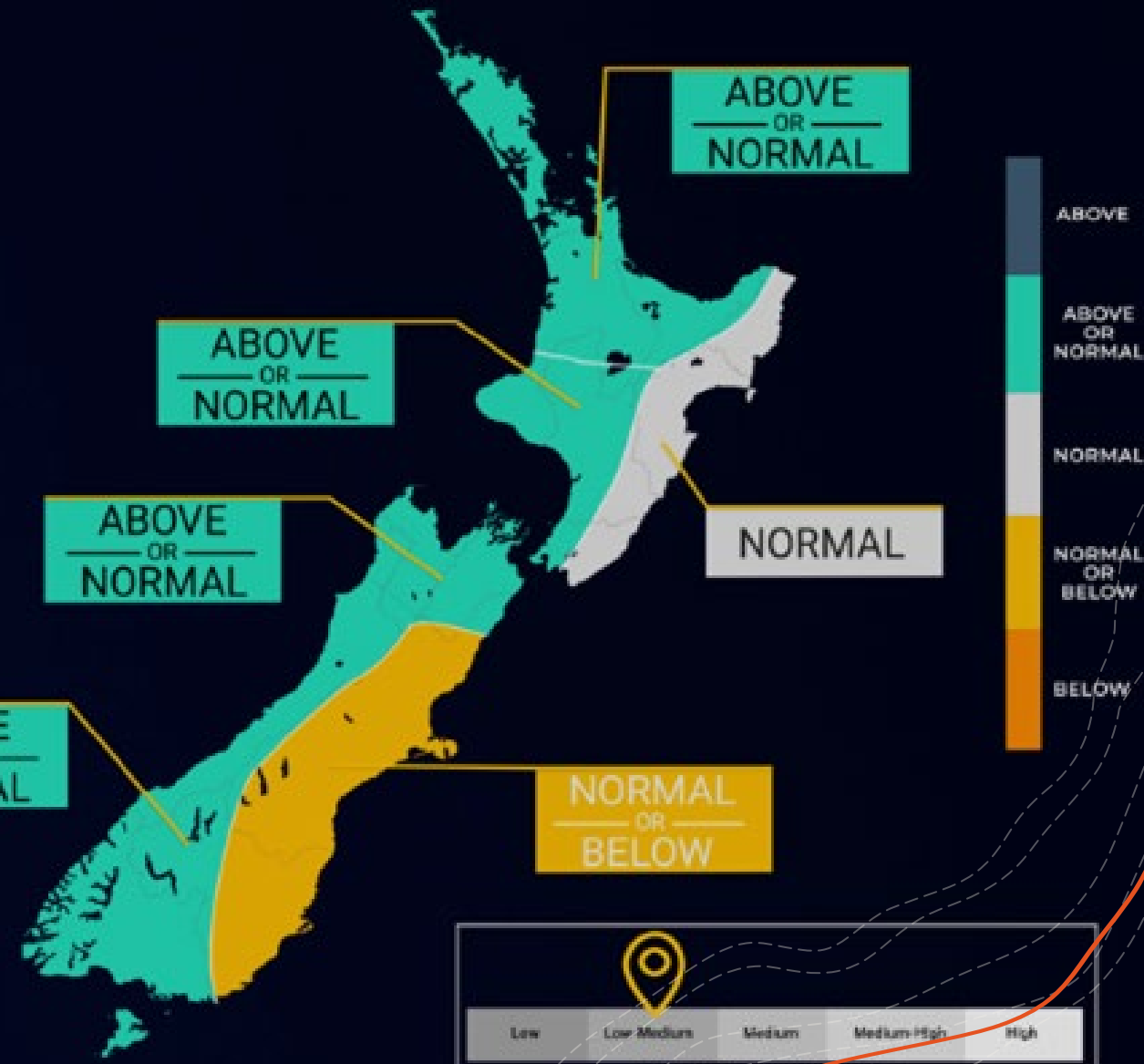
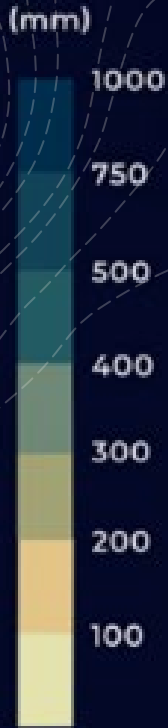
MAY - JULY 2023



LONG TERM NORMAL RAINFALL

(1981-2010)

FORECAST RAINFALL



SEASONAL CLIMATE OUTLOOK
MAY - JULY 2023



What can this committee do?

- +Lead by example
- +Encourage business to use recyclable or compostable containers
- +Promote recycling
- +Fast track food waste disposal
- +Promote and support existing circular economy efforts
- +Promote the use of carbon footprint knowledge



AOTEAROA CLIMATE STRIKE

FRIDAY 26 MAY



PAE TŪ MŌKAI

**FEATHERSTON, WAIRARAPA
1PM - FEATHERSTON SQUIRCLE**





OUR DEMANDS

- **Reduce emissions now**
50% real reduction in emissions by 2030, without relying on offsets.
- **Enable a 100% transition to regenerative agriculture by 2030**
- **Prioritise Te Tiriti centred climate justice**
- **Lower the voting age to 16**



REDUCE EMISSIONS NOW.

**50% real reduction in emissions by 2030,
without relying on offsets.**

- End all exploration and extraction of oil, gas and coal.
- Aotearoa's major cities sign onto the call for a Fossil Fuel Non-Proliferation Treaty.
- Provide free, reliable and accessible public transport.
- A sustainable, resilient and diversified food sector.
- Extension and electrification of commuter rail.
- Enabling safe and low cost active modes of transport, such as cycling infrastructure, e-bike and e-scooter subsidies and safe walking facilities. Restoration of Intercity and rural rail service.



ENABLE A 100% TRANSITION TO REGENERATIVE AGRICULTURE BY 2030.

Farming plays a vital role in New Zealand's economy, but today's way of farming is harming nature, and by extension, ourselves. When we look after Papatūānuku, it gives us a bigger and better bounty.



PRIORITISE TE TIRITI CENTRED CLIMATE JUSTICE.

Indigenous lands make up 20% of the Earth's territory but they hold 80% of the world's remaining biodiversity. We must centre matauranga Māori and a Te Tiriti partnership when mitigating and adapting to the climate crisis.



LOWER THE VOTING AGE TO 16.

Today's young people inherit this world, and they have shown that they are bold thinkers and leaders fighting to save our collective home. Giving 16 and 17 year olds the opportunity to vote helps to put climate breakdown at the top of the political agenda.

AOTEAROA CLIMATE STRIKE

FRIDAY 26 MAY

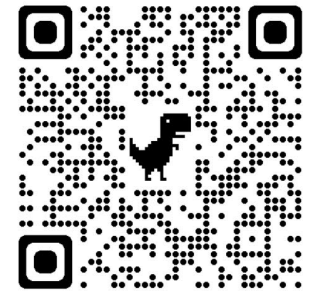
PAE TŪ MŌKAI

FEATHERSON

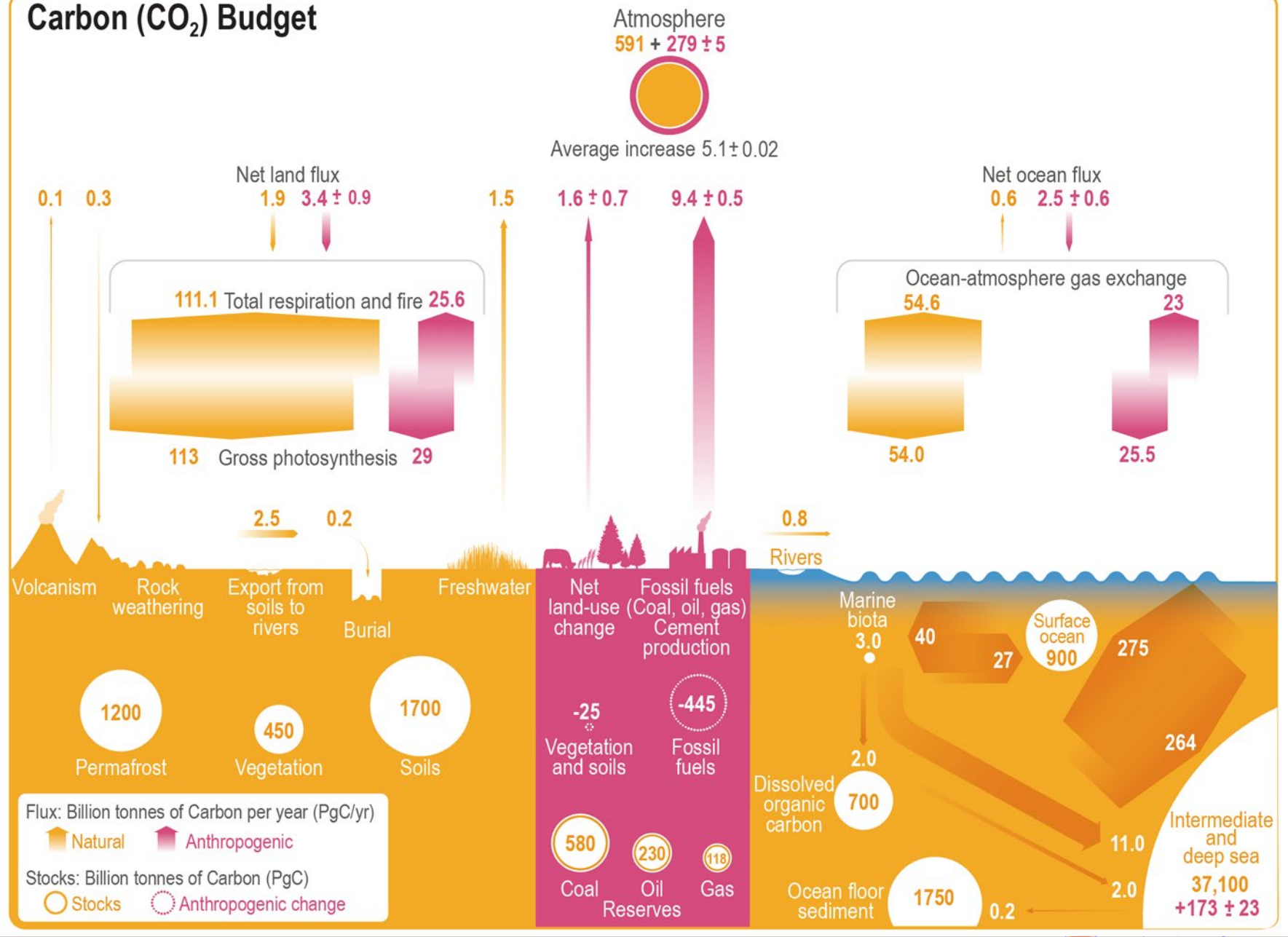
1PM - 26.05.23

FEATHERSTON SQUIRCLE

everyone is welcome - join us and fight for climate action!



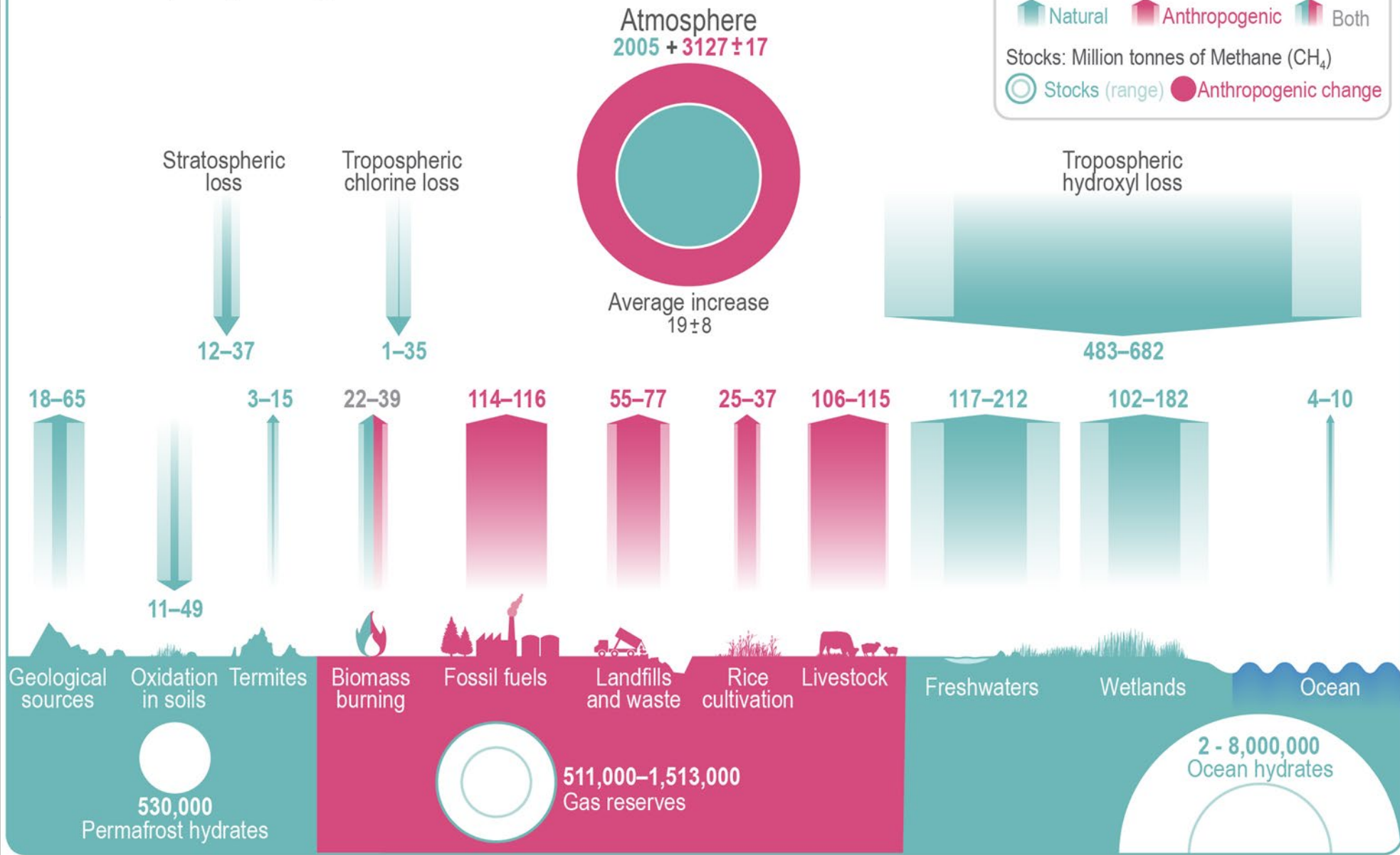
Carbon (CO₂) Budget



Methane (CH₄) Budget

Flux: Million tonnes of CH₄ per year (Tg CH₄/yr)
 Stocks: Million tonnes of Methane (CH₄)

█ Natural █ Anthropogenic █ █ Both
○ Stocks (range) ● Anthropogenic change



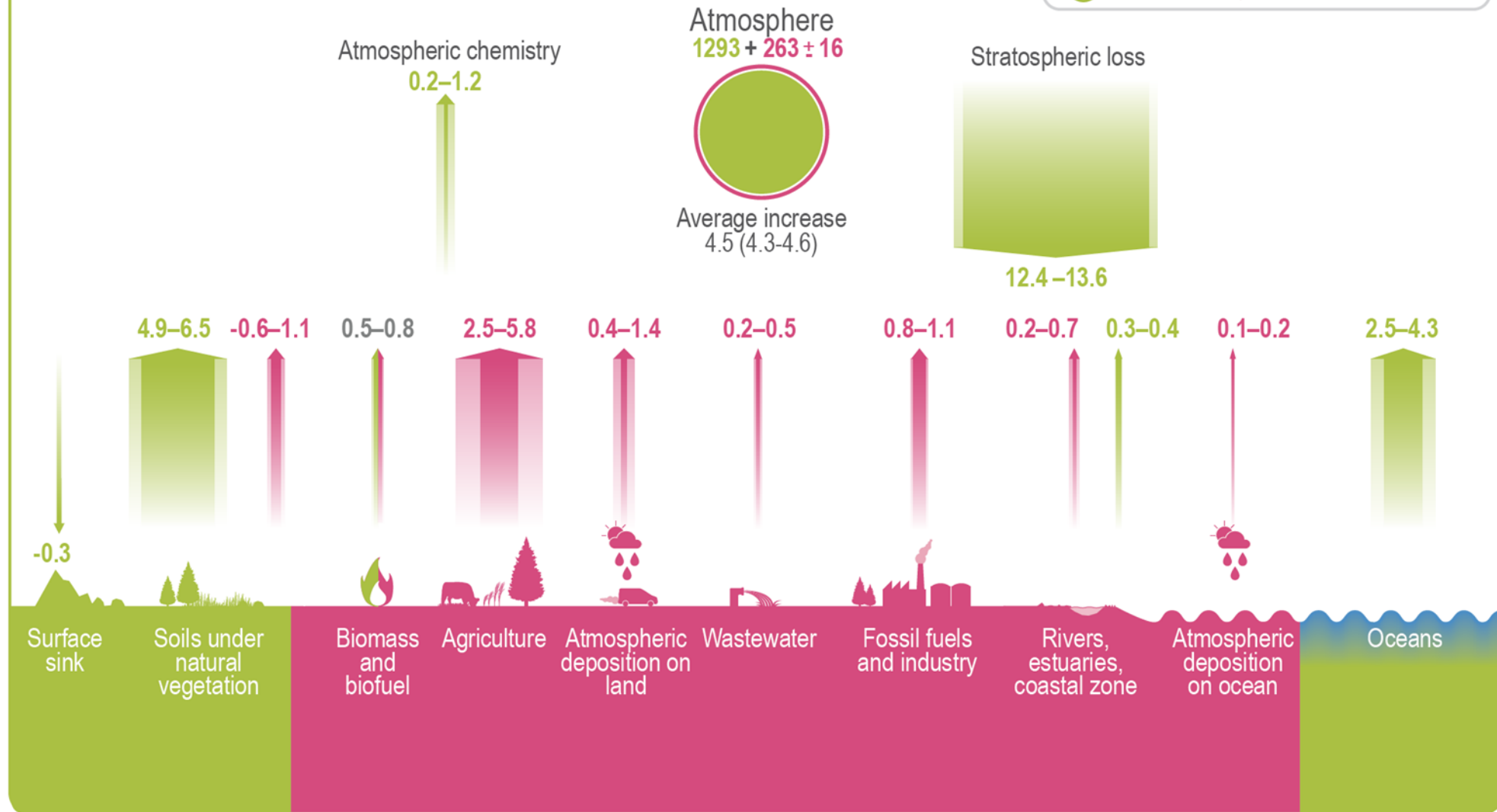
Nitrous Oxide (N₂O) Budget

Flux: Million tonnes of N₂O per year (TgN(N₂O)/yr)

■ Natural
 ■ Anthropogenic
 ■ Both

Stocks: Million tonnes of Nitrogen (TgN)

○ Stocks
 ● Anthropogenic change



Last Month

Last 1 Year

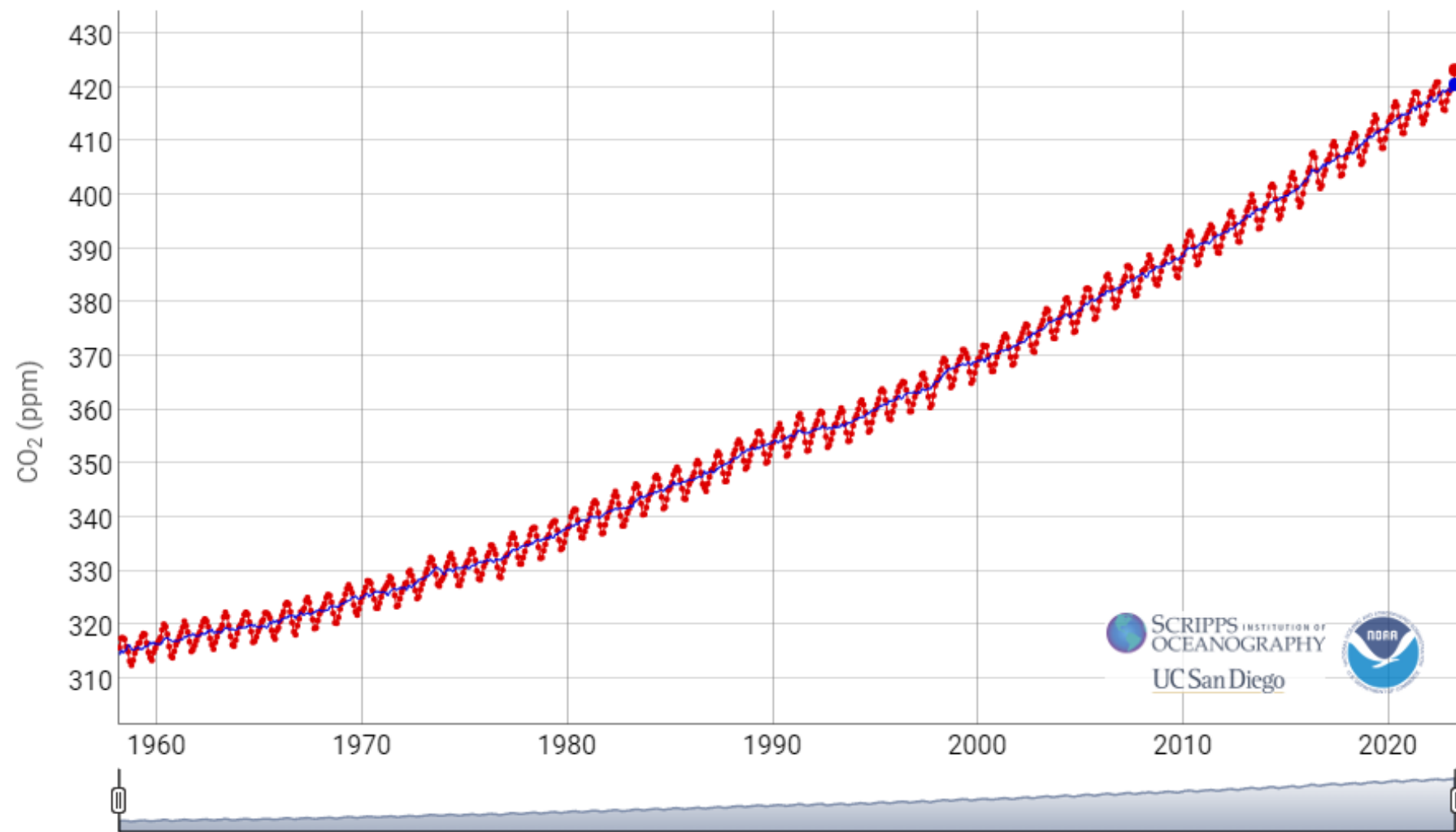
Full Record

Growth Rate

Data

Interactive Plots

Mauna Loa Monthly Averages



Hover over the graph to display values for specific dates

Apr 2023:

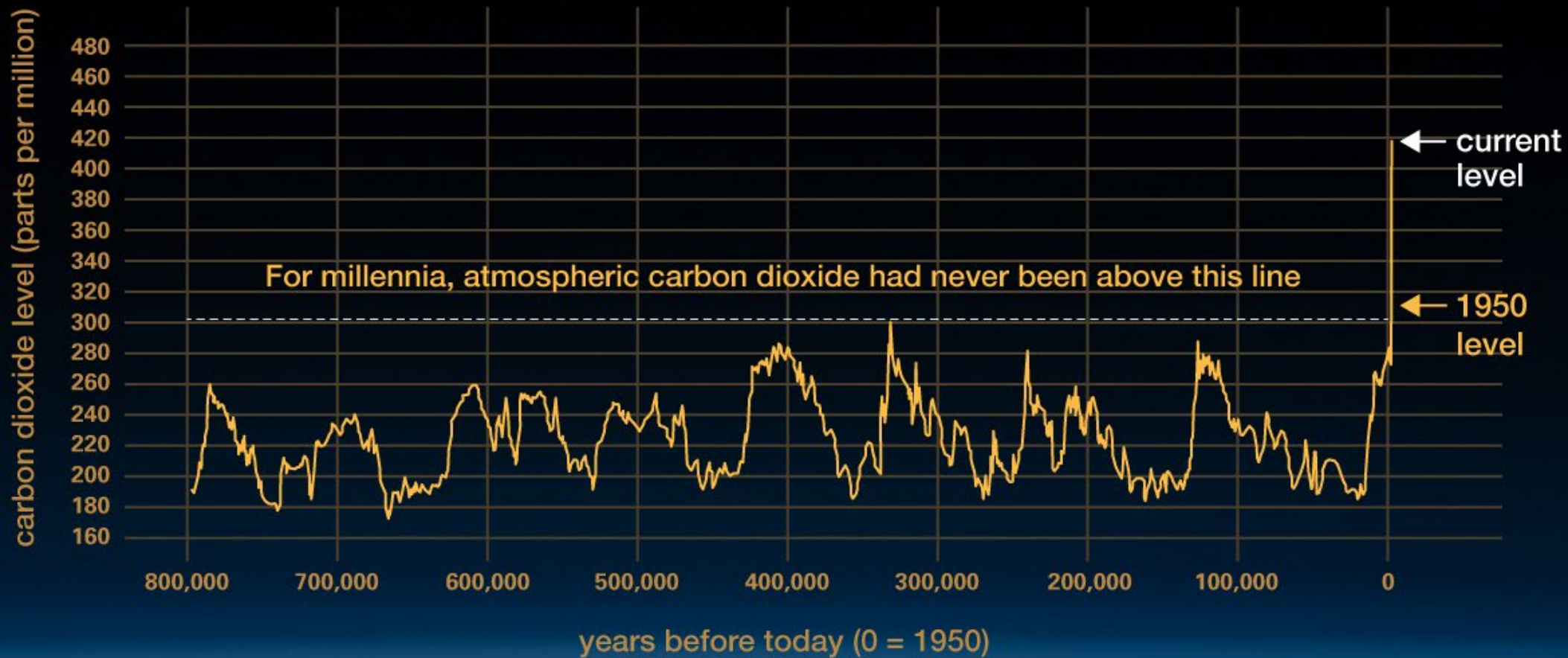
co2: 423.28

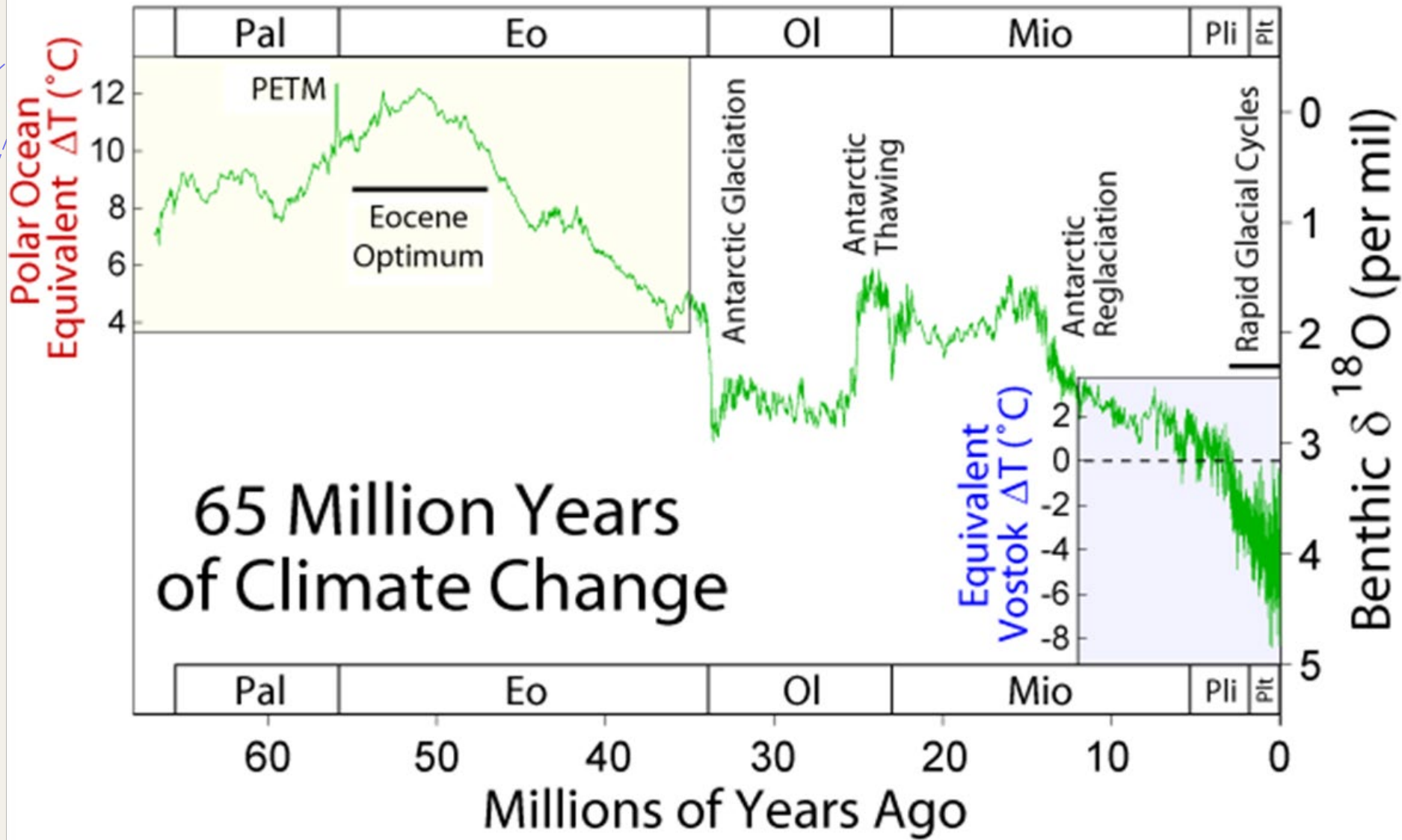
trend: 420.59

Display:

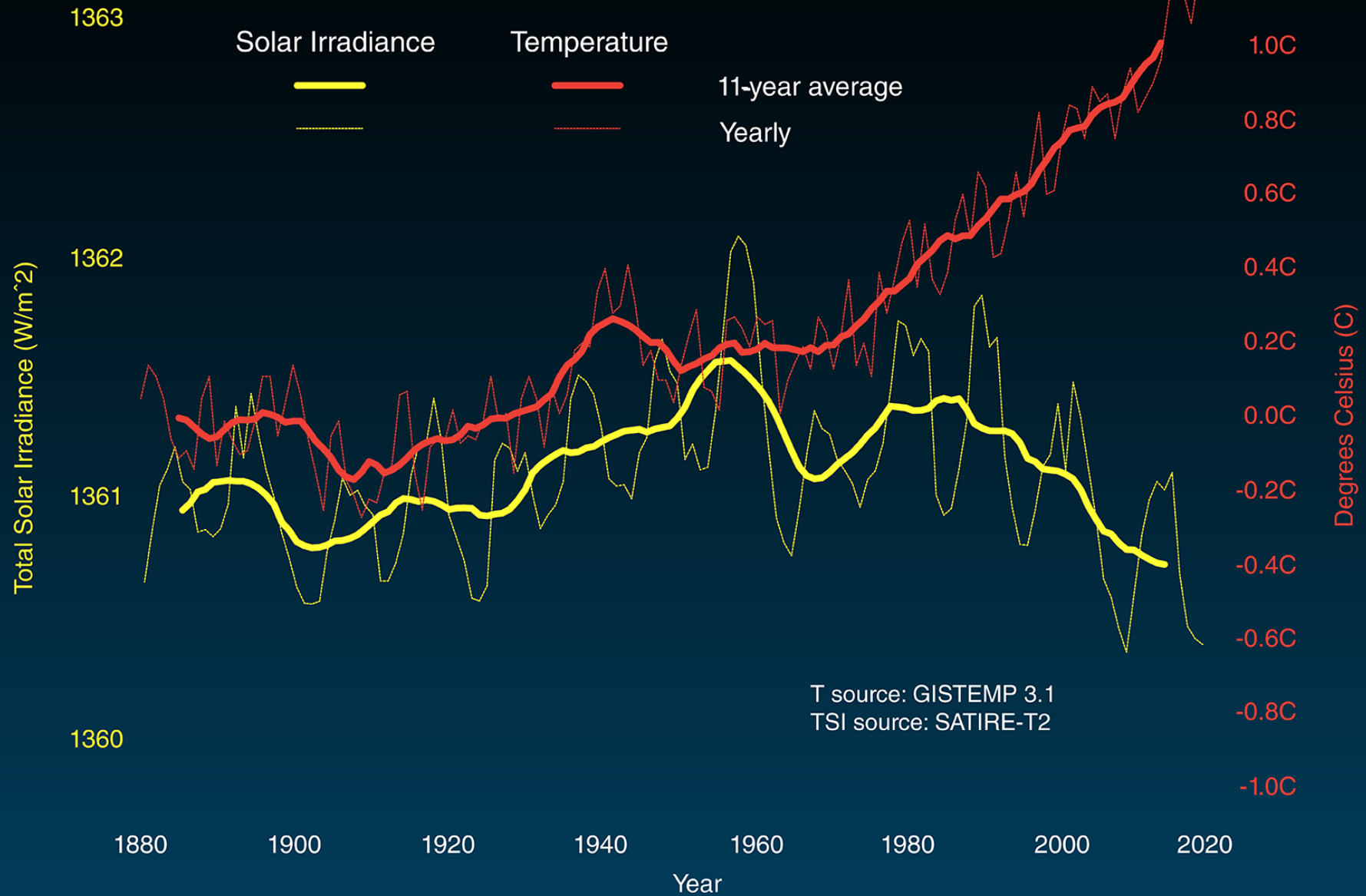
co2

trend





Temperature vs Solar Activity



HOW WE KNOW HUMANS ARE THE MAIN CAUSE OF CLIMATE CHANGE



Simple chemistry

We've known since **1900s** when we burn carbon-based materials, CO₂ is emitted



Basic physics

We've known since **1820s** that certain gases, like CO₂, absorb heat



Specific accounting

We've been keeping track of what we burn since **1970s** to know how much CO₂ we emit



Measuring GHG levels

We've been measuring GHG levels in atmosphere and in ice cores since **1950s**



Chemical analysis

We can tell if carbon in atmosphere is from fossil fuels and have been analyzing since **1950s**



Monitoring climate

We've monitored conditions since **1930s**, comparing changes to rising GHG levels



Ruling out suspects

We've looked at all possible sources of warming with research since the **1830s**



Computer models

We've used credible computer models since **1960s** to fit all these pieces together



Scientist consensus

Thousands of scientists worldwide have reviewed the evidence and concluded humans are the cause

Graphic by
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@ilissaocko