

ZGRADA BANKE SOCIETE GENERALE
Bulevar Zorana Đinđića 50

KLIMATON

01. februar 2017. od 18h
ulaz slobodan



Klimatske promene - naučne osnove
(dr Vladimir Đurđević,
Institut za meteorologiju)

Pariski klimatski sporazum
(Virginie Manfroni,
Ambasada Francuske)

**Alternativni INDC:
Srbija bez CO₂ – 100%
obnovljivi izvori energije**
(Jedan stepen Srbija)

Ecoclassroom
(Milica Marković,
ECOLAND)



Klimatske promene – naučne osnove

Vladimir Djurdjevic
Institut za meteorologiju, Fizički fakultet

“All the News
That’s Fit to Print”

The New York Times

Late Edition

Today, partly sunny, milder in the afternoon, high 50. Tonight, partly cloudy, low 37. Tomorrow, some sunshine, then clouds, showers late, high 46. Weather map, Page A28.

VOL. CLXVI . . . No. 57,482

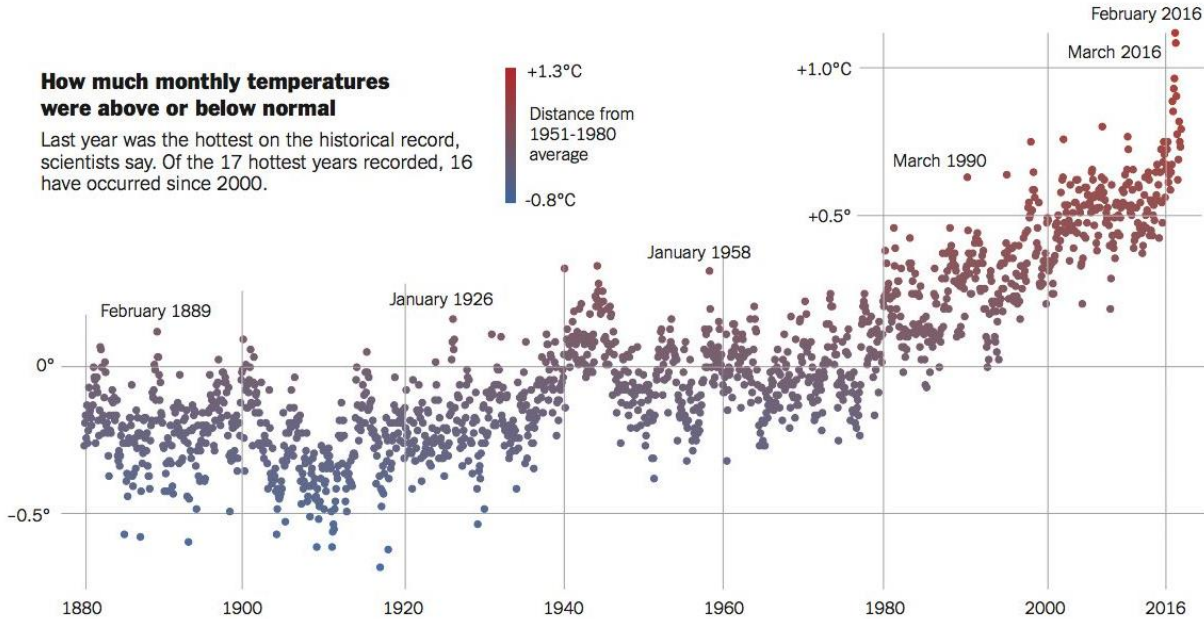
© 2017 The New York Times Company

NEW YORK, THURSDAY, JANUARY 19, 2017

\$2.50

How much monthly temperatures were above or below normal

Last year was the hottest on the historical record, scientists say. Of the 17 hottest years recorded, 16 have occurred since 2000.



Source: NASA GISS Surface Temperature Analysis

JUGAL K. PATEL/THE NEW YORK TIMES

FOR THIRD YEAR, THE EARTH IN 2016 SET HEAT RECORD

Threat to Society and Nature Is Rising — Scale of Shift Startles Scientists

By JUSTIN GILLIS

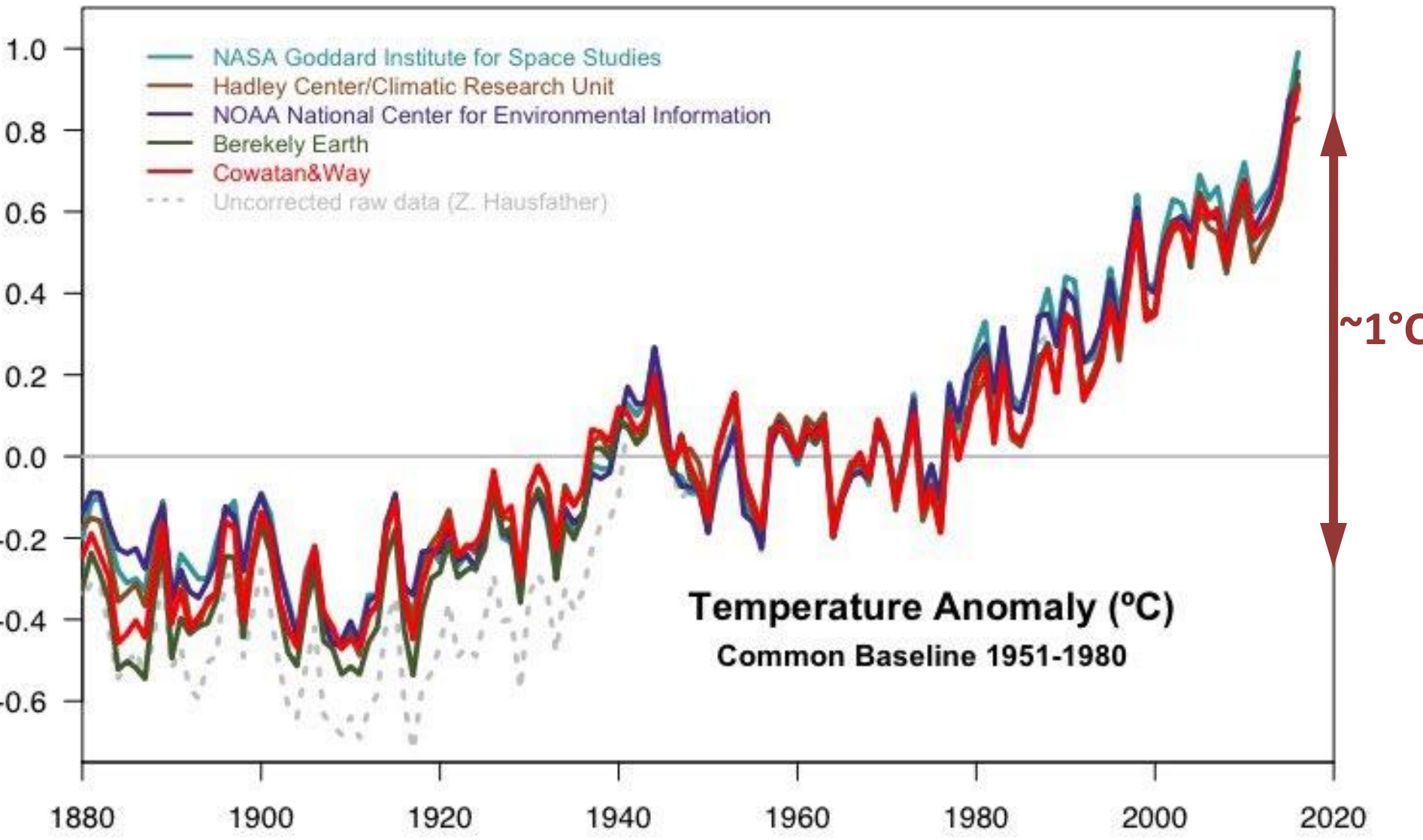
Marking another milestone for a changing planet, scientists reported on Wednesday that the Earth reached its highest temperature on record in 2016, trouncing a record set only a year earlier, which beat one set in 2014. It is the first time in the modern era of global warming data that temperatures have blown past the previous record three years in a row.

gases.

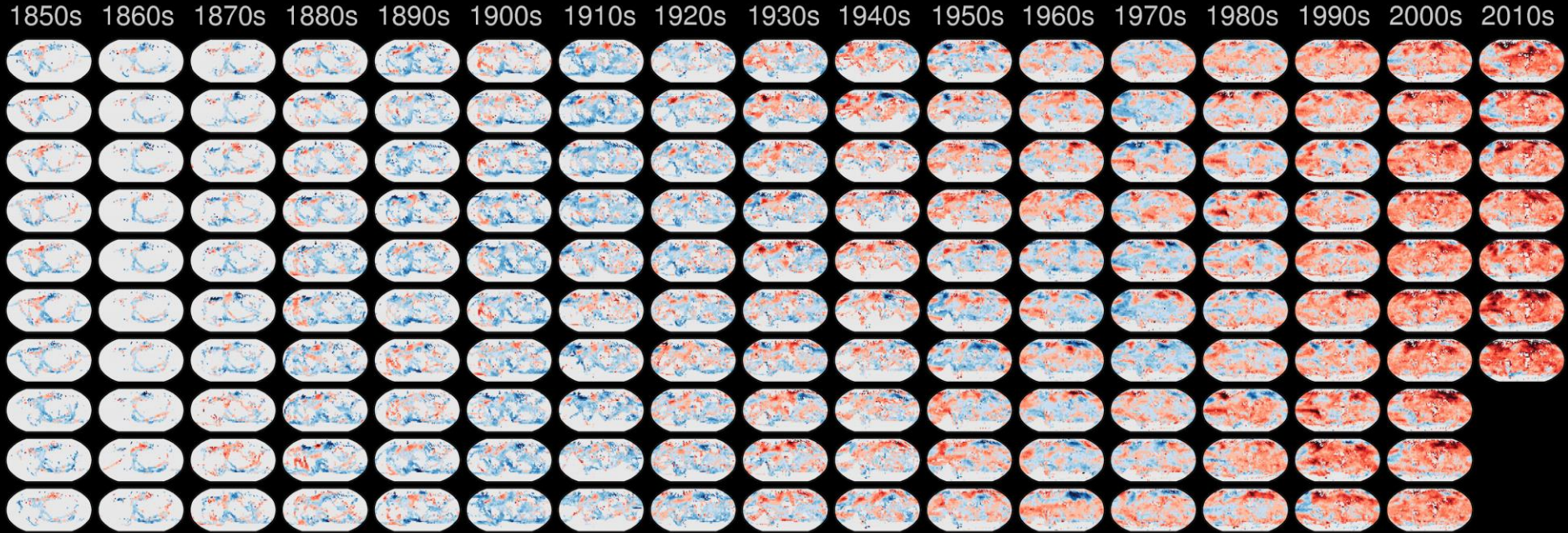
“A single warm year is something of a curiosity,” said Deke Arndt, chief of global climate monitoring for the National Oceanic and Atmospheric Administration. “It’s really the trend, and the fact that we’re punching at the ceiling every year now, that is the real indicator that we’re undergoing big changes.”

The heat extremes were espe-

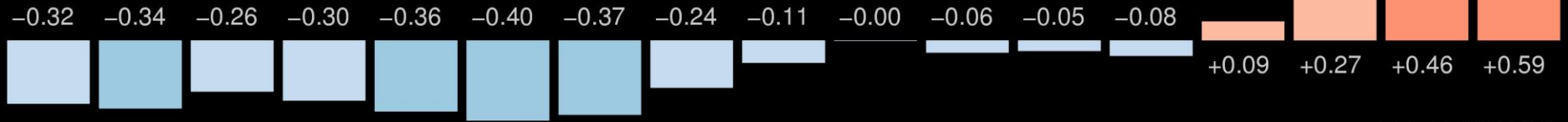
Promena odstupanja srednje globalne temperature od višegodišnjeg proseka (~14°C)



Mapping global temperature changes



Global average temperature change ($^{\circ}\text{C}$)

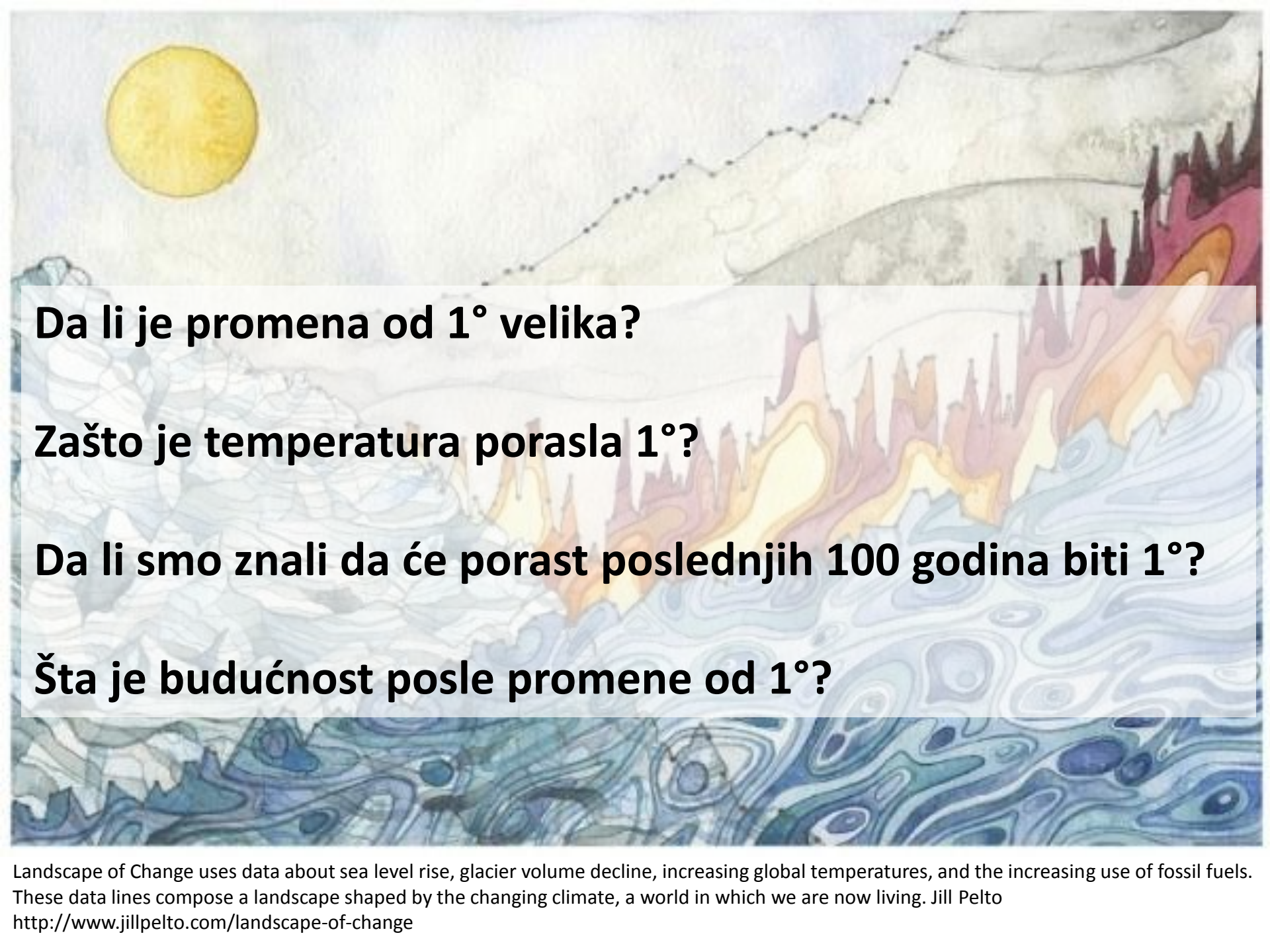


Data: HadCRUT4.5
@ed_hawkins

Global mean temperature
GISTEMP 1997-2016
Estimate 2016 by Gavin Schmidt
based on data up to July 2016

2016
predicted





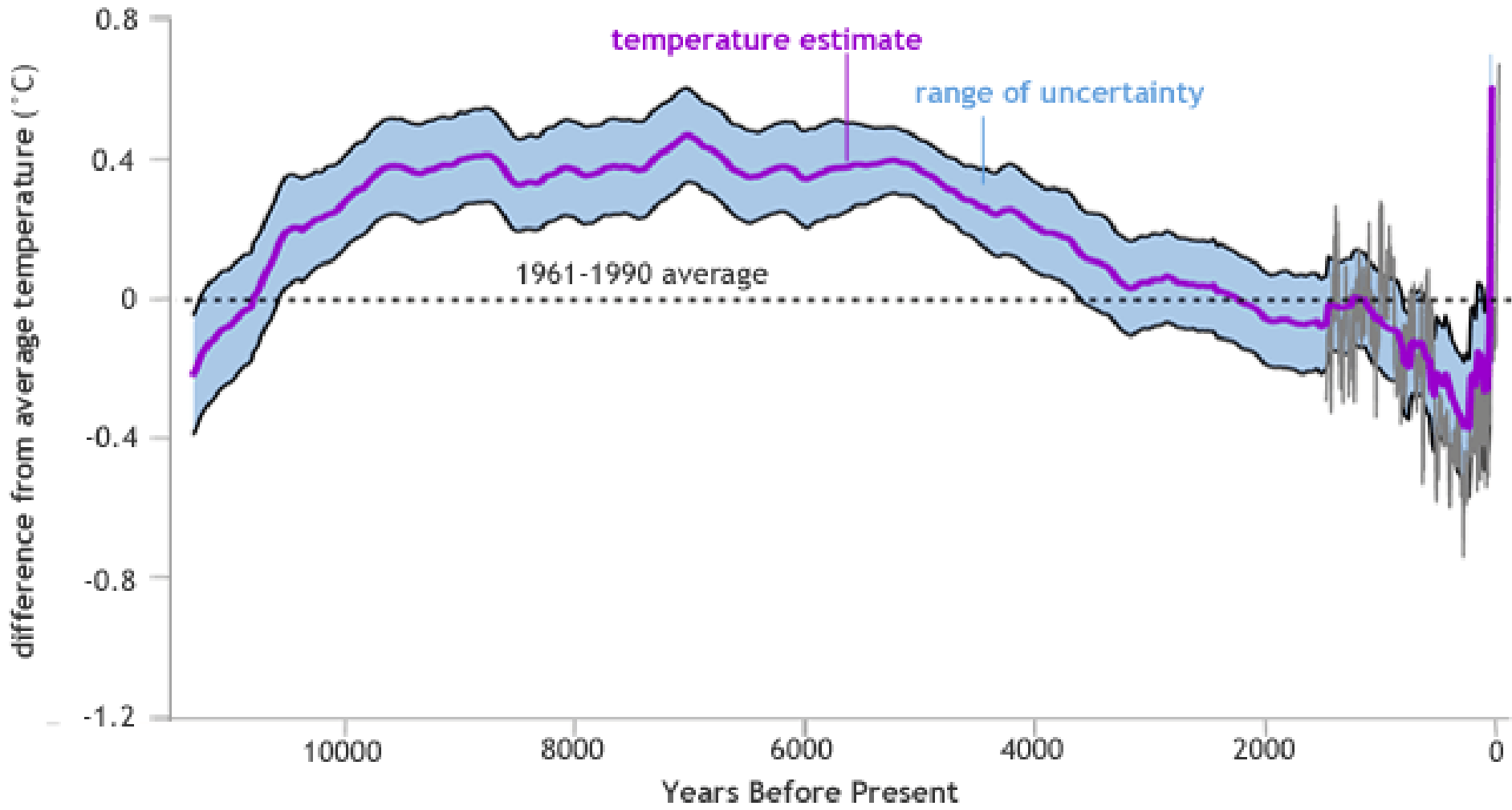
Da li je promena od 1° velika?

Zašto je temperatura porasla 1°?

Da li smo znali da će porast poslednjih 100 godina biti 1°?

Šta je budućnost posle promene od 1°?

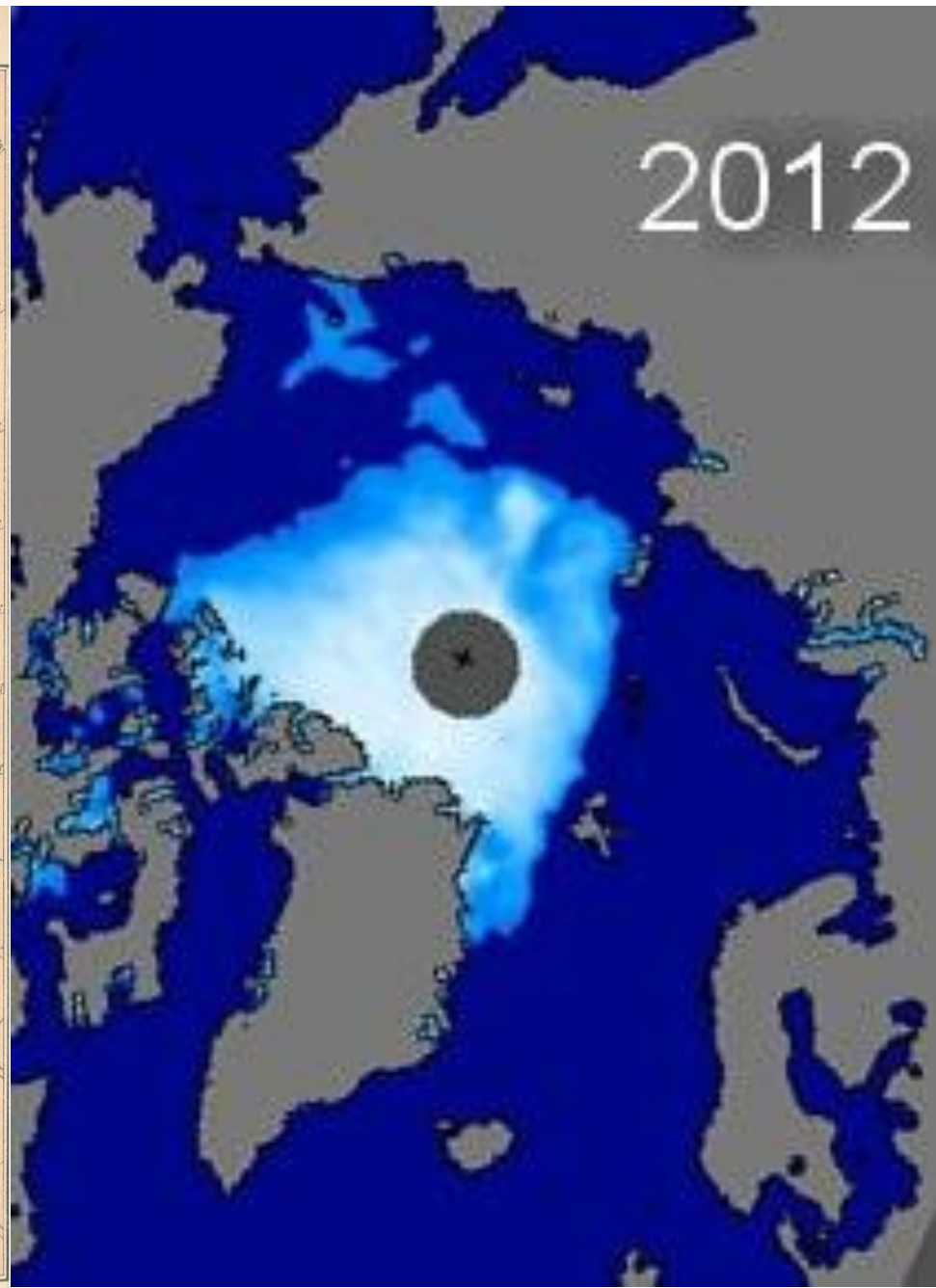
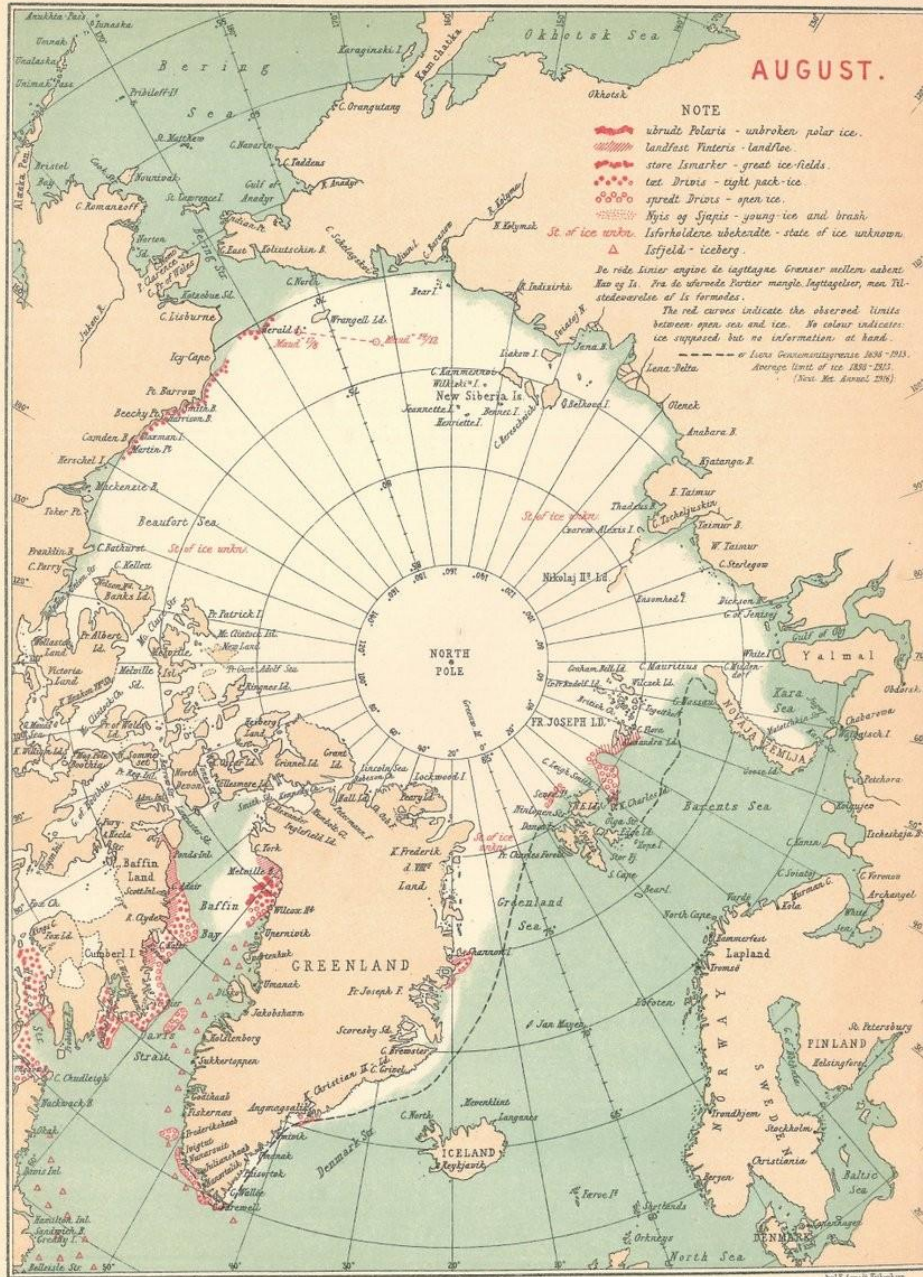
Promena globalne temperature poslednjih ~12000 godina



Adapted from Figure 1(b) in Marcott et al.

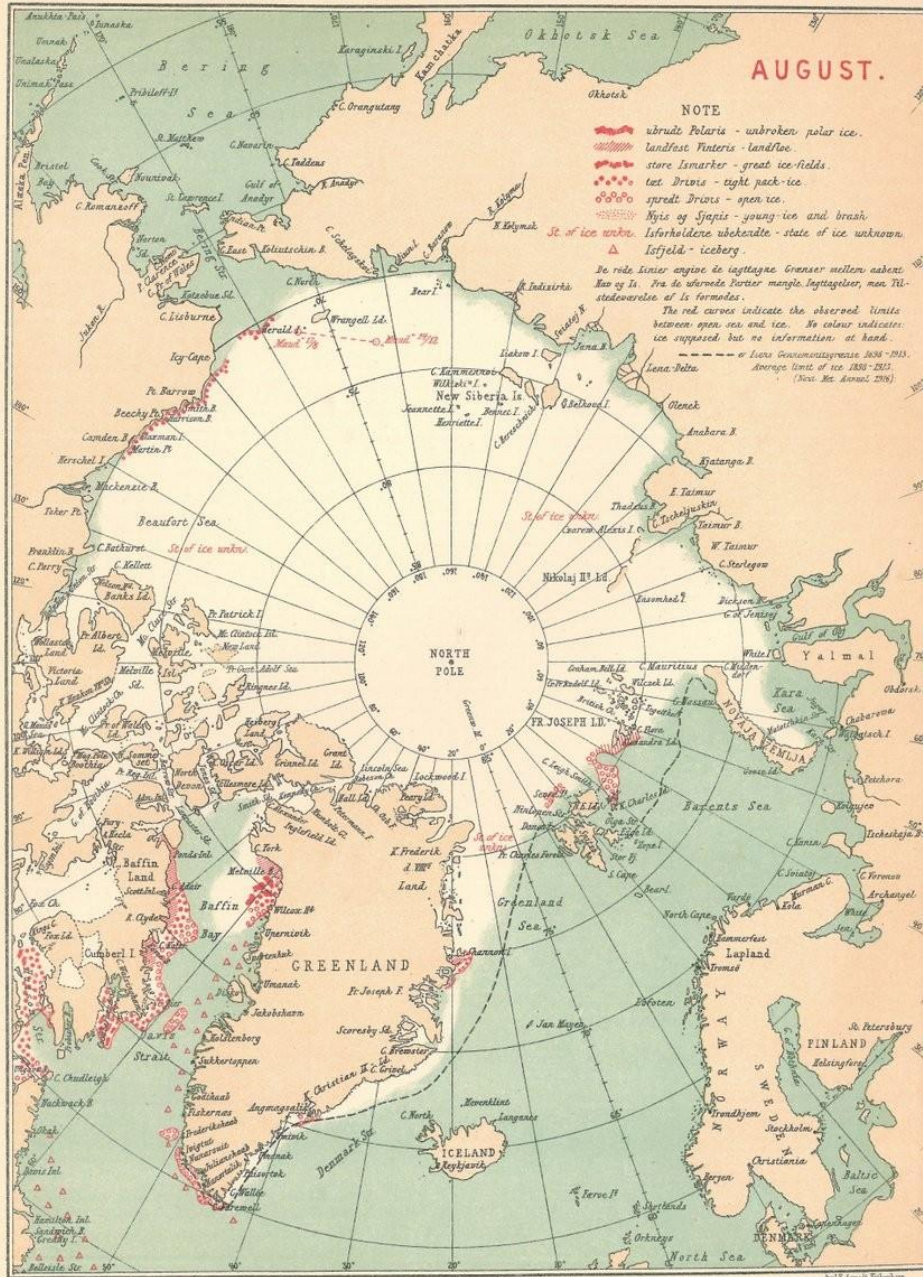
ISFORHOLDENE I DE ARKTISKE HAVE 1922.
THE STATE OF THE ICE IN THE ARCTIC SEAS 1922.

1922



ISFORHOLDENE I DE ARKTISKE HAVE 1922.
THE STATE OF THE ICE IN THE ARCTIC SEAS 1922.

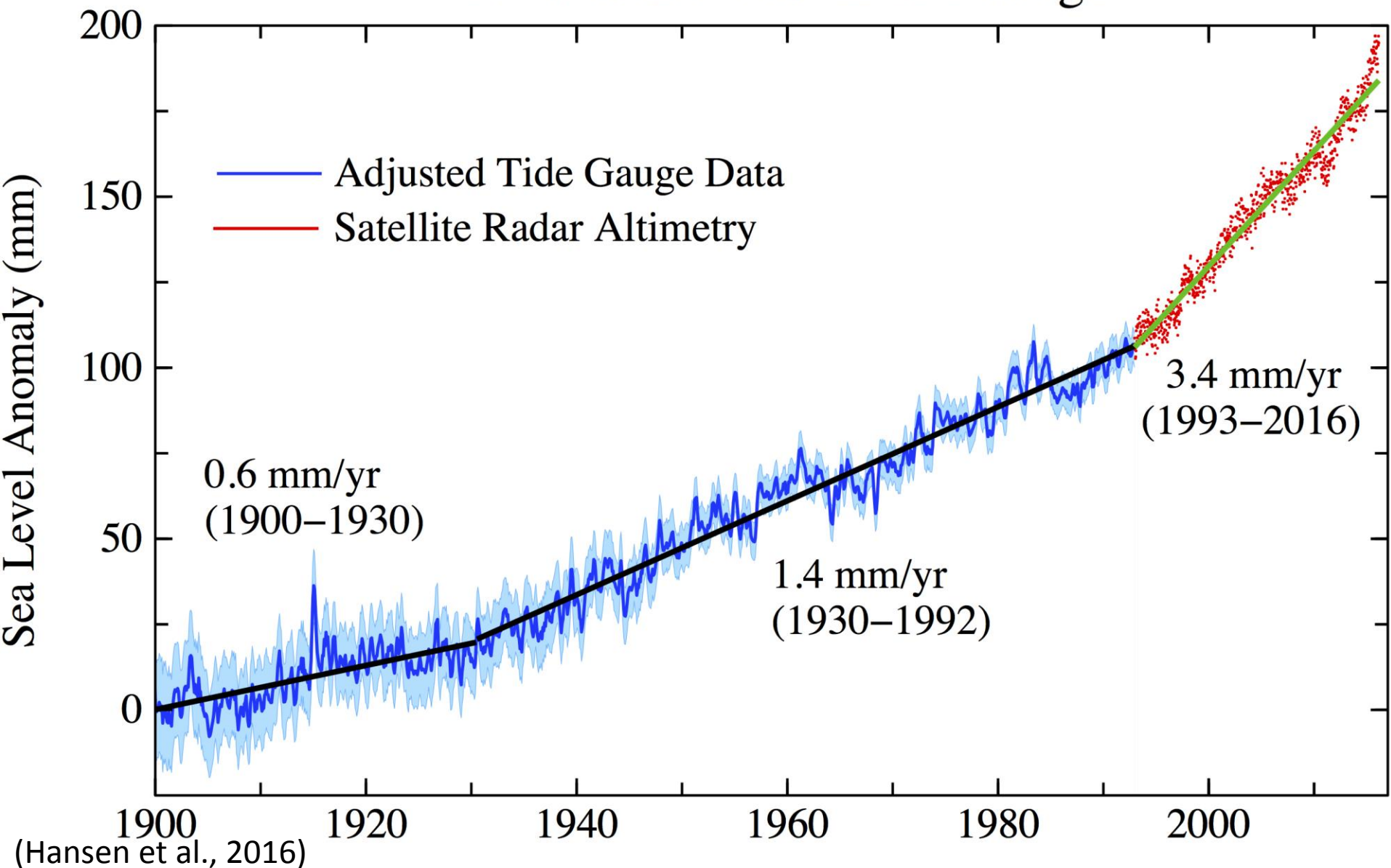
1922



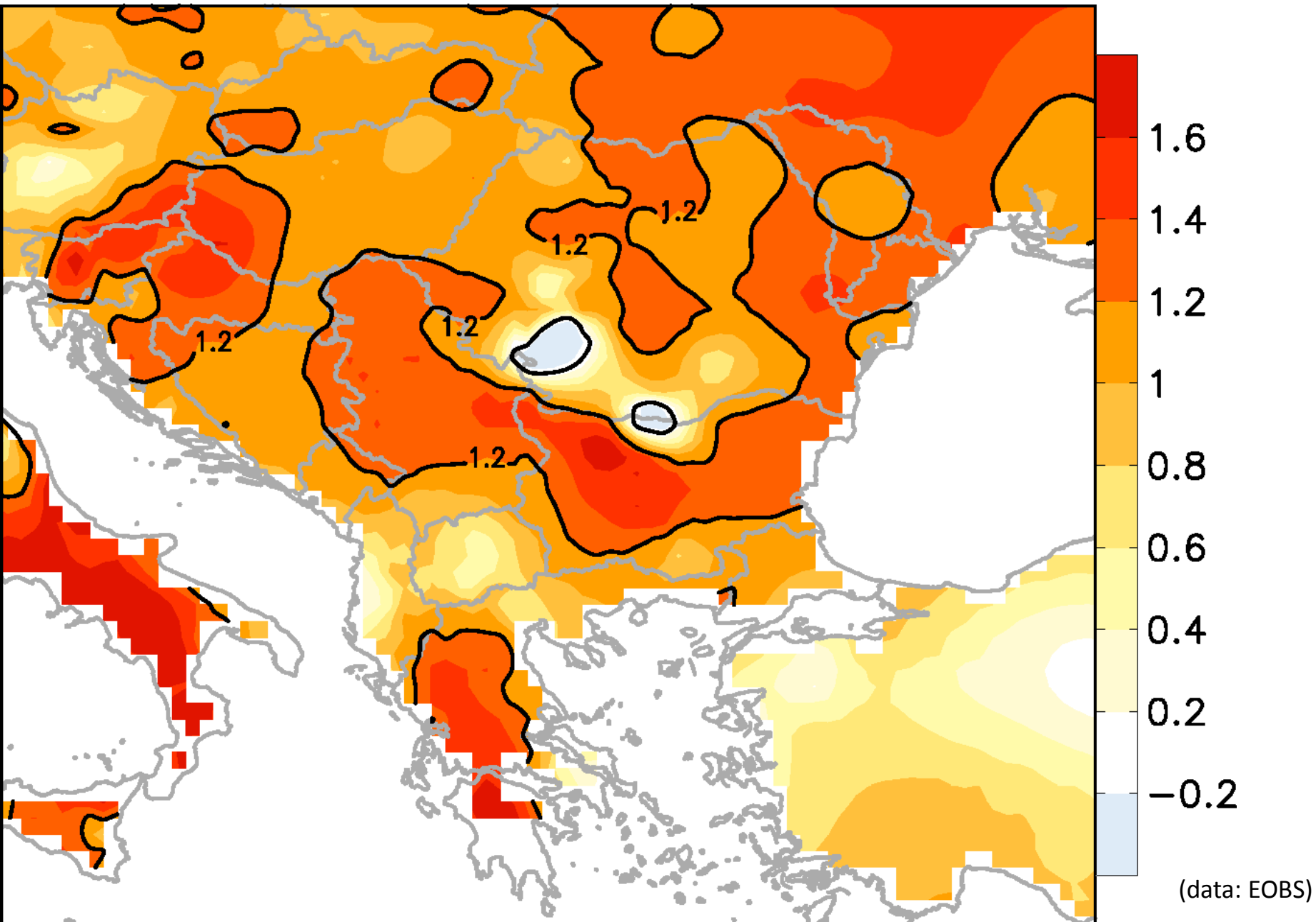
2016



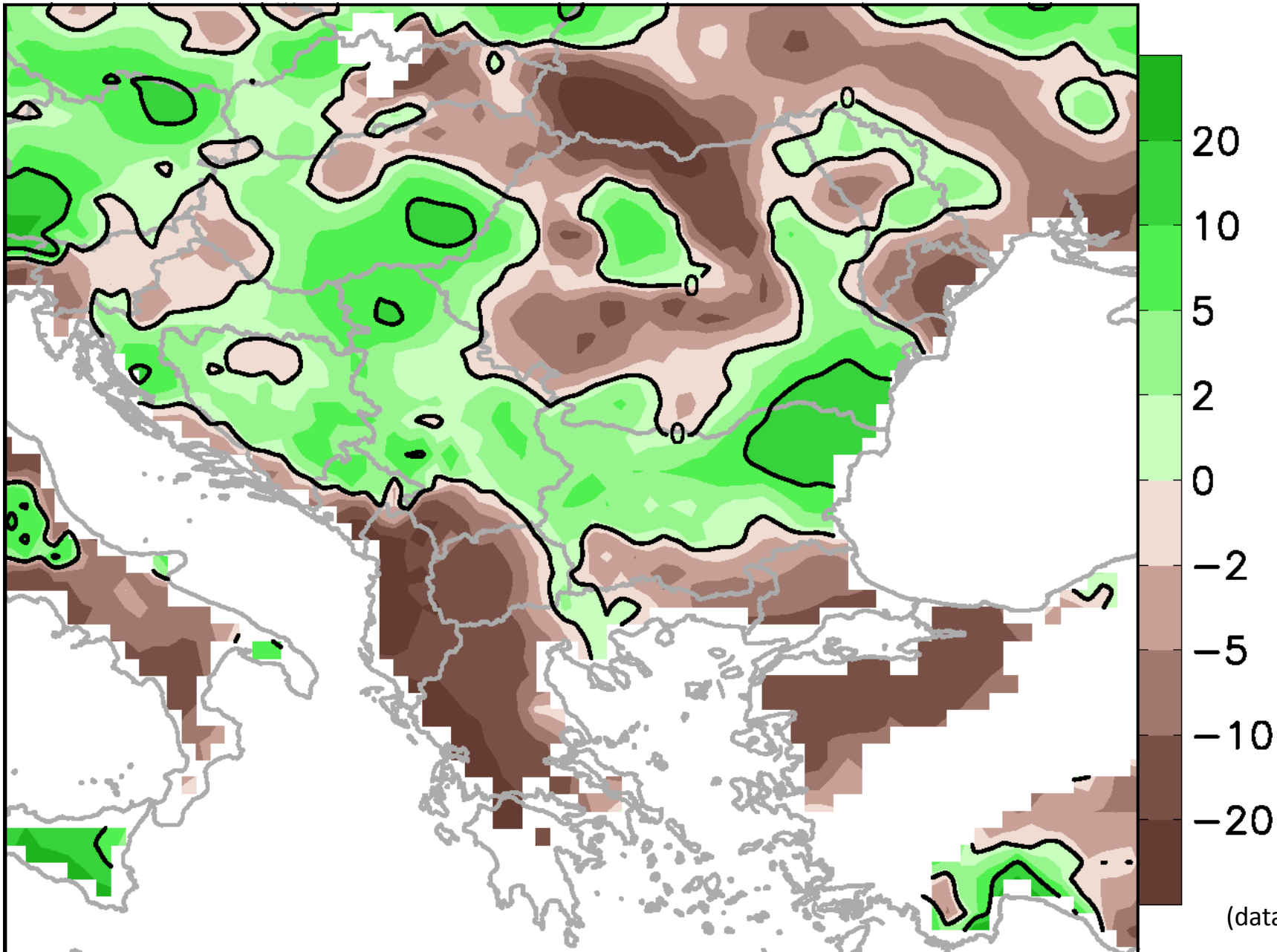
Global Mean Sea Level Change



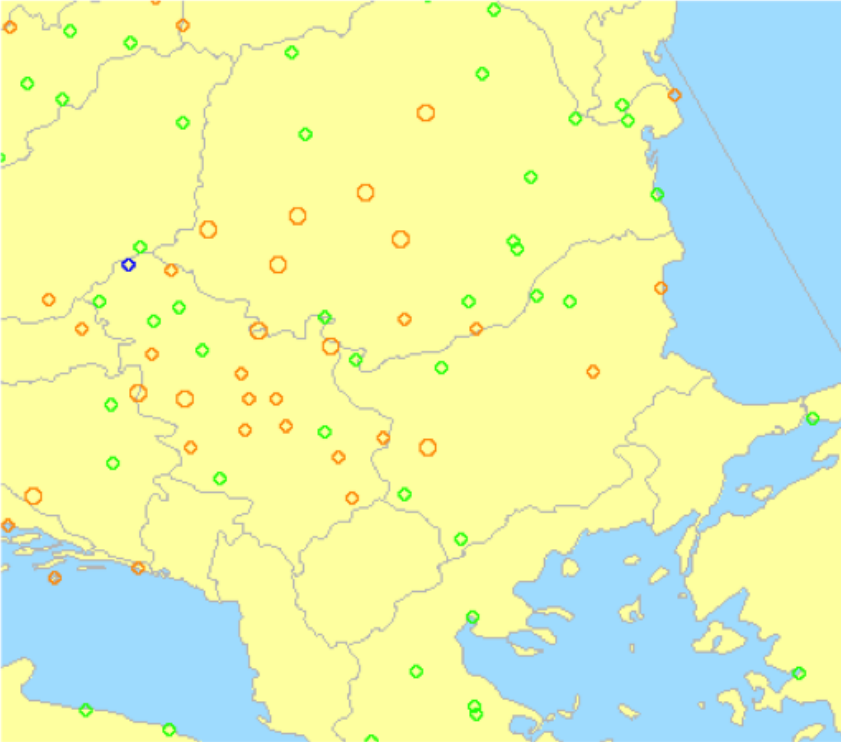
Promena srednje godišnje temperature (°C) 2001-2014 u odnosu na 1961-1990



Promena godišnjih padavina (%) 1985-2014 u odnosu na 1961-1990



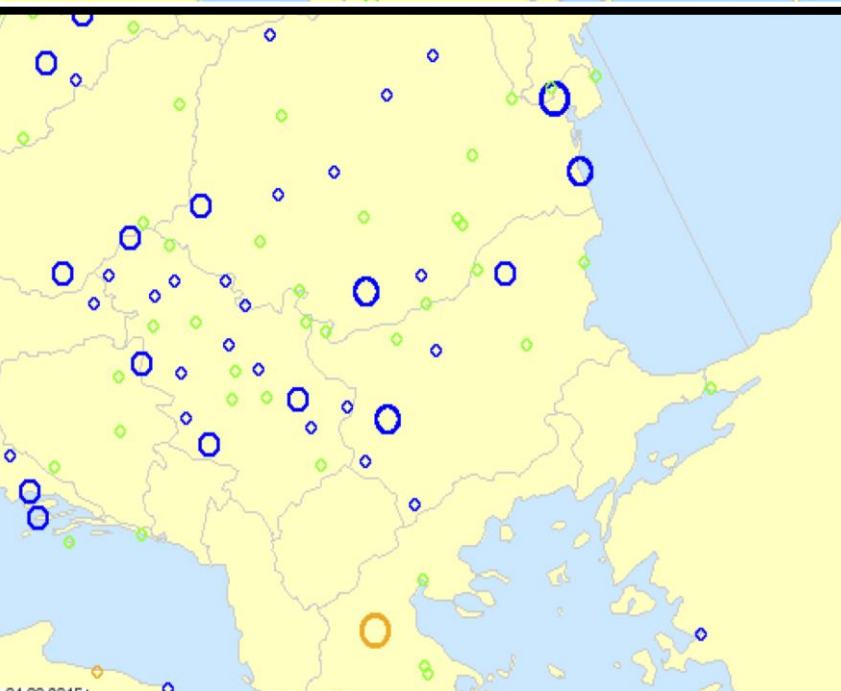
(data: EOBS)



Annual no of days/decade

- > 9
- 6 – 9
- 3 – 6
- 0 – 3
- pos. but n.s. at 5%
- n.s. at 25%
- neg. but n.s. at 5%
- -3 – 0
- -6 – -3
- -9 – -6
- < -9

Trend uzastopnih suvih dana za sezonu Jun-Jul-Avgust (1951-2014)

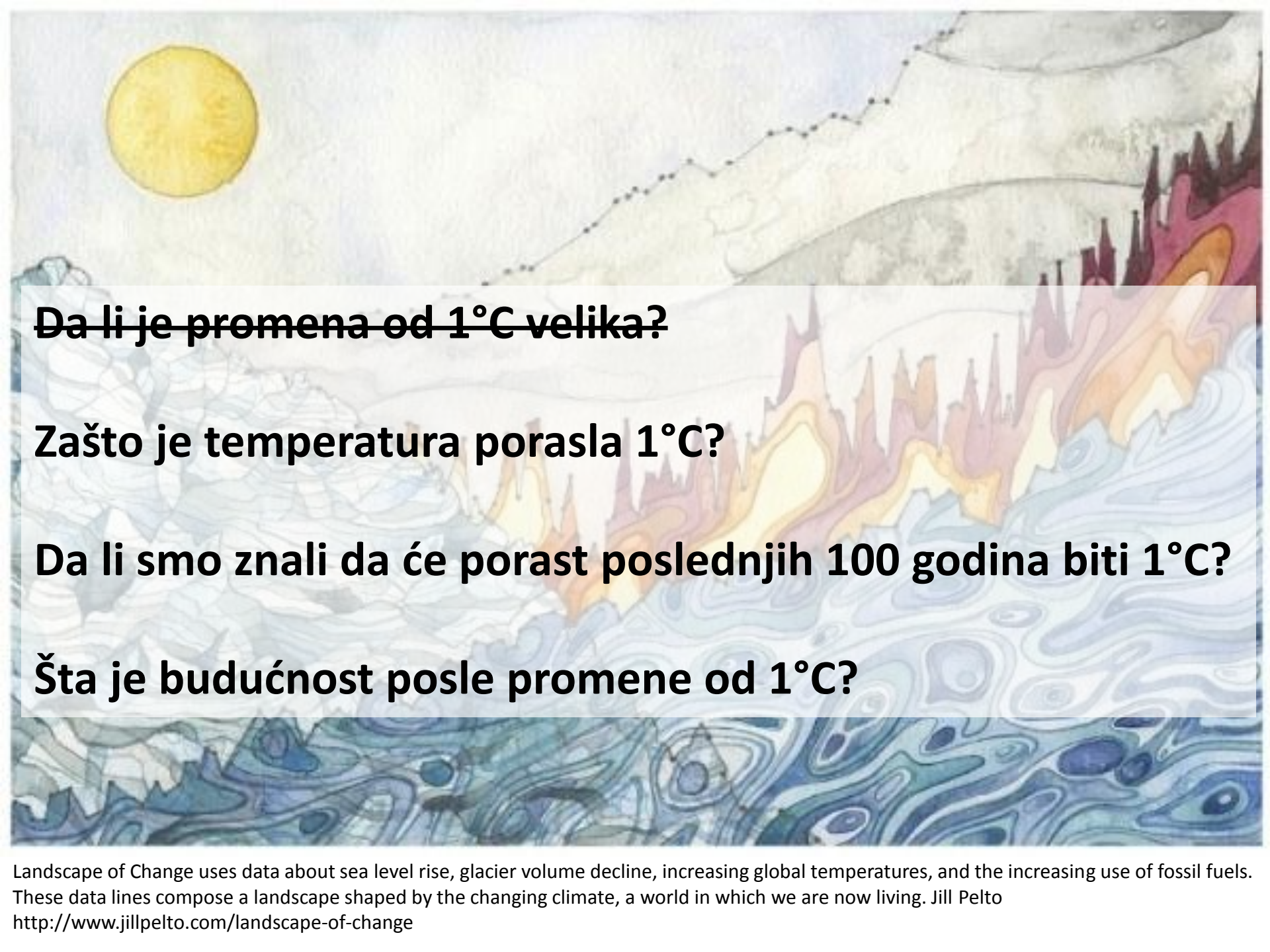


%/decade

- > 3
- 2 – 3
- 1 – 2
- 0 – 1
- pos. but n.s. at 5%
- n.s. at 25%
- neg. but n.s. at 5%
- -1 – 0
- -2 – -1
- -3 – -2
- < -3

Trend godišnjeg indeksa R95pTOT (1951-2014) [Top 5% dnevnih akumulacija]

(data: ECA&D)



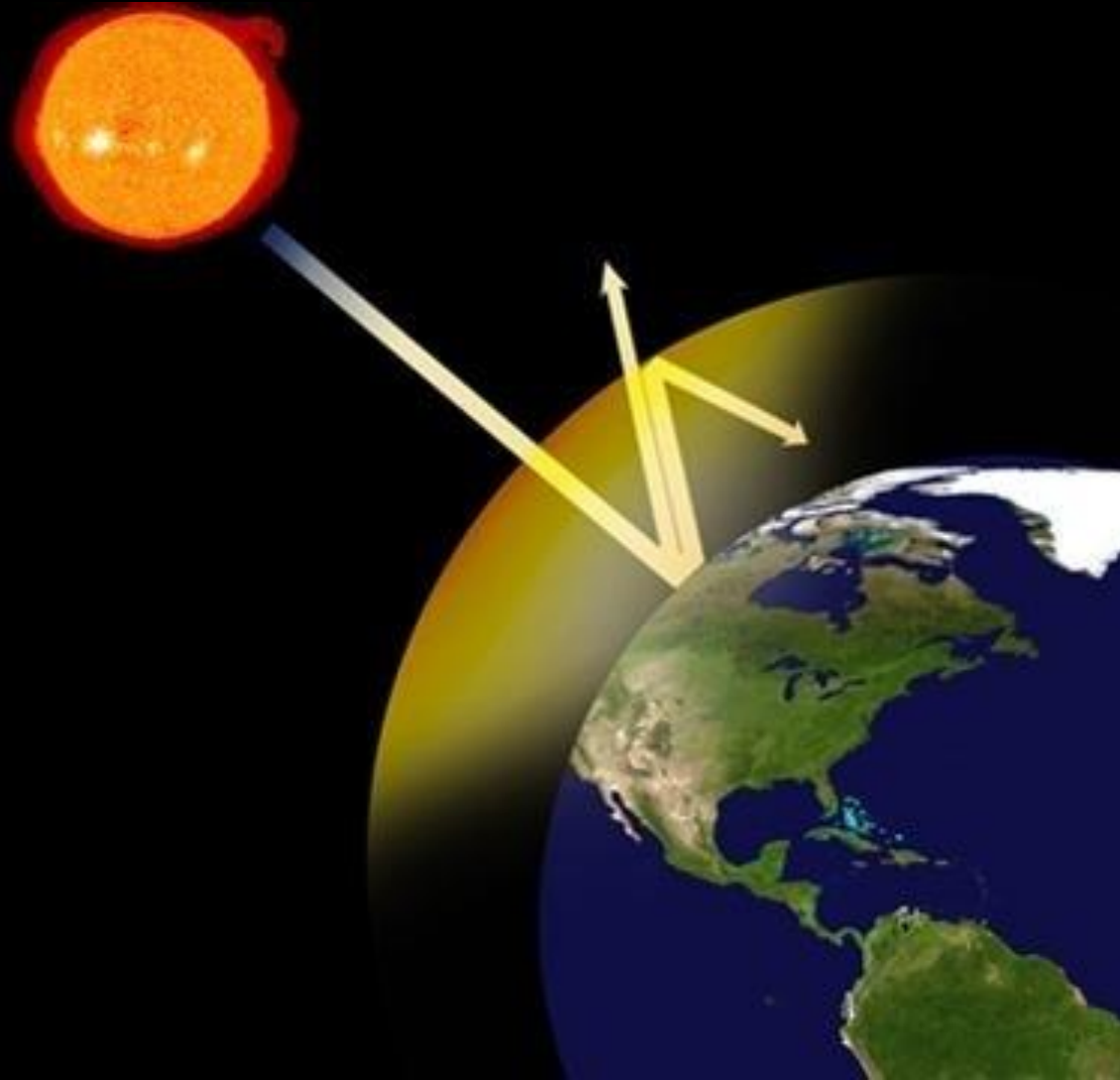
~~Da li je promena od 1°C velika?~~

Zašto je temperatura porasla 1°C?

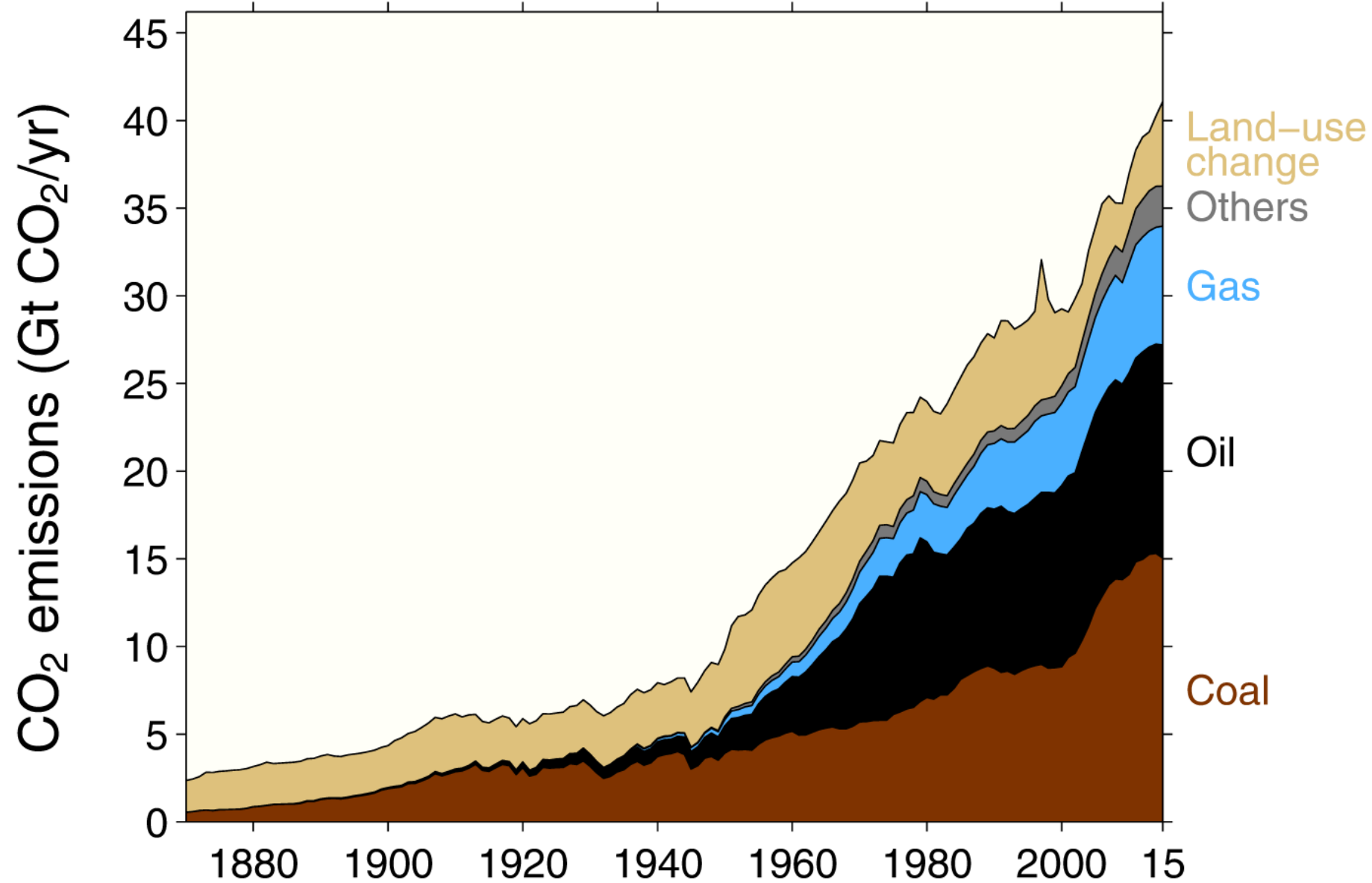
Da li smo znali da će porast poslednjih 100 godina biti 1°C?

Šta je budućnost posle promene od 1°C?

Efekat staklene bašte



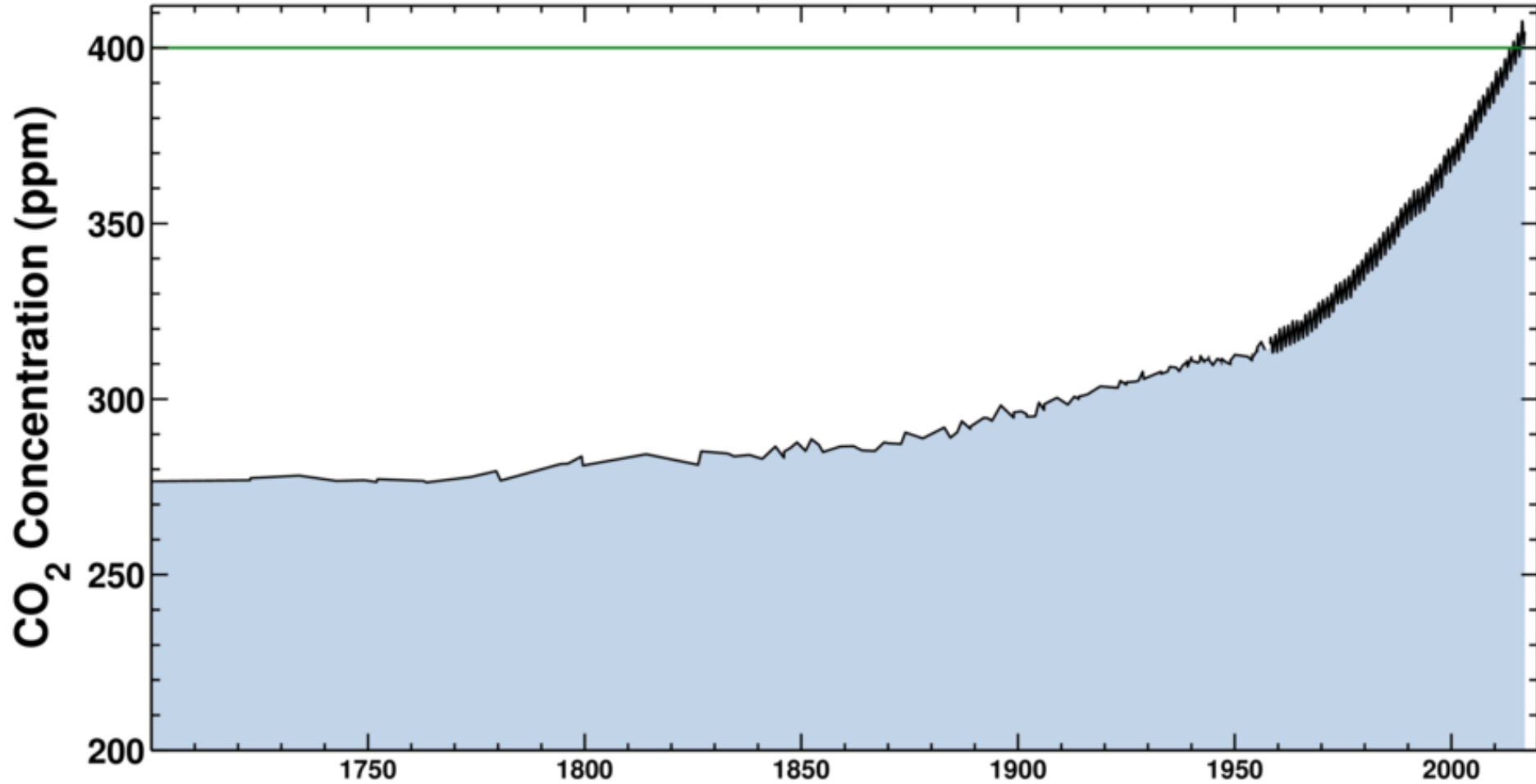
Data: CDIAC/GCP



Latest CO₂ reading
January 30, 2017

406.96 ppm

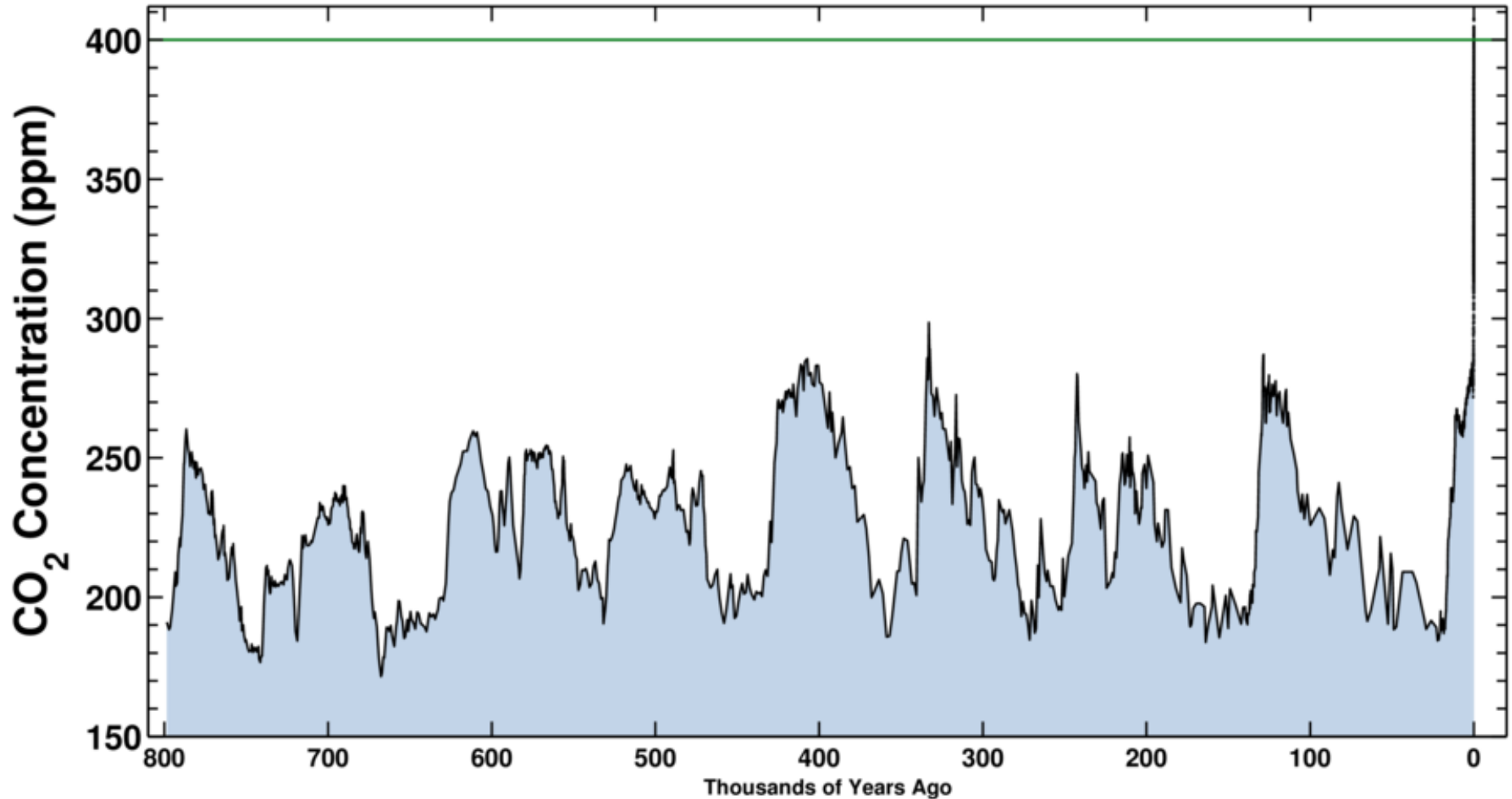
Ice-core data before 1958. Mauna Loa data after 1958.



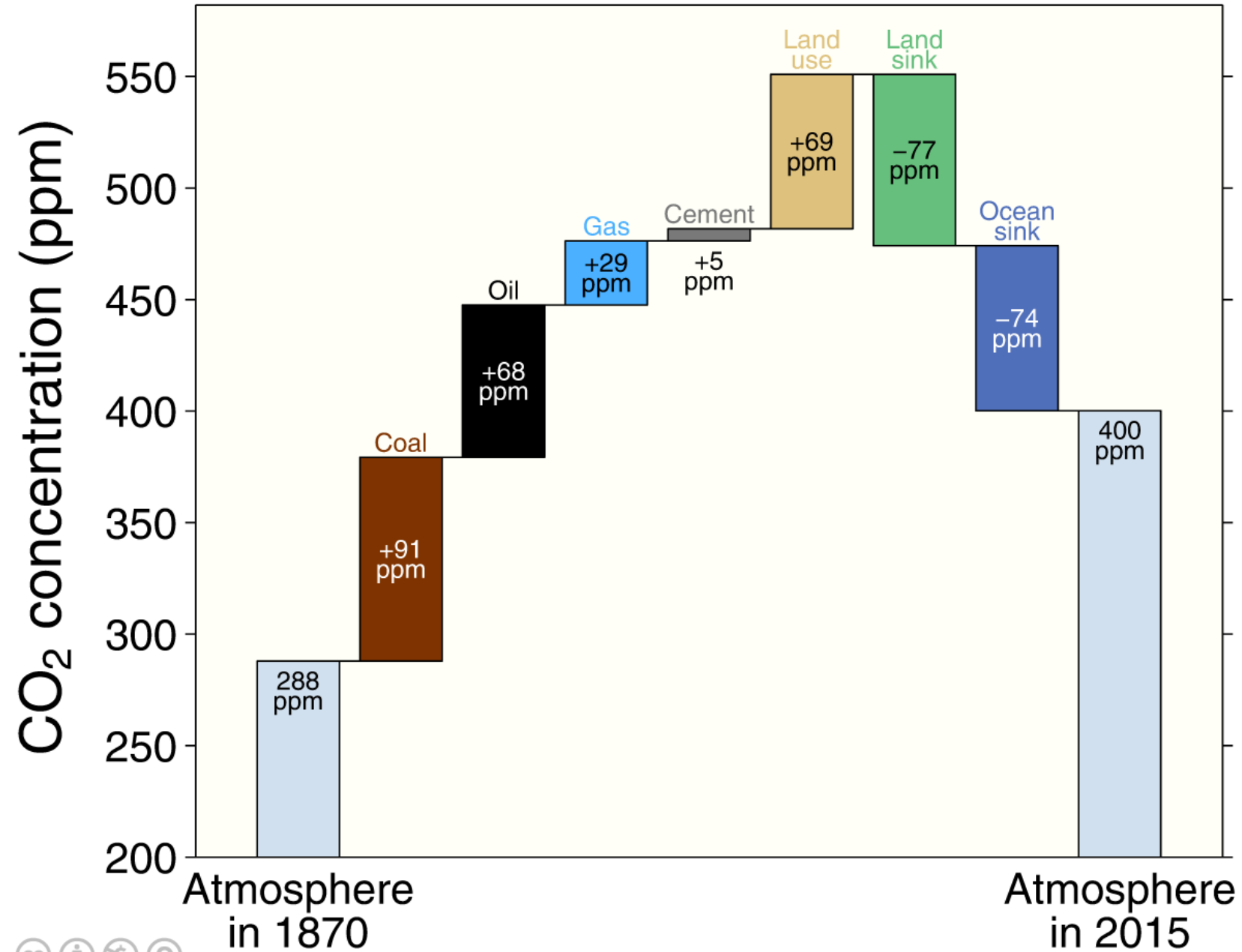
Latest CO₂ reading
January 30, 2017

406.96 ppm

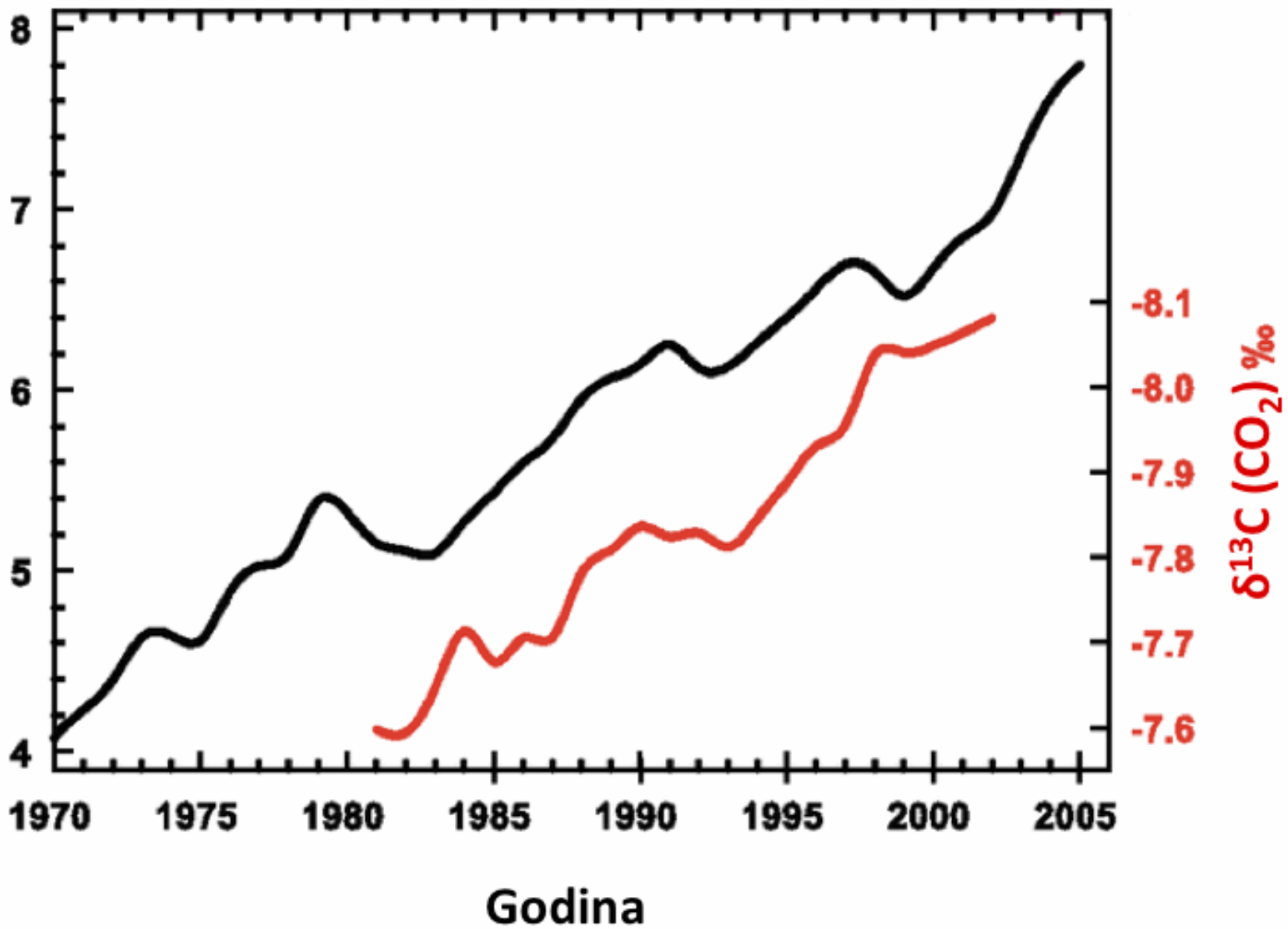
Ice-core data before 1958. Mauna Loa data after 1958.

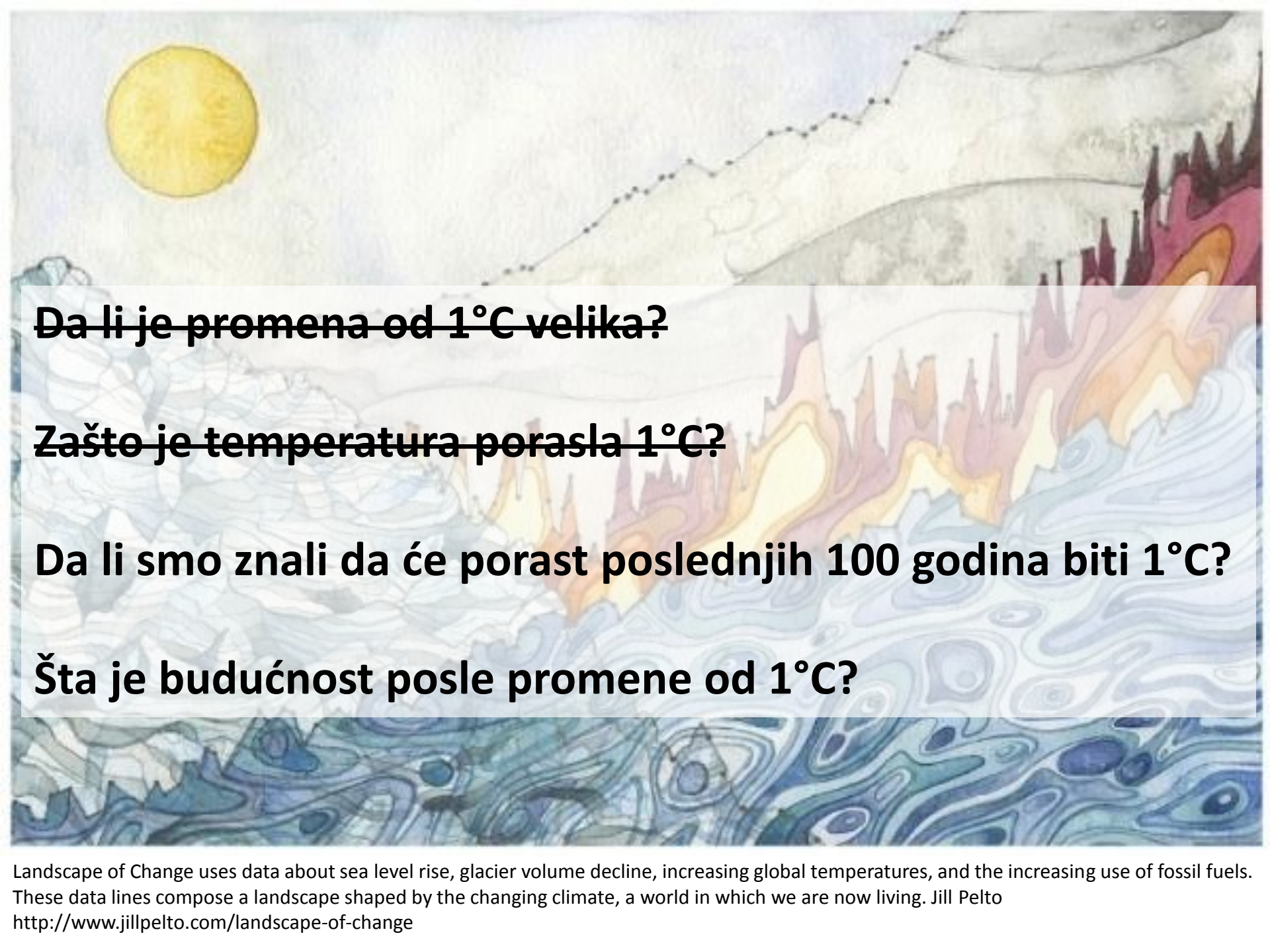


Data: CDIAC/NOAA-ESRL/GCP/Joos et al 2013/Khatriwala et al 2013



(b)
Globalna emisija GtC/godini





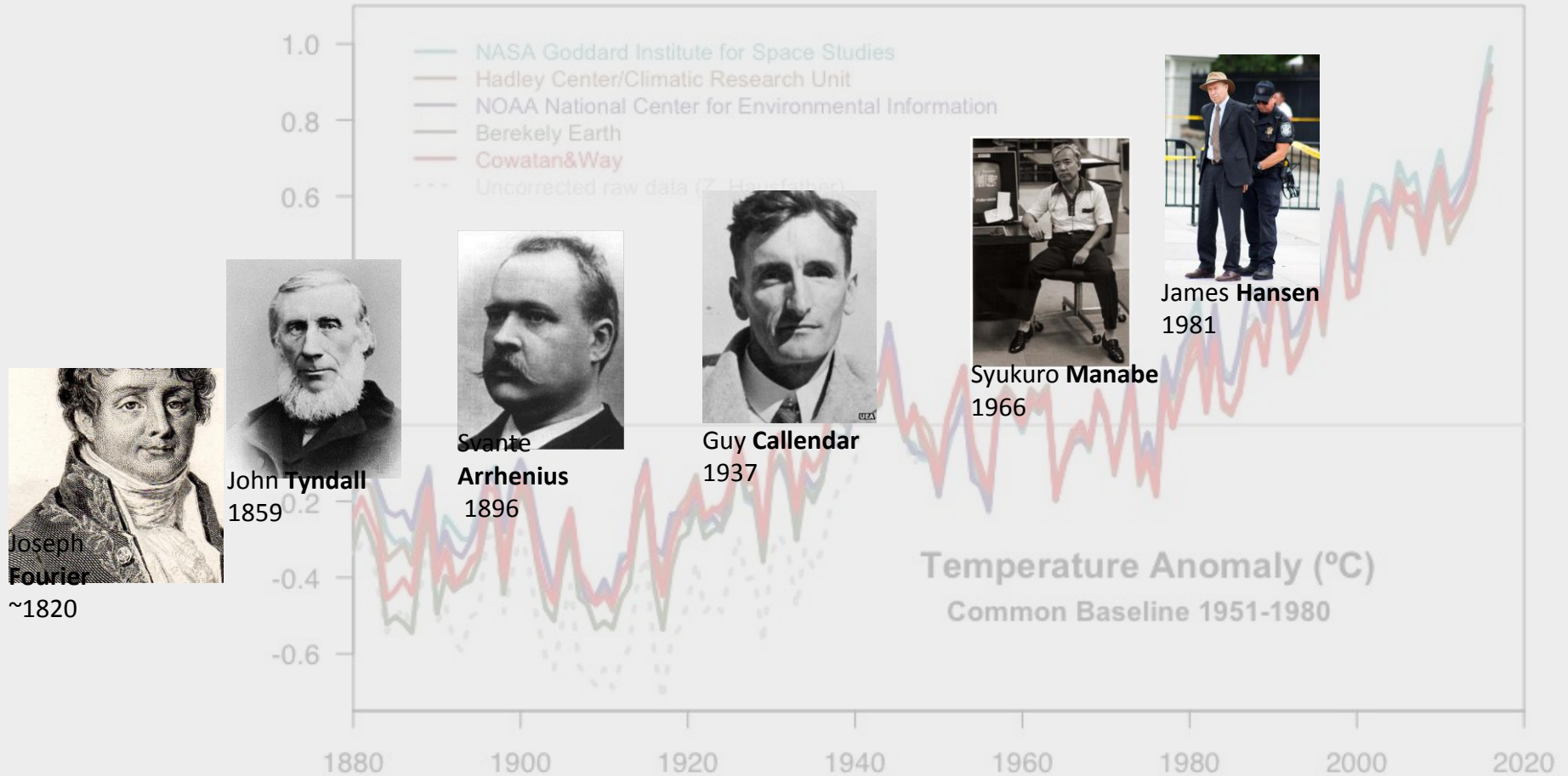
Da li je promena od 1°C velika?

Zašto je temperatura porasla 1°C?

Da li smo znali da će porast poslednjih 100 godina biti 1°C?

Šta je budućnost posle promene od 1°C?

Od efekta staklene bašte do projekcija buduće klime





~~Da li je promena od 1°C velika?~~

~~Zašto je temperatura porasla 1°C?~~

~~Da li smo znali da će porast poslednjih 100 godina biti 1°C?~~

Šta je budućnost posle promene od 1°C?

Data: CDIAC/GCP/IPCC/Fuss et al 2014

Emissions from fossil fuels and cement (GtCO₂/yr)

Scenario categories

- >1000 ppm CO₂eq
- 720–1000 ppm
- 580–720 ppm
- 480–580 ppm
- 430–480 ppm

2016 Estimate

Historical emissions

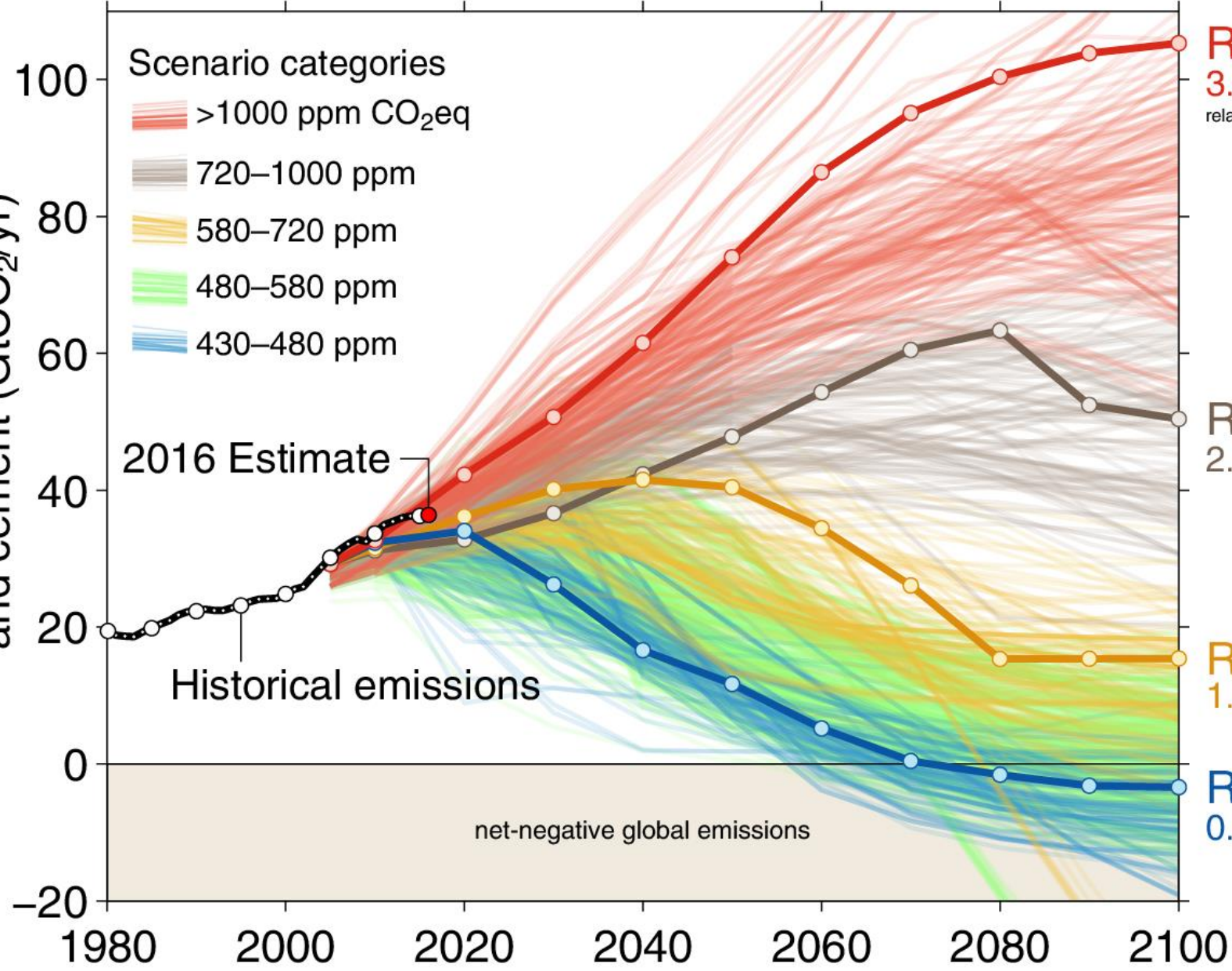
net-negative global emissions

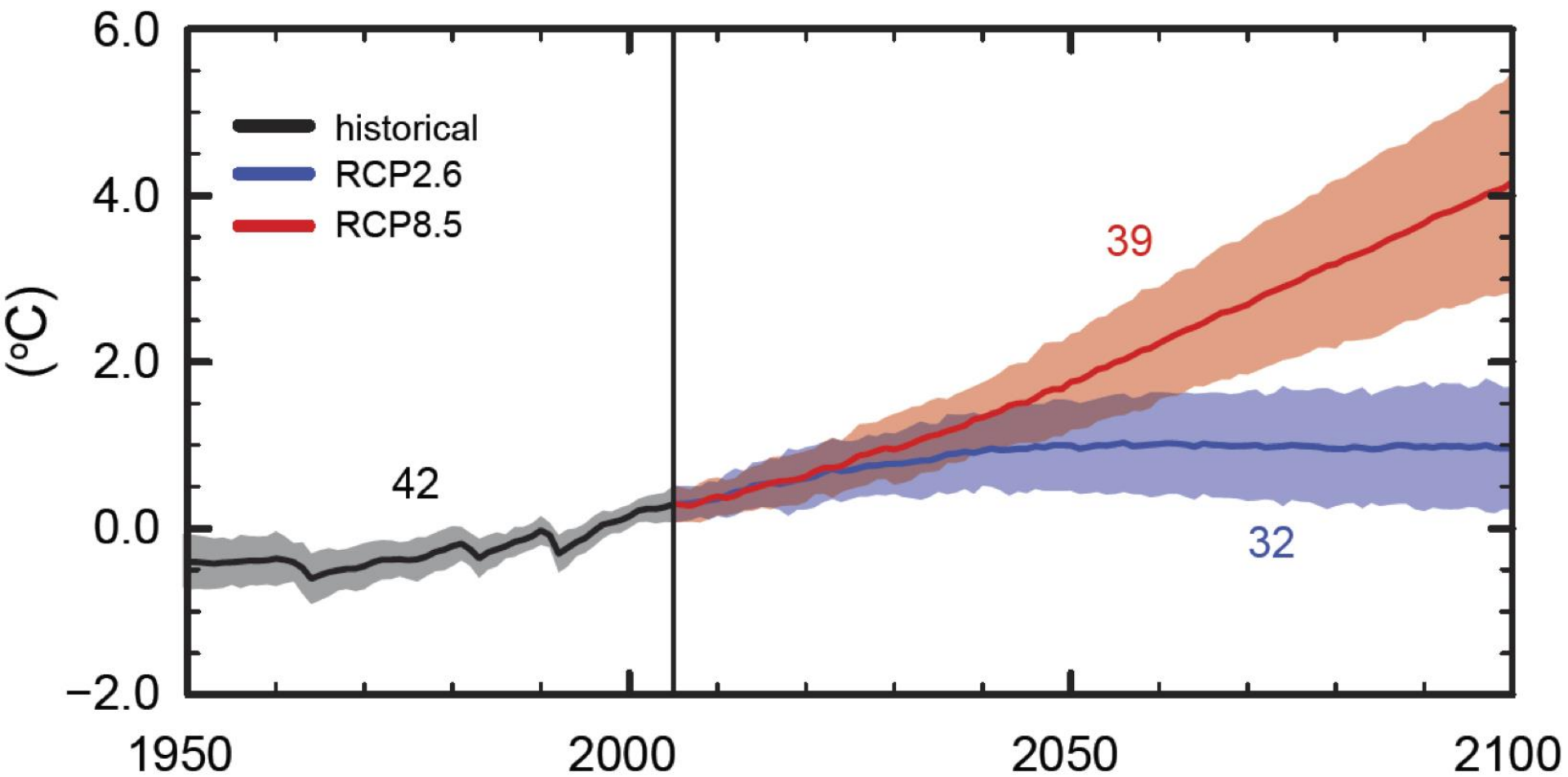
RCP8.5
3.2–5.4°C
relative to 1850–1900

RCP6
2.0–3.7°C

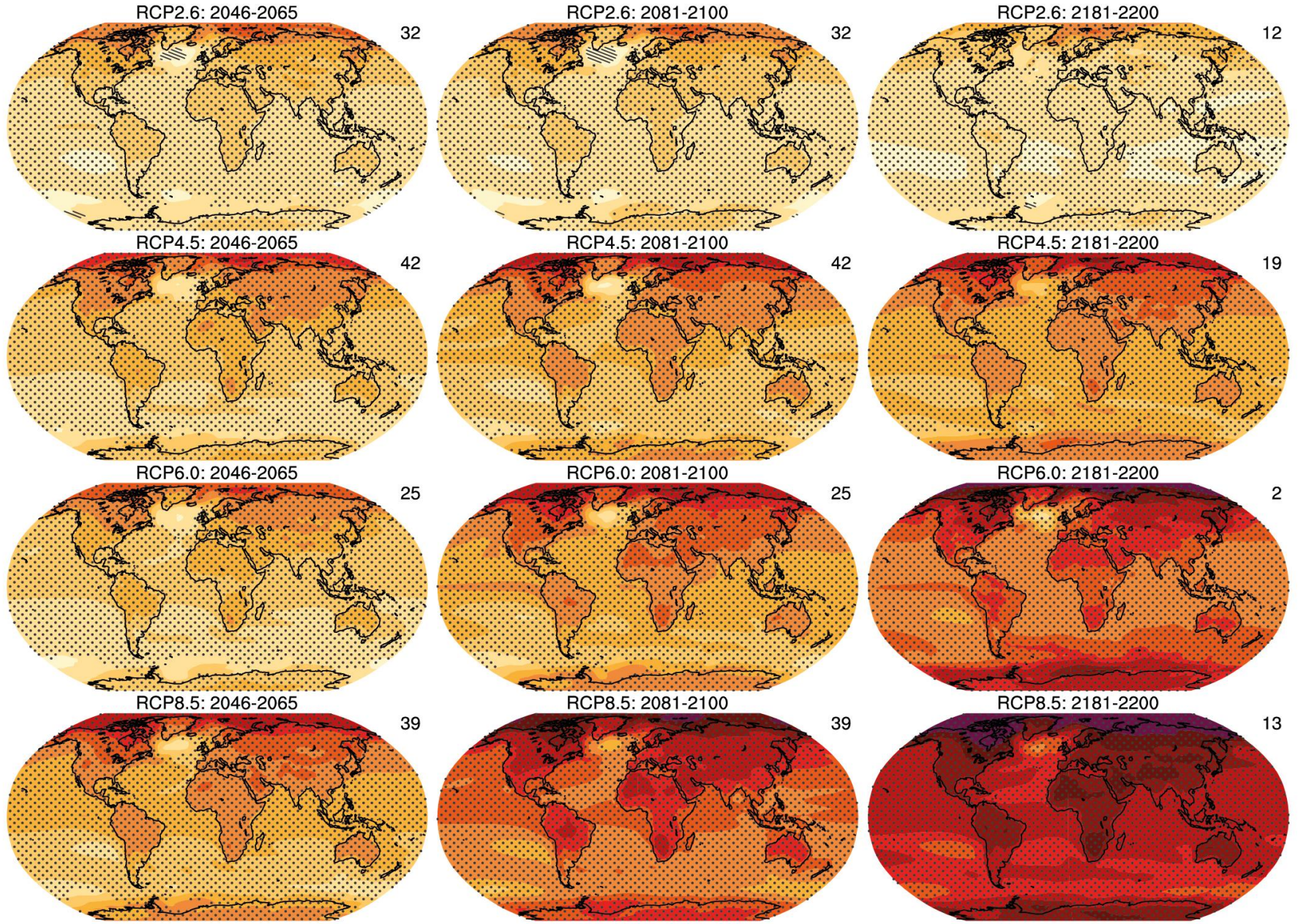
RCP4.5
1.7–3.2°C

RCP2.6
0.9–2.3°C

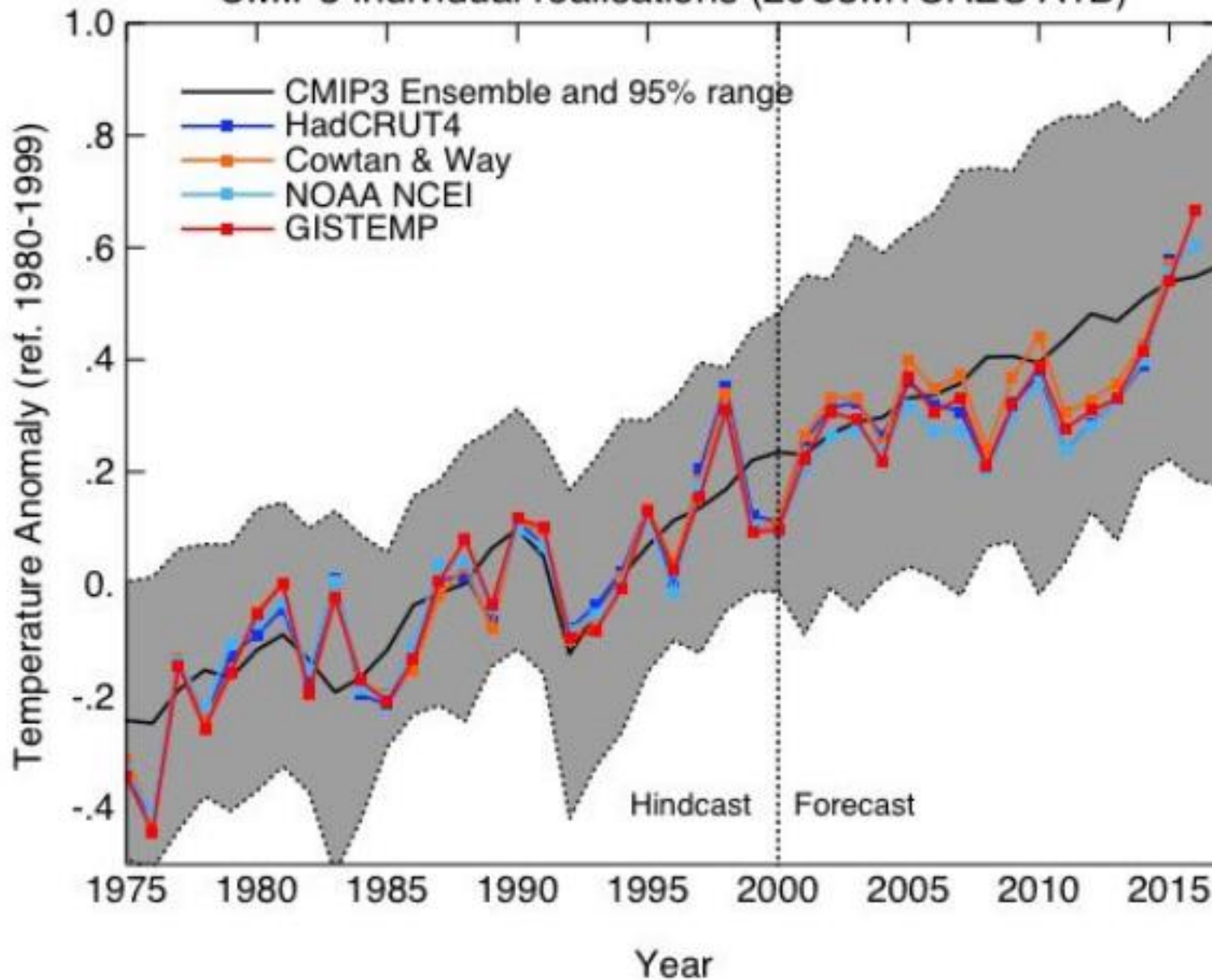




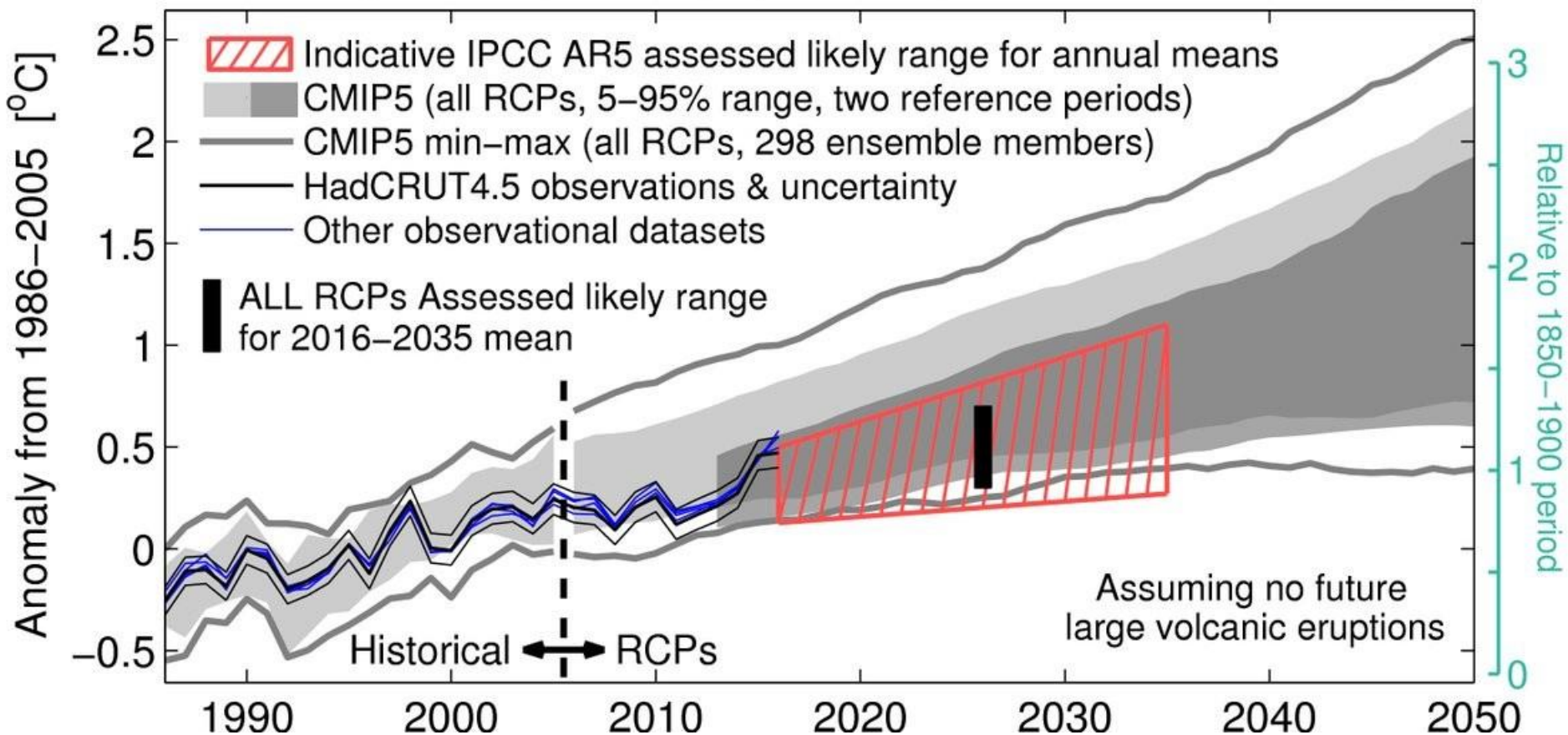
Annual mean surface air temperature change



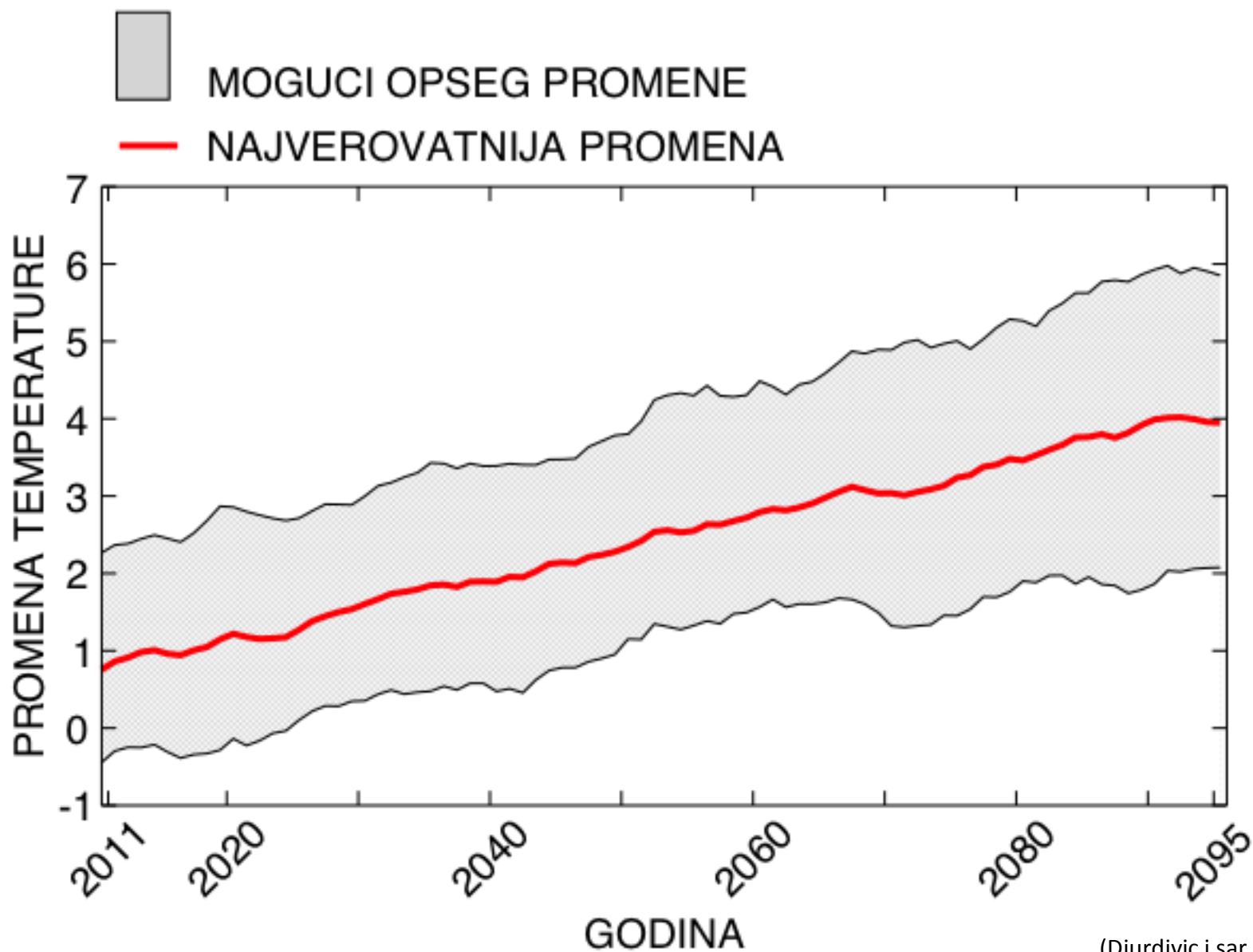
CMIP3 individual realisations (20C3M+SRES A1B)



CMIP5 near-term global temperature projections: updated from IPCC AR5 Fig. 11.25

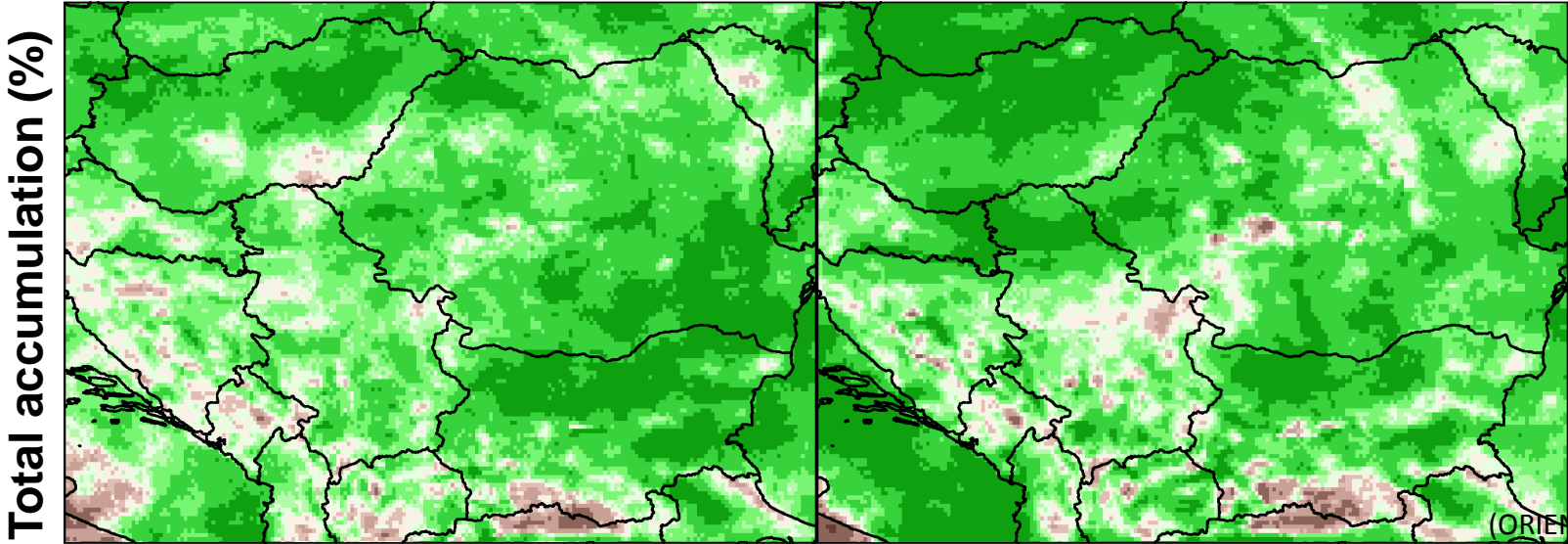
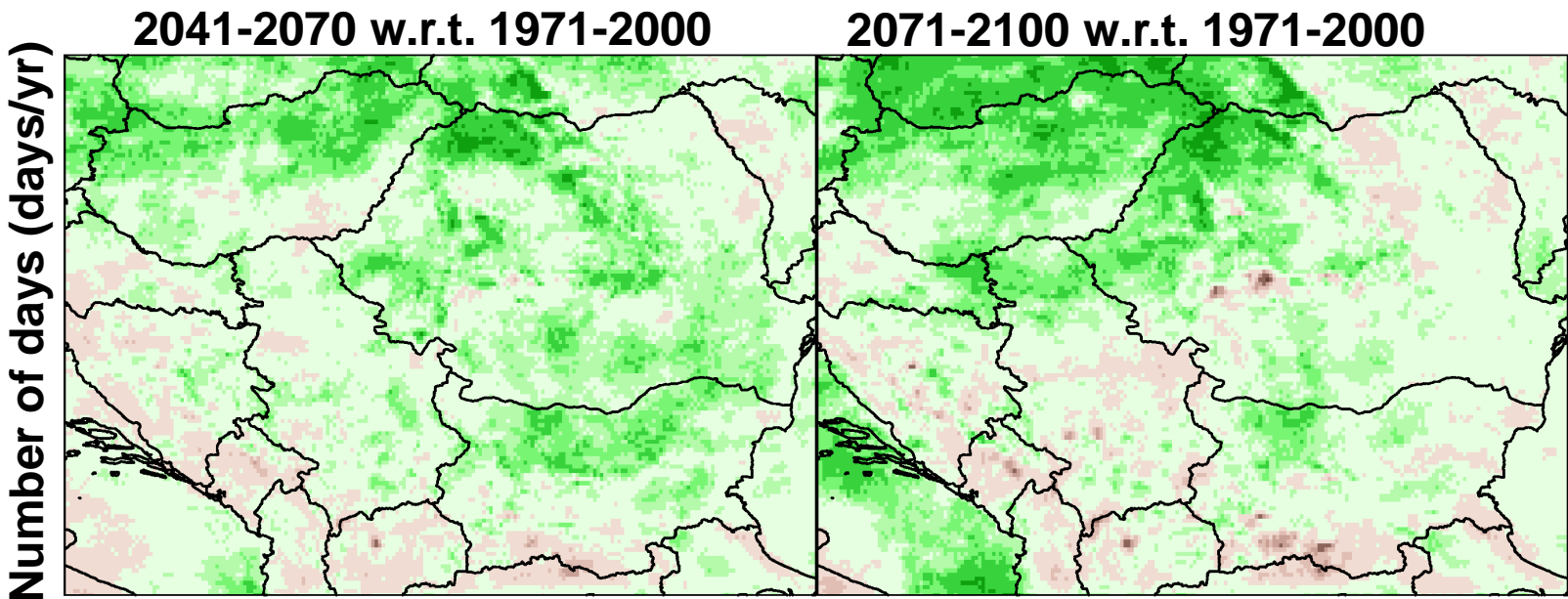


Srbija - Promena temperature A1B scenario EBU-POM regionalni klimatski model + *ENSEMBLES*

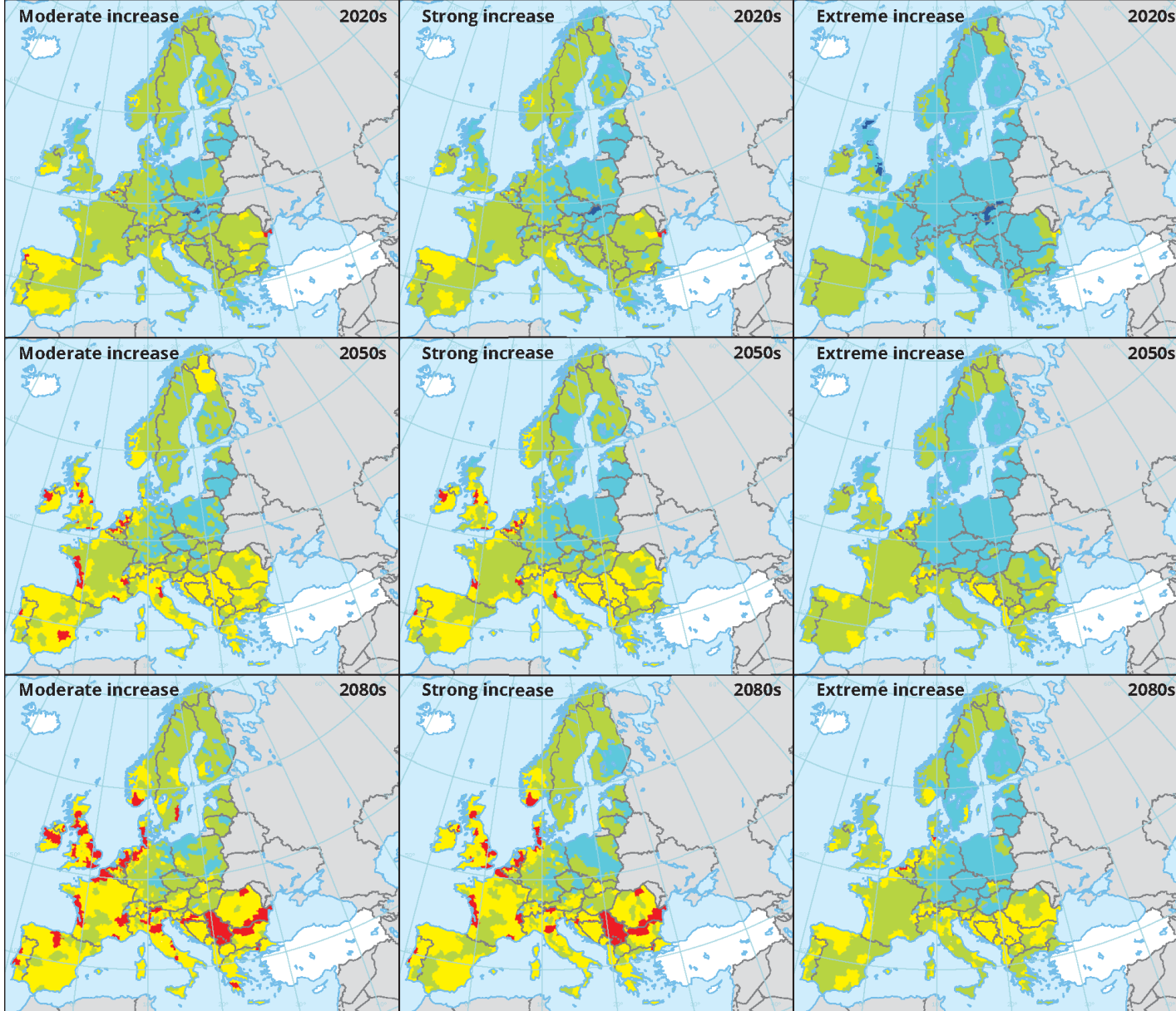


NMMB - model (8 km res.)

RCP8.5 scenario – R95p (top 5% precipitation) change



(ORIENTGATE - RHMS, Djurdjvic and Krzic, 2014)



Projected increase in exposure to multiple climate-related hazards

Number of hazards with moderate/strong/extreme increase



No data

Outside coverage

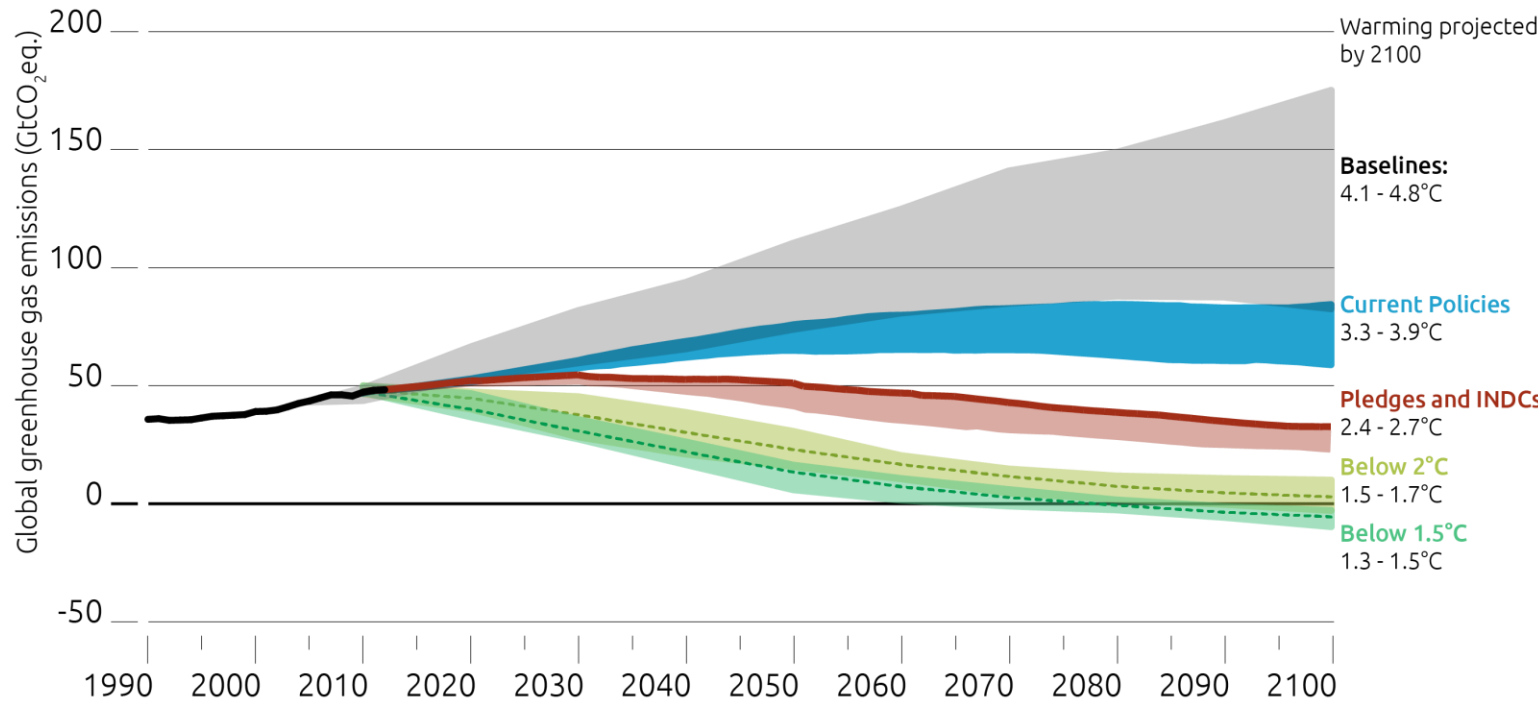
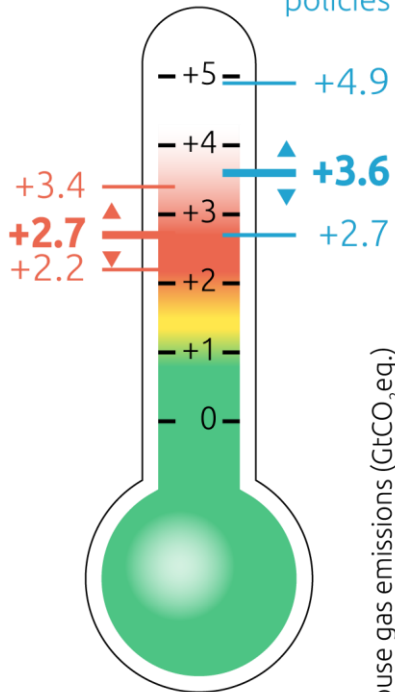
0 500 1 000 1 500 km



L'OBJECTIF 2°C



Pledges °C Current policies



- Historical emissions, incl. LULUCF
- Current
- Reference*
- Pledge and INDCs
- 2°C consistent median and range**
- 1.5°C consistent median and range***

© www.climateactiontracker.org/
Climate Analytics/Ecofys/
NewClimate/PIK

Source:
Climate Action Tracker

* 5%-95% percentile of AR5 WGIII scenarios in concentration category 7, containing 64% of the baseline scenarios assessed by the IPCC
 ** Greater than 66% chance of staying within 2°C in 2100. Median and 10th to 90th percentile range. Pathway range excludes delayed action scenarios and any that deviate more than 5% from historic emissions in 2010.
 *** Greater than or equal to 50% chance of staying below 1.5°C in 2100. Median and 10th to 90th percentile range. Pathway range excludes delayed action scenarios and any that deviate more than 5% from historic emissions in 2010.



~~Da li je promena od 1°C velika?~~

~~Zašto je temperatura porasla 1°C?~~

H V A L A

~~Da li smo znali da će porast poslednjih 100 godina biti 1°C?~~

~~Šta je budućnost posle promene od 1°C?~~

H v a l a

