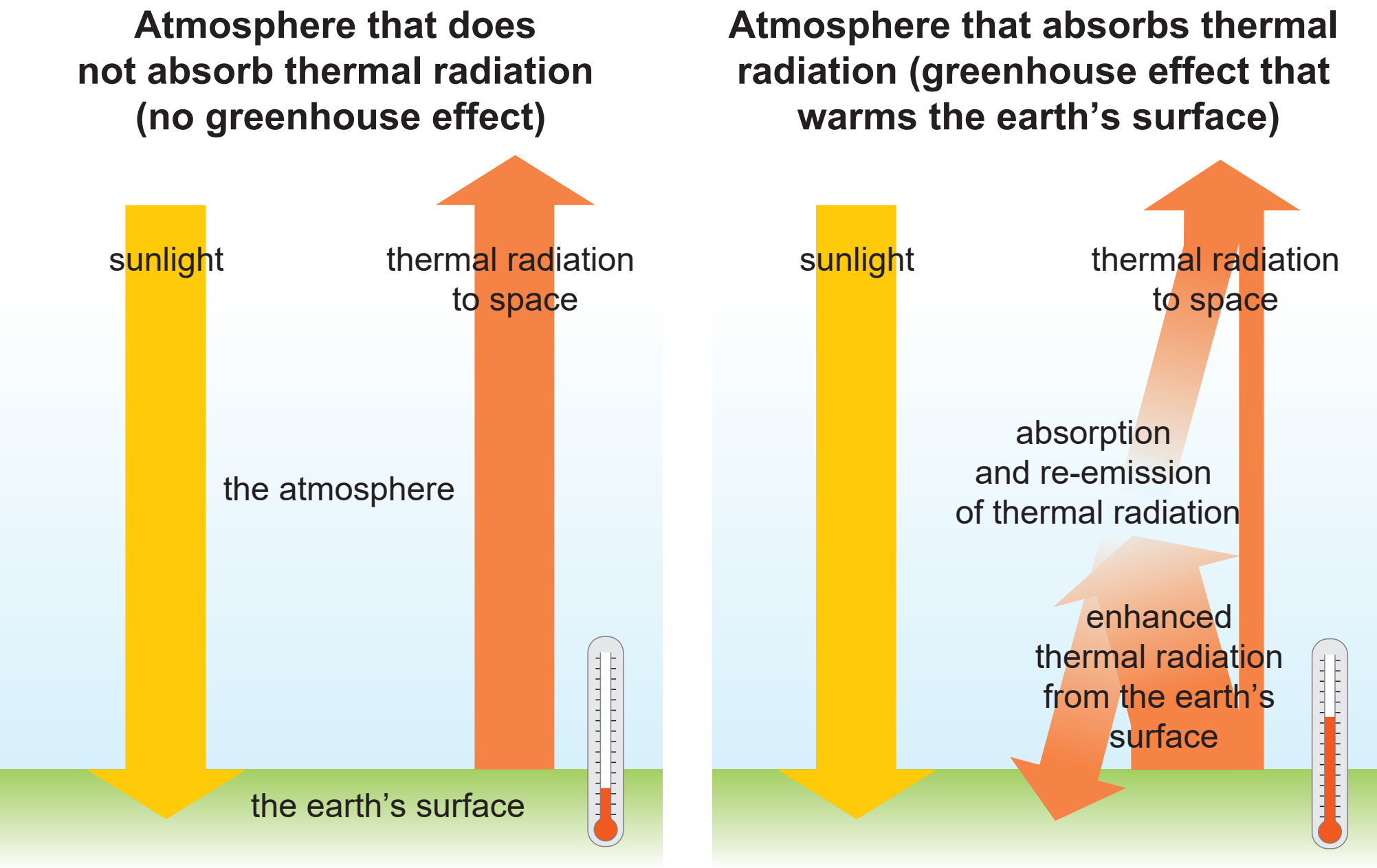
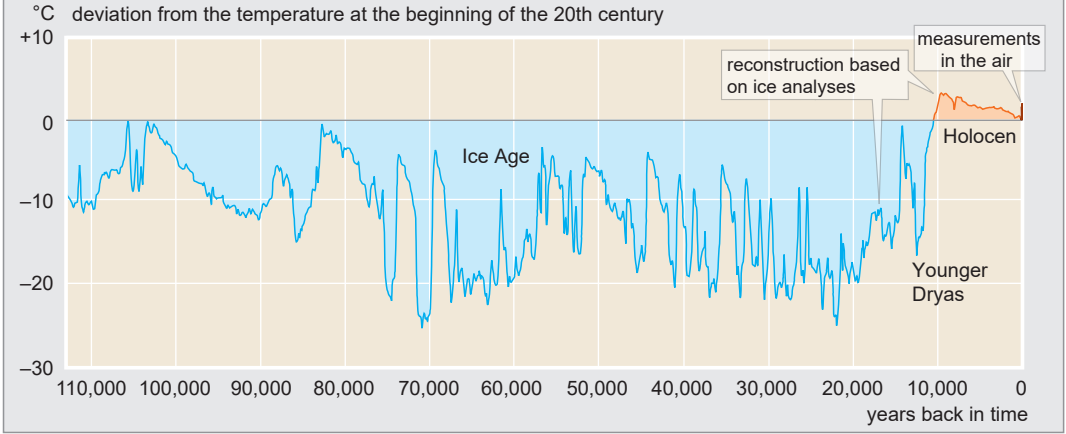
The greenhouse effect

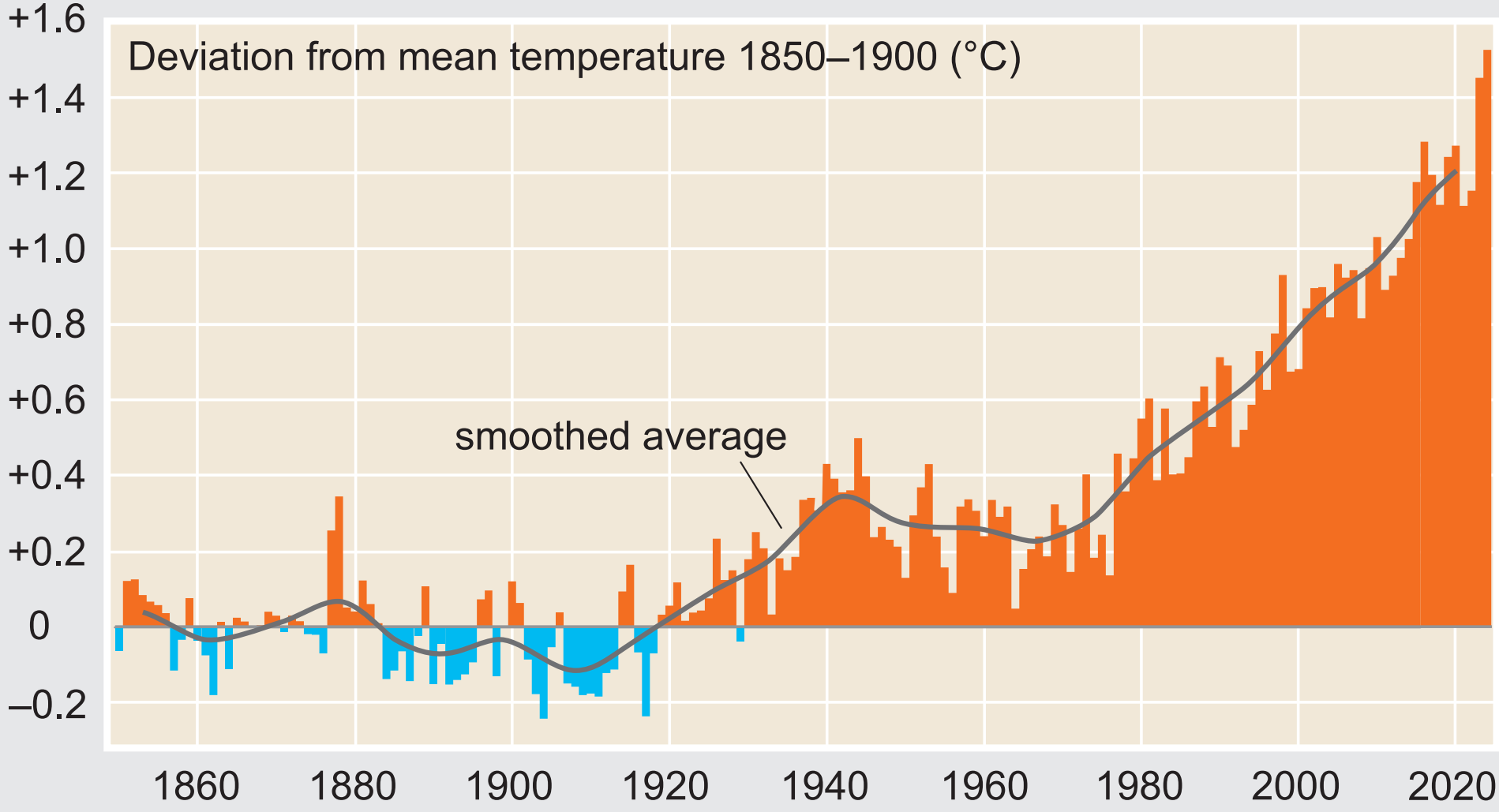


Temperature in Greenland during and after the last Ice Age



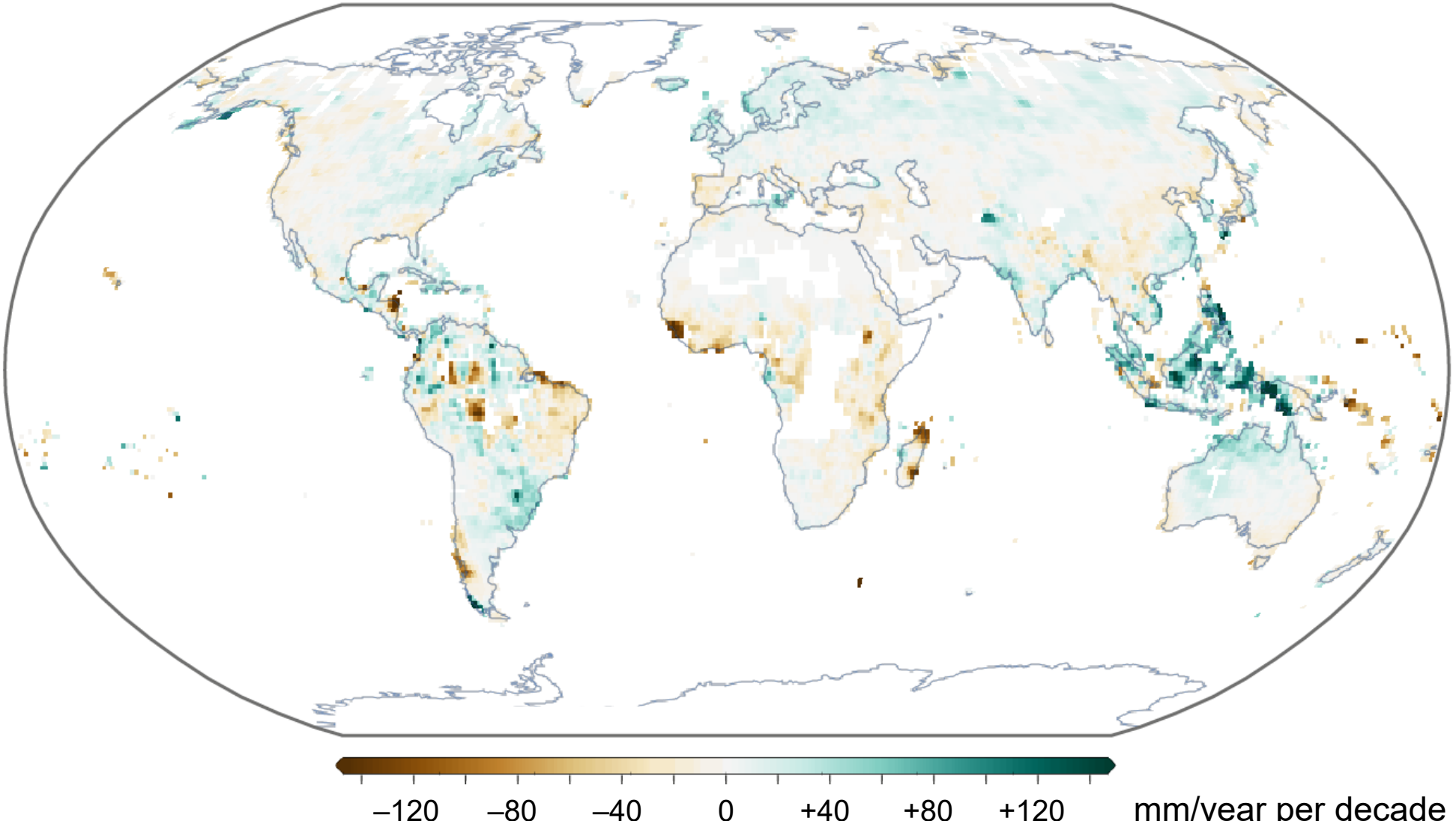
FROM S. JOHNSEN ET AL. (1995) AND THE CLIMATE CHANGE KNOWLEDGE PORTAL

Global annual mean temperature, 1850–2024



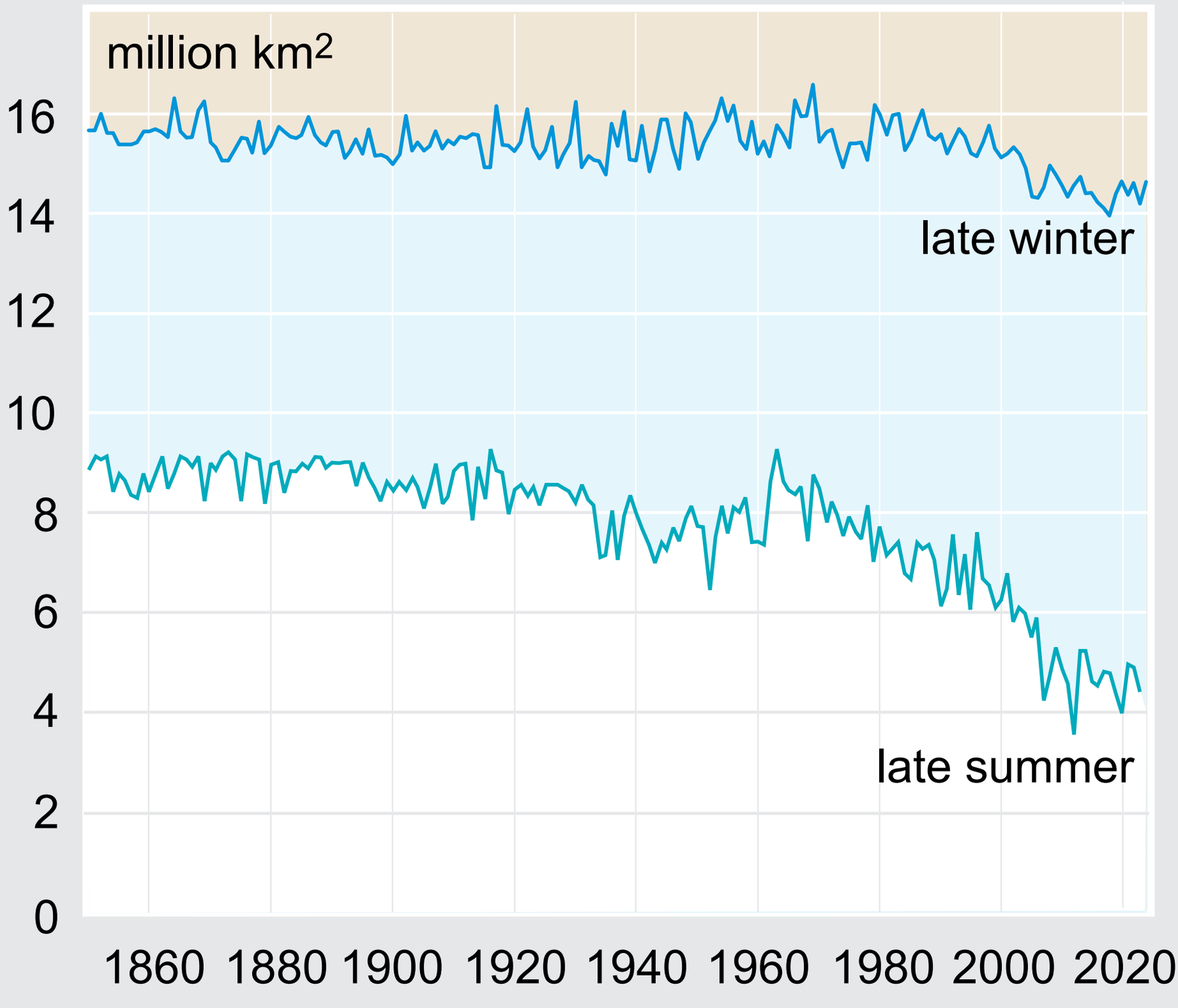
HadCRUT5 ANALYSIS, FROM THE CLIMATE RESEARCH UNIT, UNIV. OF EAST ANGLIA

Changes in precipitation 1961–2015

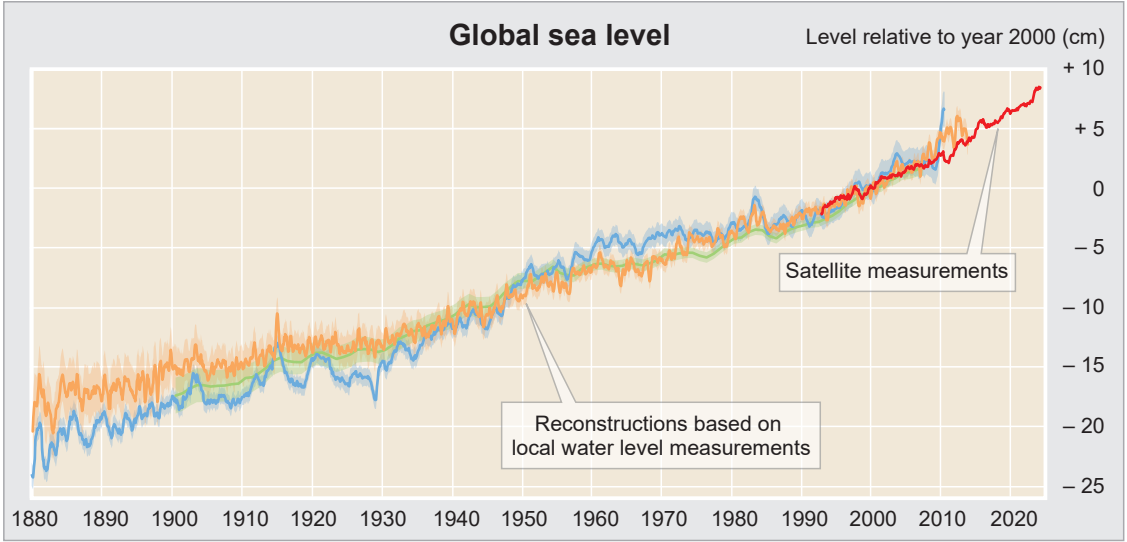


FROM IPCC WGI INTERACTIVE ATLAS

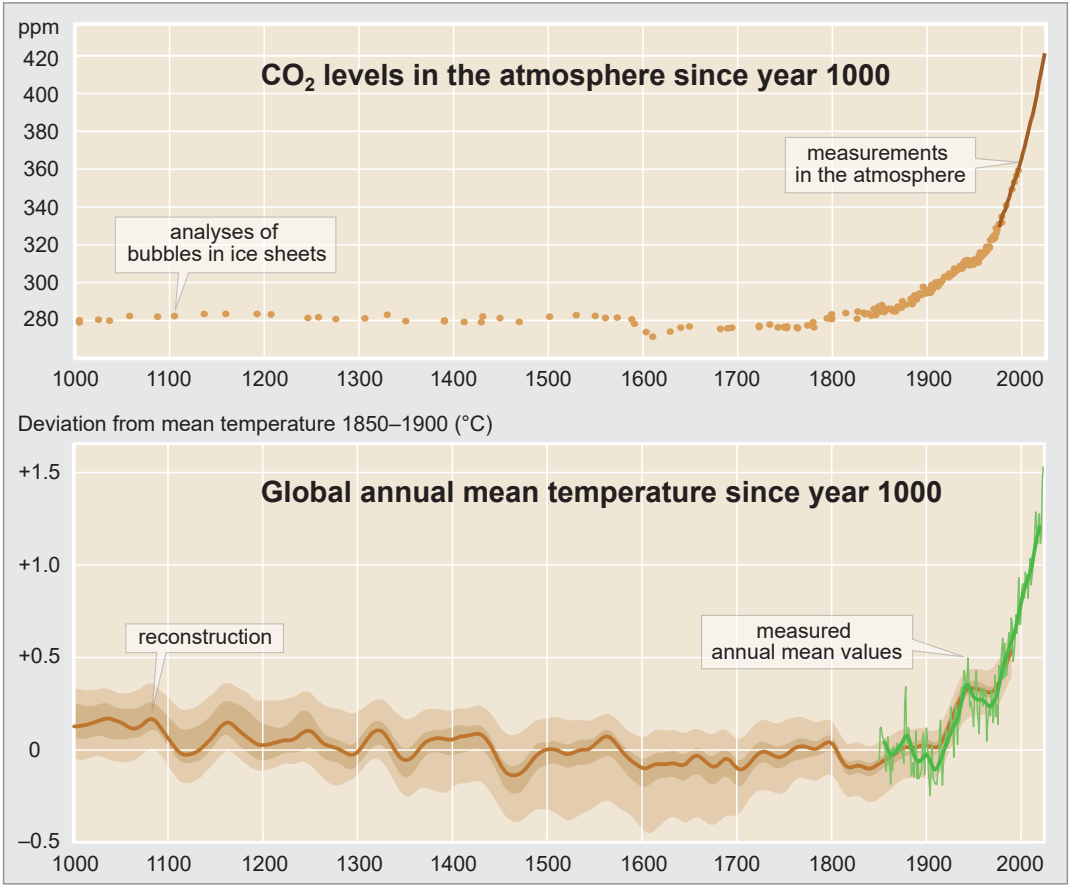
Sea ice in the northern hemisphere



FROM WALSH ET AL. (2016) AND OUR WORLD IN DATA

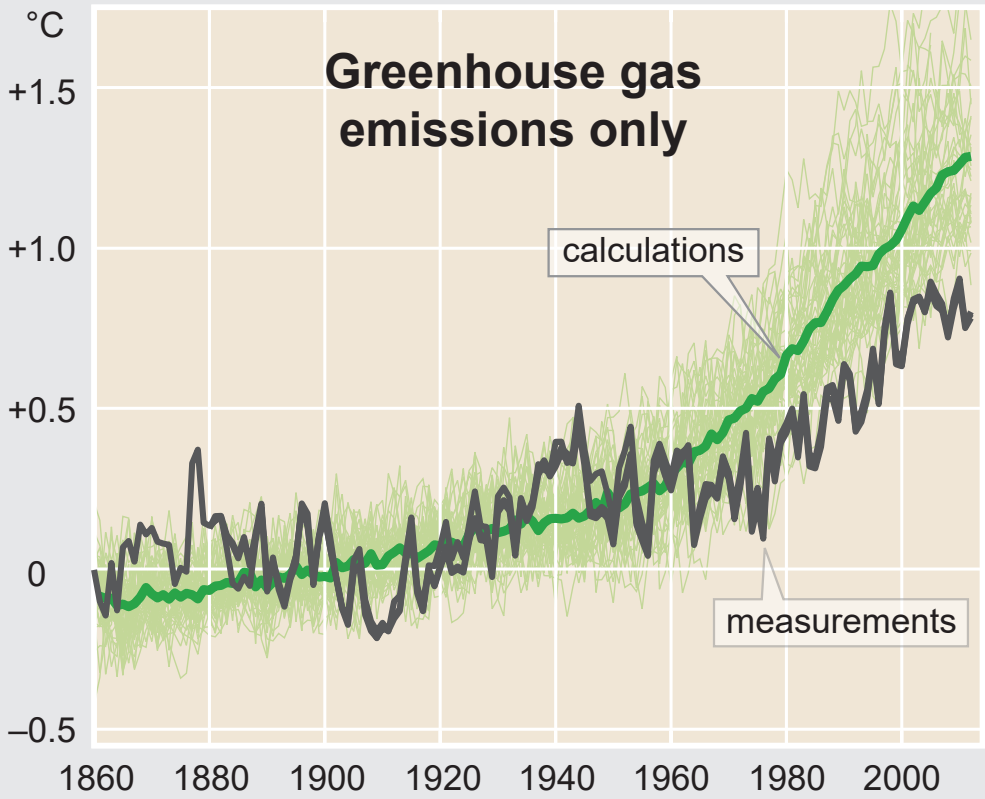


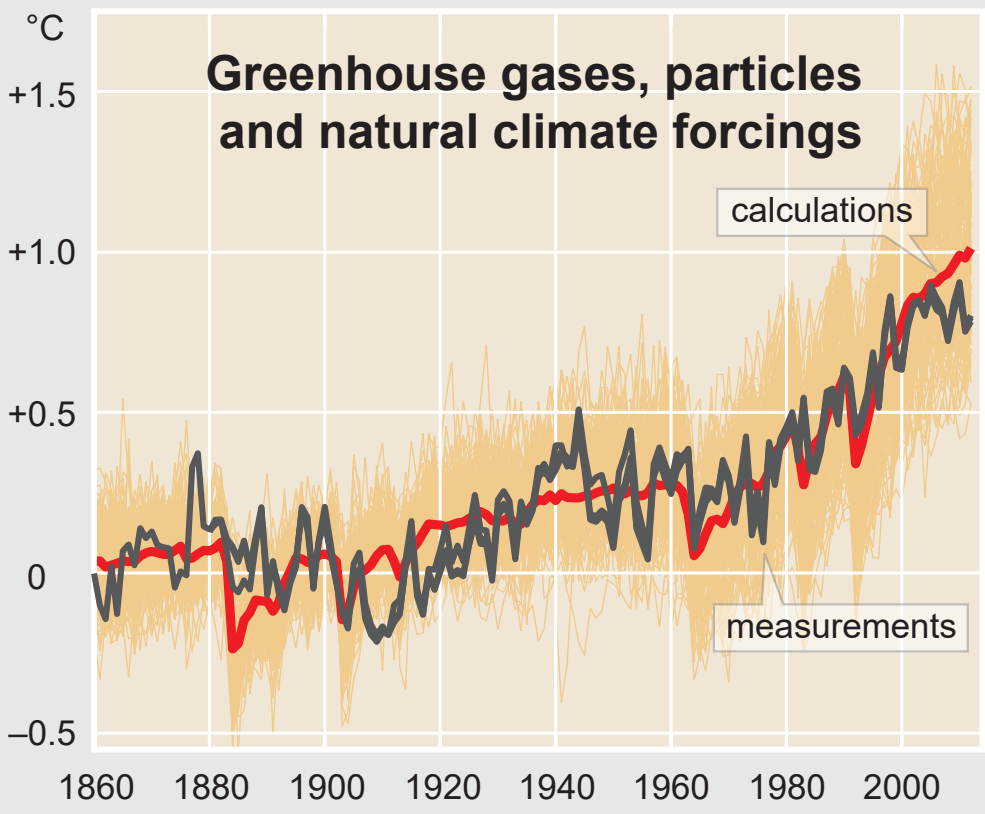
FROM RAY & DOUGLAS (2011), CHURCH & WHITE (2011), JEVREJEVA ET AL. (2014) AND NASA



FROM IPCC (2013, 2021), OUR WORLD IN DATA AND HadCRUT5 ANALYSIS, CLIMATE RESEARCH UNIT, UNIV. OF EAST ANGLIA

Measured and calculated temperature rise on Earth

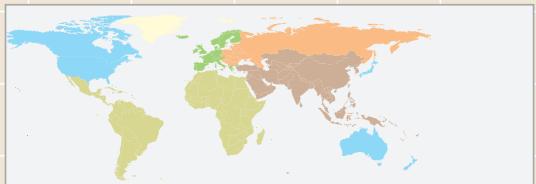




FROM IPCC (2013)

billion tonnes/year

CO_2 emissions in different parts of the world 1850–2022



Western and Southern Europe (incl. Eastern Germany)
Eastern Europe (incl. all of Russia)
Wealthy non-EU countries (U.S., Canada, Japan, Australia, New Zealand)
Africa and Latin America
Asia excl. Russia and Japan

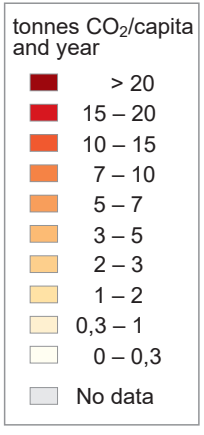
China's growing economy
Pandemic
Sharp increases in oil prices
World War II, Germany's collapse
The financial crisis
Depression
China's 'great leap'
Revolution in Russia, civil war
Early industrialisation in Western Europe
Crisis in the East after the fall of communism

20
18
16
14
12
10
8
6
4
2
0

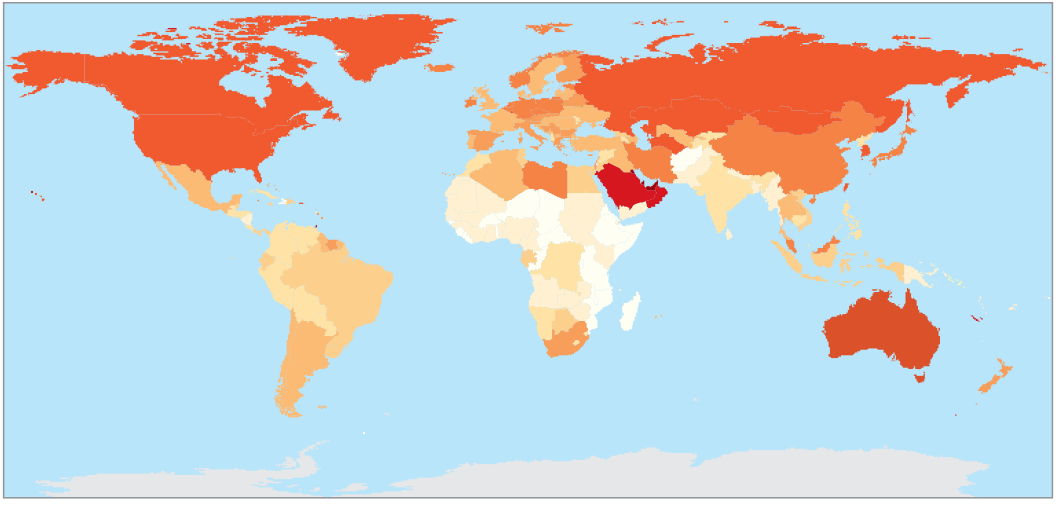
1860
1880
1900
1920
1940
1960
1980
2000
2020

FROM OUR WORLD IN DATA

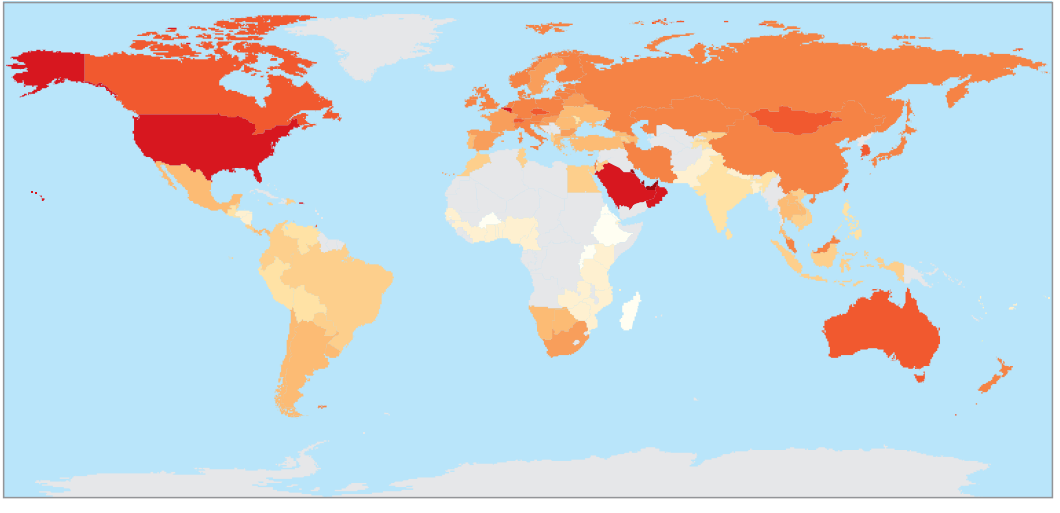
Carbon dioxide emissions per capita



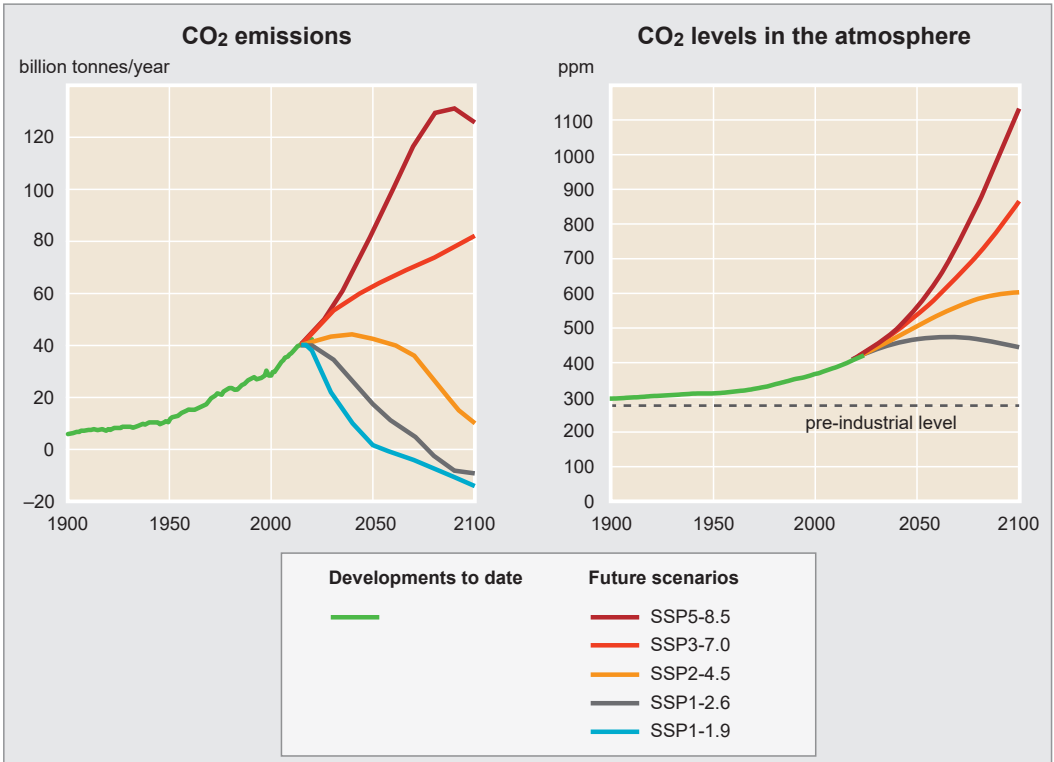
Territorial emissions, 2022



Consumption-based emissions, 2021

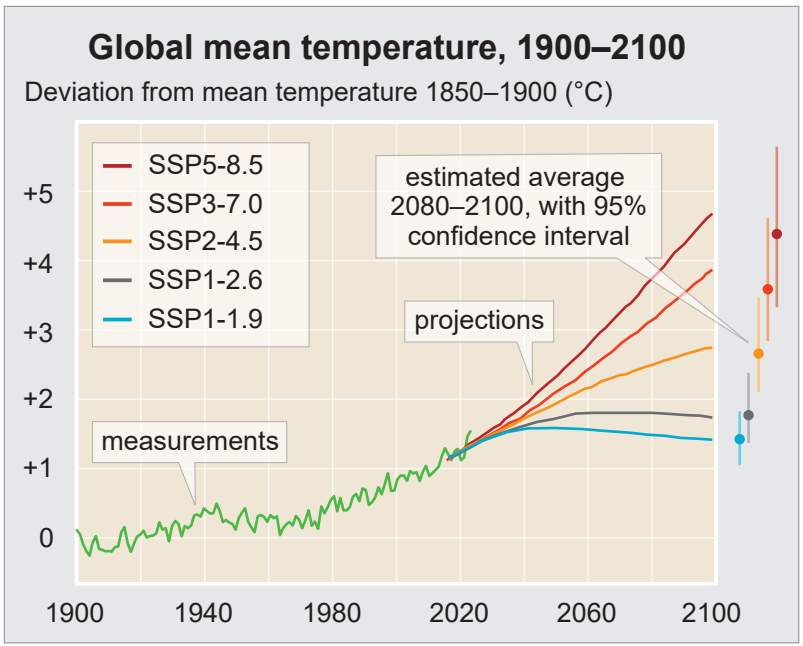


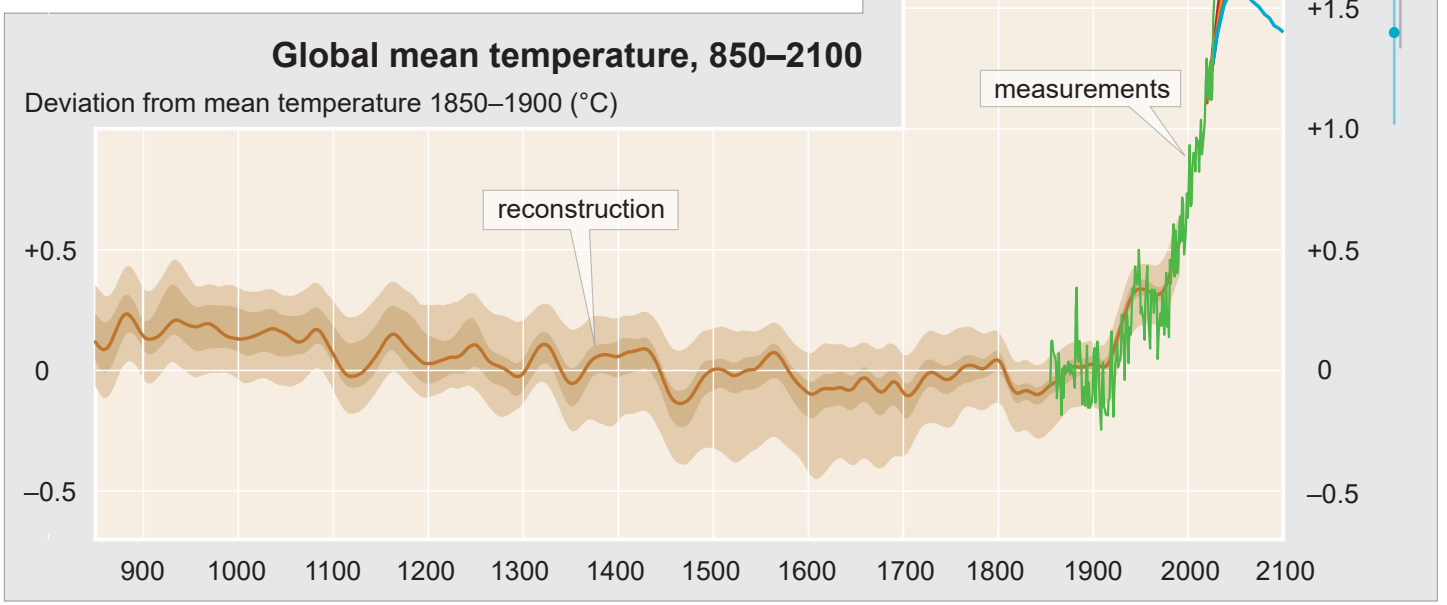
FROM OUR WORLD IN DATA

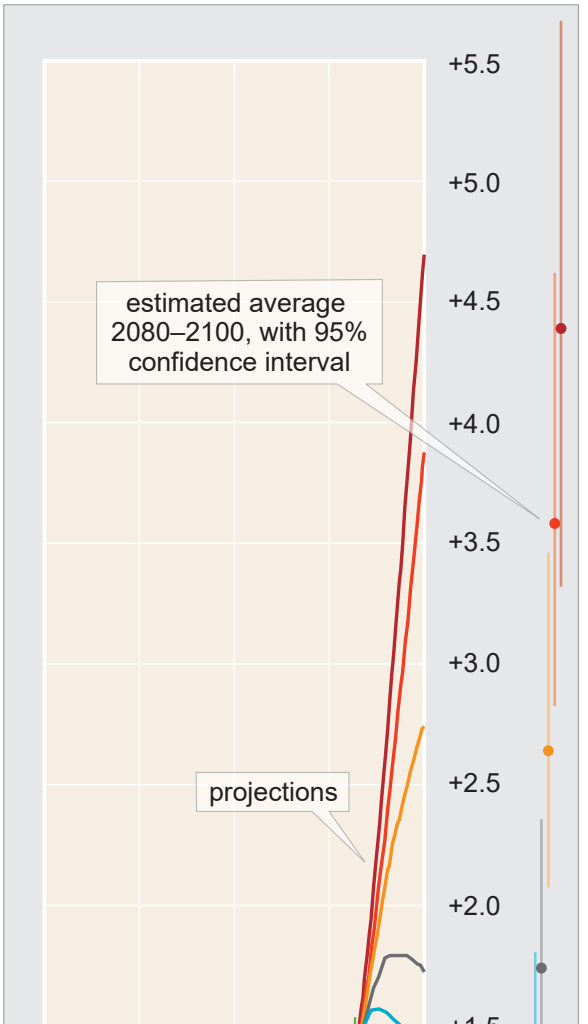


FROM IPCC (2021)

Warming until the year 2100







IPCC (2021) AND HadCRUT5 ANALYSIS, CLIMATE RESEARCH UNIT, UNIV. OF EAST ANGLIA

Possible warming in the Nordics during this century

Winter

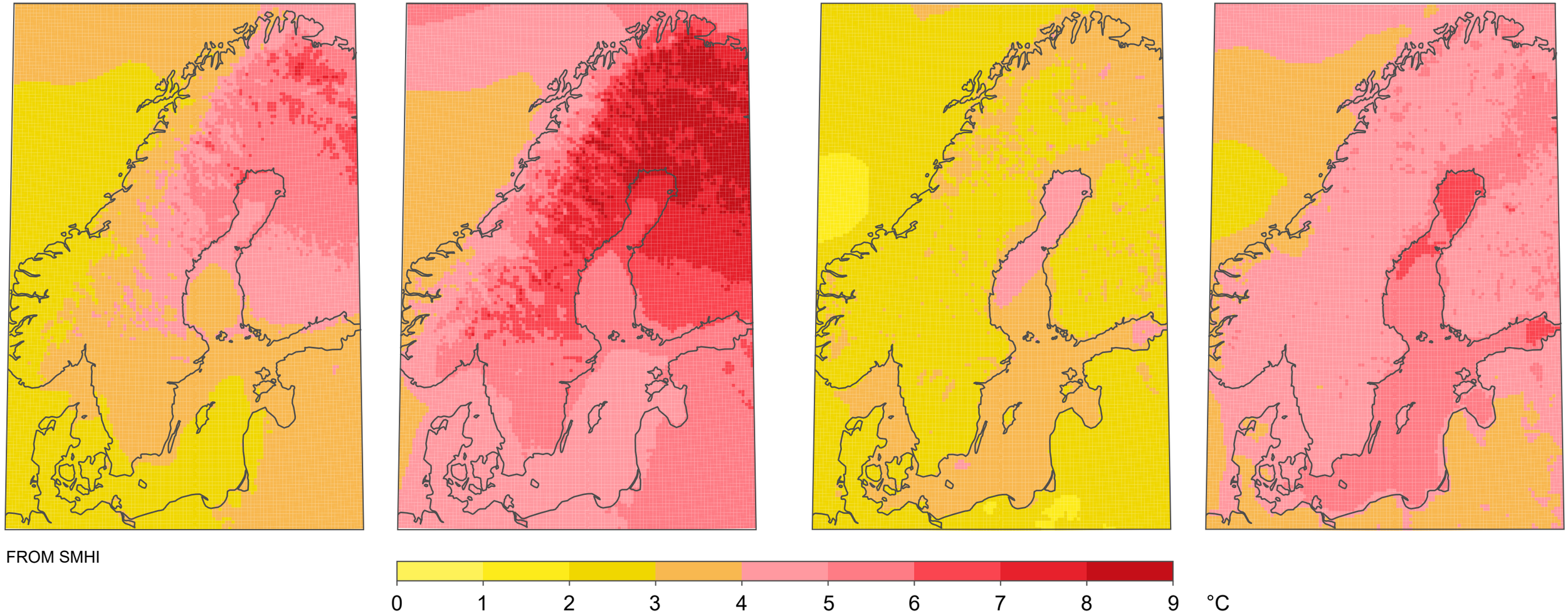
Scenario RCP4.5

Scenario RCP8.5

Summer

Scenario RCP4.5

Scenario RCP8.5



FROM SMHI

The comparison refers to the period 2071–2100 versus the period 1971–2000

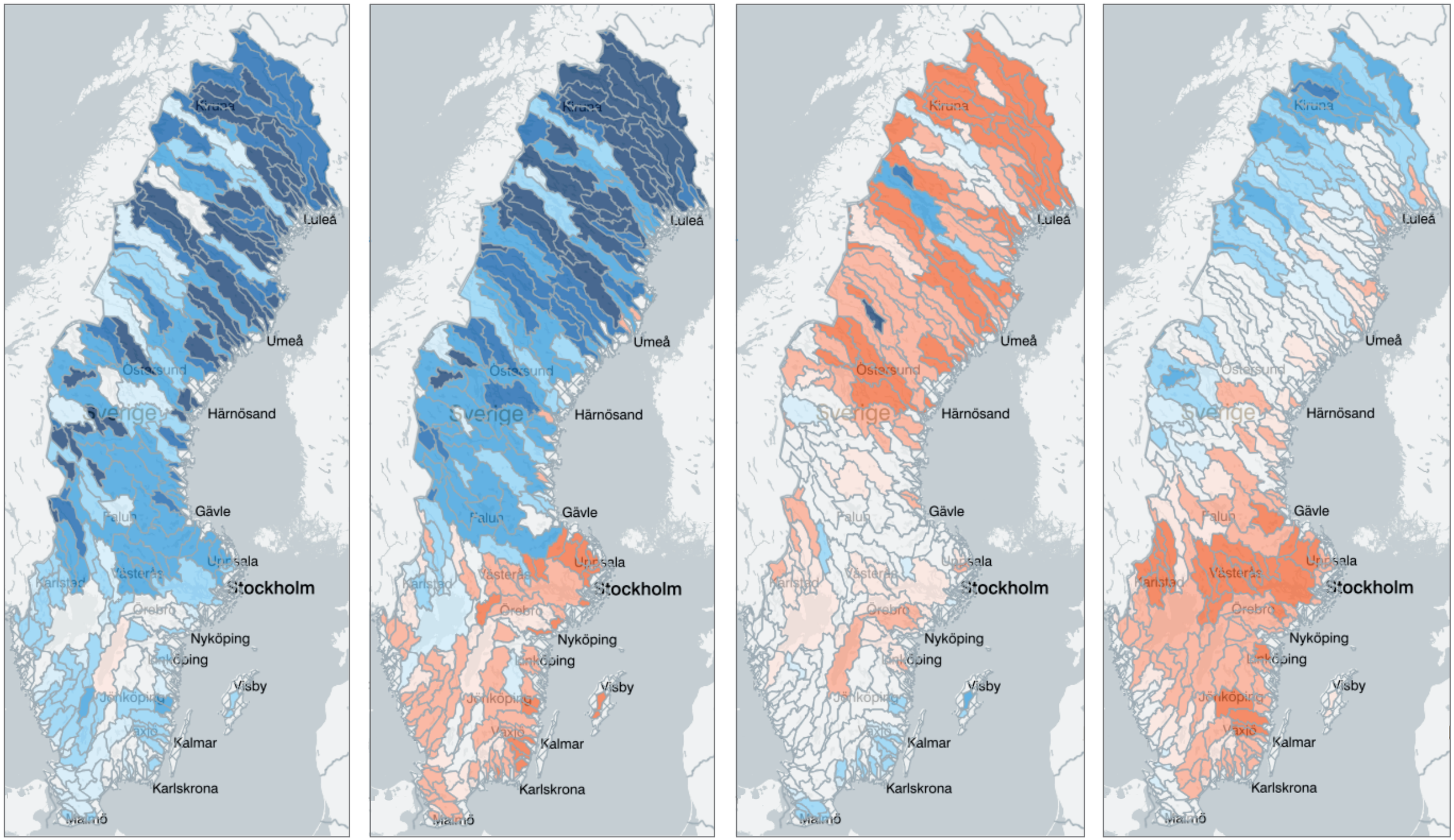
Possible changes in water availability during this century

January

April

July

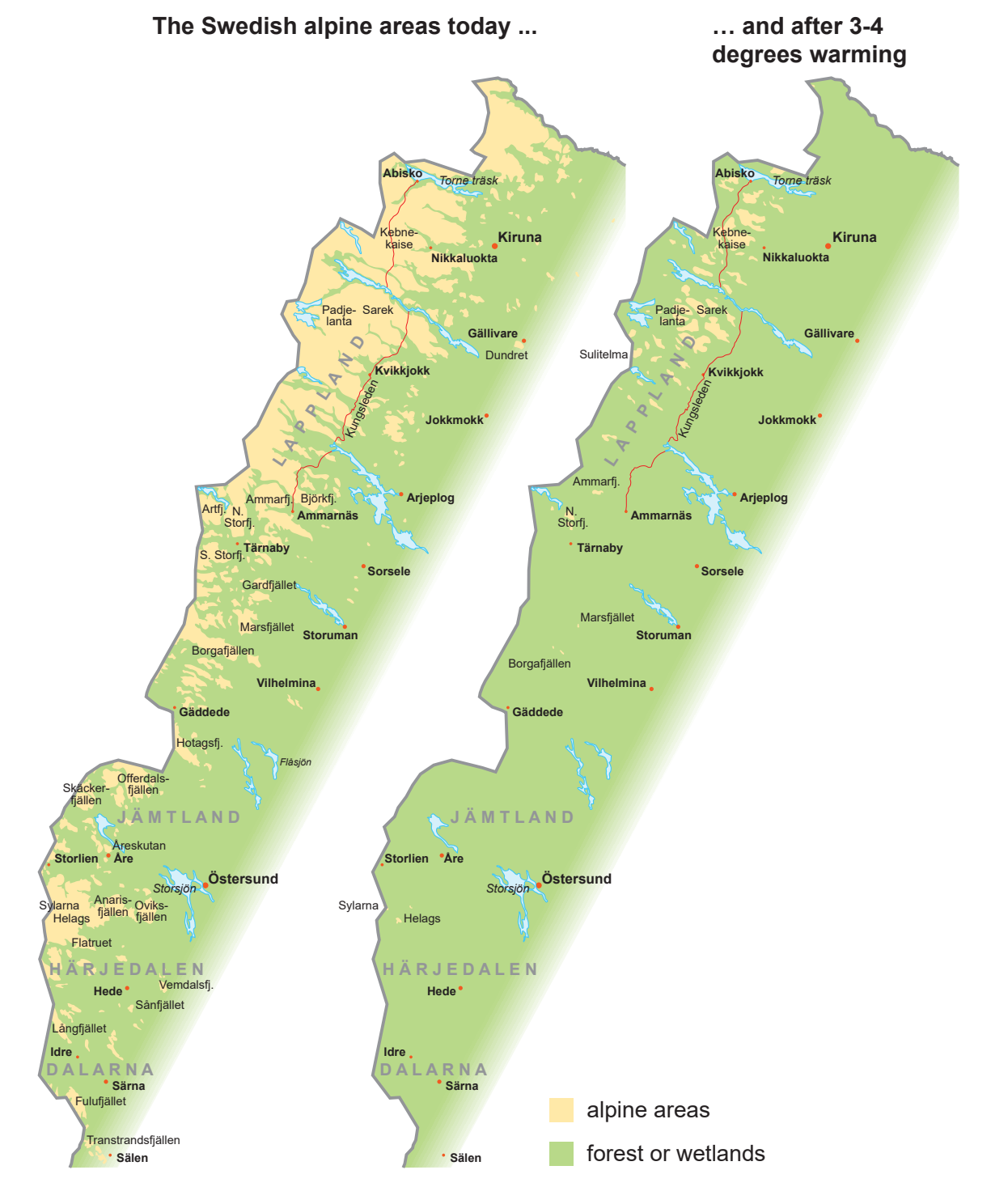
October



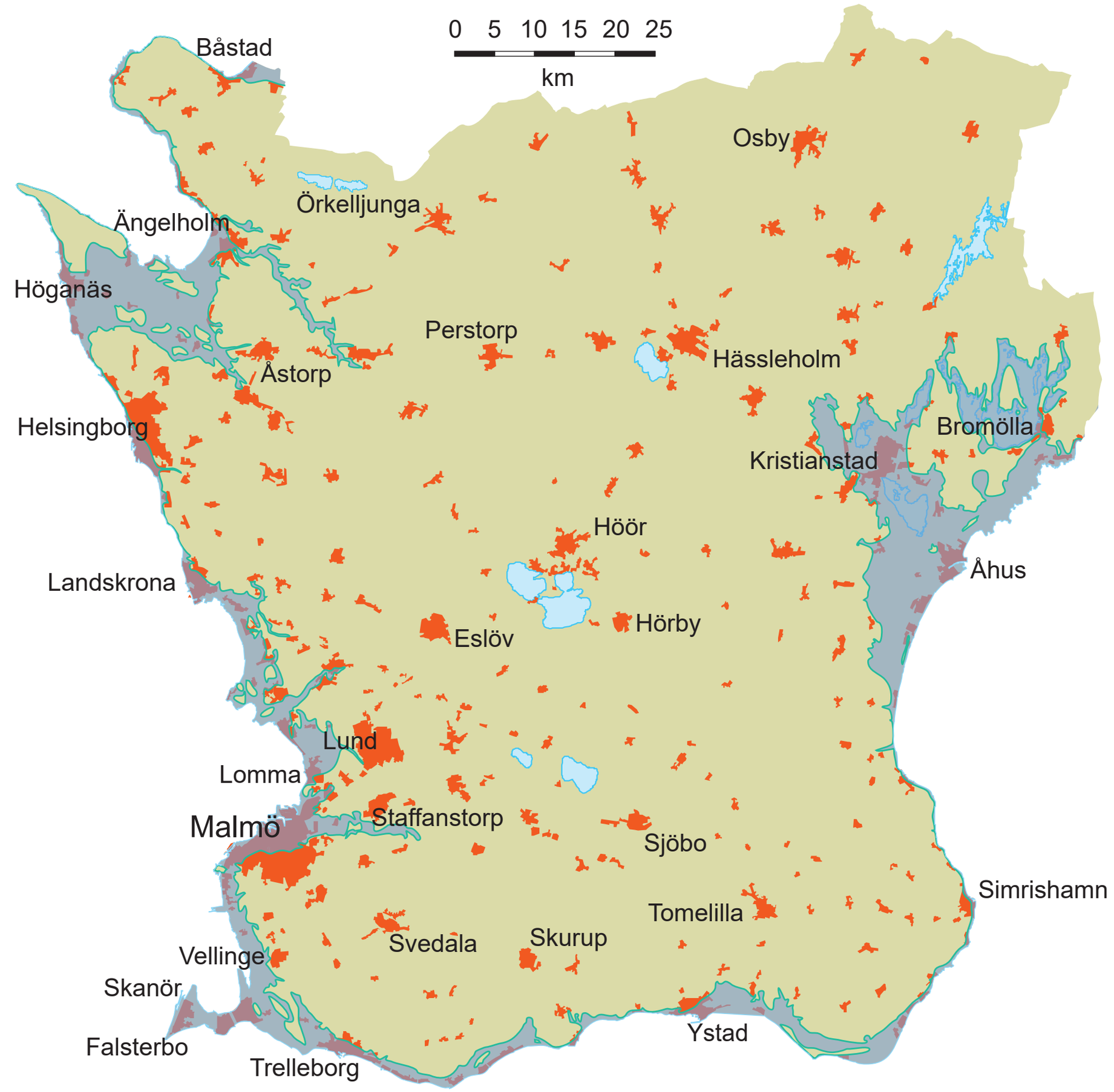
FROM SMHI

–100 –10 +10 +100%

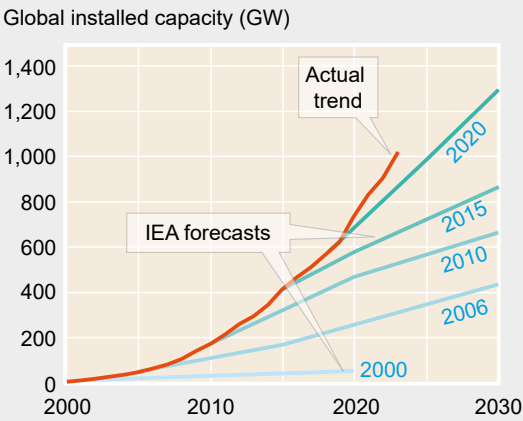
The comparison refers to the period 2071–2100 versus the period 1971–2000


The Swedish alpine areas today ...
… and after 3-4 degrees warming
Abisko
Torne träsk
Kebne-kaise
Kiruna
Nikkaluokta
Padje-lanta
Sarek
Gällivare
Dundret
Sulitelma
Kvikkjokk
Kungsleden
Jokkmokk
LAPPLAND
Ammarfj.
Björkfj.
Artfj.
N. Storfj.
Arjeplog
Ammarnäs
S. Storfj.
Tärnaby
Sorsele
Gardfjället
Marsfjället
Storuman
Borgafjällen
Vilhelmina
Gäddede
Hotagsfj.
Fläsjön
Skäcker-fjällen
Offerdals-fjällen
JÄMTLAND
Storlien
Åre
Åreskutan
Östersund
Storsjön
Sylarna
Helags
Anaris-fjällen
Oviks-fjällen
Flatruet
HÄRJEDALEN
Hede
Vemdalsfj.
Sånfjället
Långfjället
Idre
DALARNA
Särna
Fulufjället
Transtrandsfjällen
Sälen
alpine areas
forest or wetlands

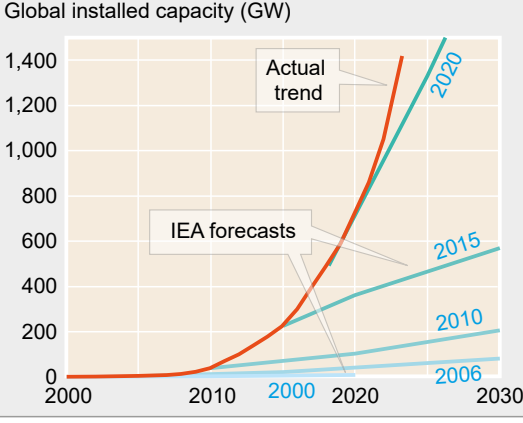
Scania after a 10-metre rise in sea level



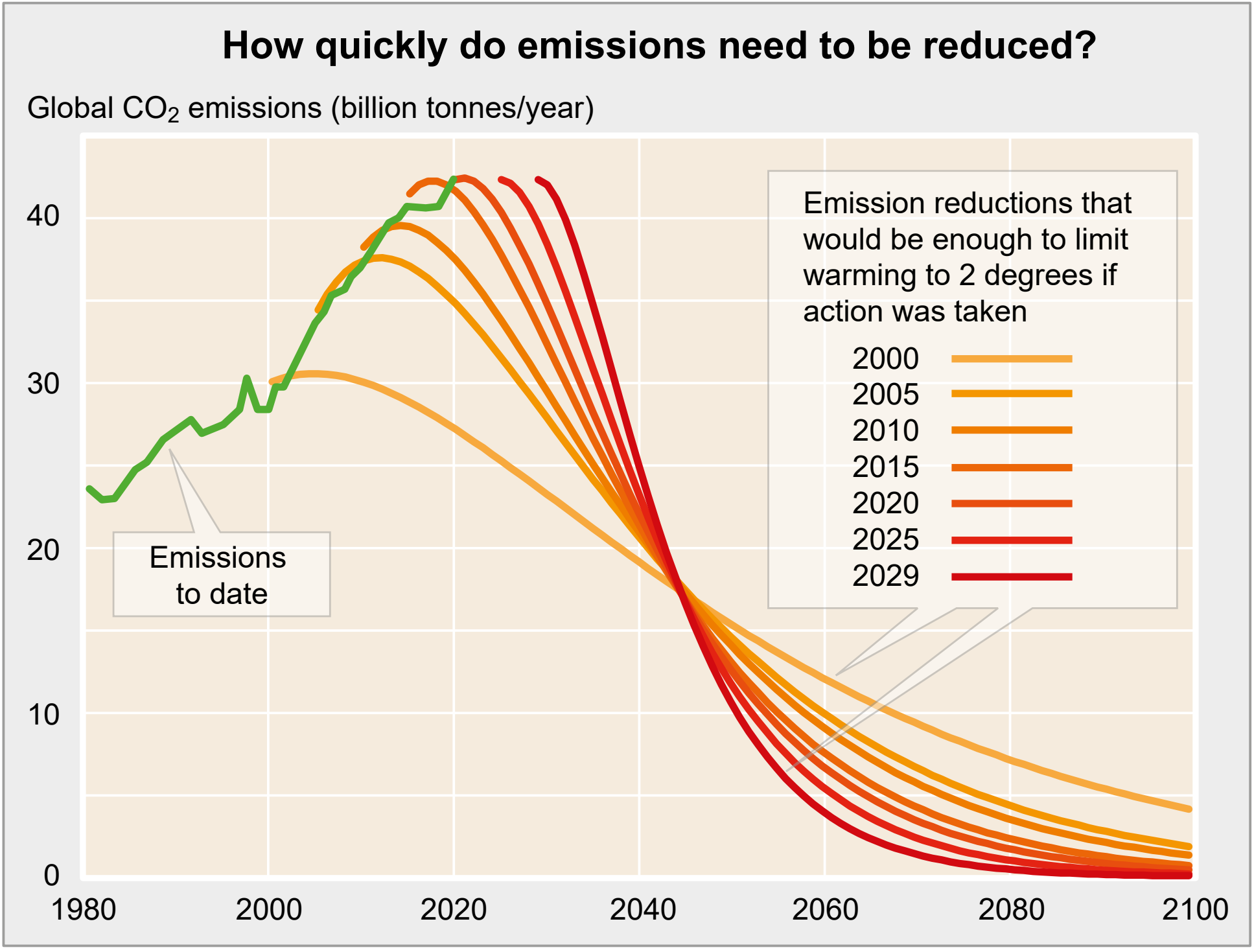
Wind power 2000–2030



Photovoltaics 2000–2030



FROM WORLD ENERGY OUTLOOK, IEA, AND INTERNATIONAL RENEWABLE ENERGY AGENCY



FROM R.M. ANDREW, IPCC (2021) AND OUR WORLD IN DATA