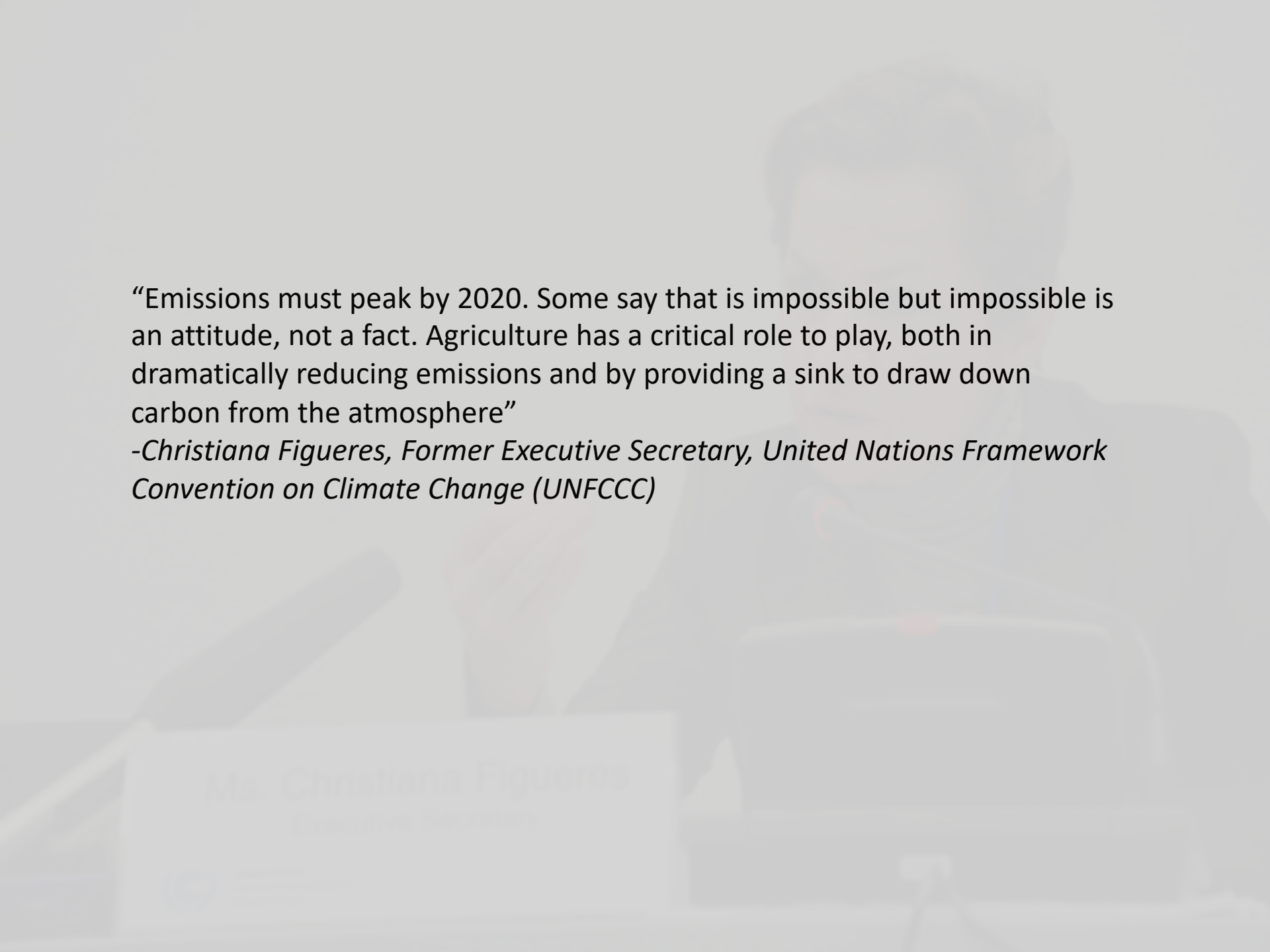


Estimated average global temperature for the last interglacial (Eemian) period (McKay et al 2011; Clark and Huybers 2009; Turney and Jones 2010), the centennially-smoothed Holocene (Marcott et al 2013) temperature as a function of time, and the 11-year mean of modern data. Vertical downward arrows indicate likely overestimates.

Mean global temperature has already risen out of the centennial Holocene range. There is widespread agreement that **2°C warming would commit the world to multi-meter sea level rise** (Levermann et al 2013; Clark et al 2016); this could unfold within 50-150 years (Hansen et al 2016).



“Emissions must peak by 2020. Some say that is impossible but impossible is an attitude, not a fact. Agriculture has a critical role to play, both in dramatically reducing emissions and by providing a sink to draw down carbon from the atmosphere”

-Christiana Figueres, Former Executive Secretary, United Nations Framework Convention on Climate Change (UNFCCC)

Can Soil Carbon Sequestration within our Fiber, Food, and Natural Dye Producing Lands Solve the Climate Crisis?

The 4 per Thousand Initiative:

French Ministry of Agriculture, Agrifood and Forestry

Increasing global Soil Organic Carbon by 0.4% annually would offset *all* global CO2 emissions

- the “*4‰ Initiative: soils for food security and climate*” aims to show that
- food security and combating climate change are complementary** and to ensure that
- agriculture provides solutions to climate change.***

<http://agriculture.gouv.fr/agriculture-et-foret/environnement-et-climat>

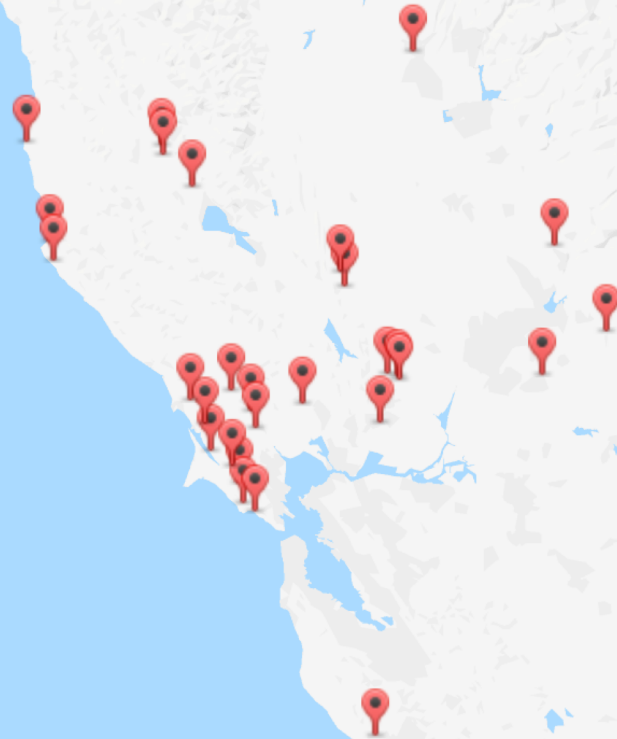
4 Per 1000 for California?

	CO2e Mg/yr (avg)	New Acres/Yr	% of 20 M acres /yr	NRCS Cost/yr	Estimated total cost/yr	Cumulative CO2e 2030	Cumulative Acreage 2030	Cumulative CO2e 2050	Cumulative Acreage 2050
NRCS- Baseline- 2006-2017	20,291	79,849	0.004	\$1,996,225	\$5,988,675	7,700,000	1,916,376	21,001,227	3,593,203
4 per 1000 (cropland/ pasture only)	152,471	600,000	3.0	\$15,000,000	\$45,000,000	58,968,000	8,400,000	146,328,000	20,400,000

Citizen Science Soil Samples from the North Central California Fibershed

Less than 5% of the sites
have 2.4- 4% Soil Organic
Carbon in the 0-15cm depth

Remaining soil samples in
the 15-45cm range hold
between .1 and 2.4% Soil
Organic Carbon



AGRICULTURE:

*“THE ART
OF MOVING CARBON
BETWEEN CARBON POOLS
TO PRODUCE
FOOD, FUEL, FIBER, AND FLORA”*

*-John Wick
Marin Carbon Project*

Measured effect of anthropogenic forcing of atmospheric C, with
hypothetical effect of anthropogenic forcing of soil organic C at global
scale

