

Communicating about Climate Intervention with Non-academic Stakeholders and the Public

Real-world experience from SilverLining

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Executive Director

JUNE 24, 2020



Target Audience: Policy and Funding Stakeholders

- Congressional and agency stakeholders
- Climate and tech philanthropists
- Science-policy community
- 90% of the political spectrum
- US focused, internationally informed



Specific Goals

- Scientific Assessments
- Policymakers' support for research
- U.S. science agency funding
- U.S. science agency programs
- Science-based governance

116TH CONGRESS
1ST SESSION

H. R. 5519

To amend the America COMPETES Act to improve measurement and assessment capabilities for understanding proposed atmospheric interventions in Earth's climate.

This Act may be cited as the “Atmospheric Climate Intervention Research Act”.

IN THE HOUSE OF REPRESENTATIVES
DECEMBER 19, 2019

Mr. MCNERNEY introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To amend the America COMPETES Act to improve measurement and assessment capabilities for understanding proposed atmospheric interventions in Earth's climate, including, as a priority, the effects of proposed interventions in the stratosphere and in cloud-aerosol processes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Atmospheric Climate Intervention Research Act”.


SEC. 2. United Nations Environment Programme

Resys and

Thirtieth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer
Quito, 5–9 November 2018
Agenda item 3 of the high-level segment
Presentations by the assessment panels on progress in their work and any key issues having emerged from their 2018 quadrennial assessments

The need to study the relationship between stratospheric ozone and proposed solar radiation management strategies

Submitted by the Federated States of Micronesia, Mali, Morocco and Nigeria

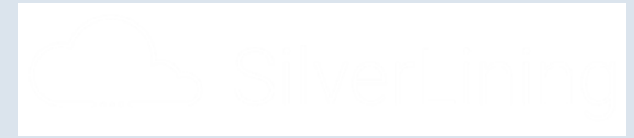


A STRATOSPHERIC EFFORT

The climate policy milestone that was buried in the 2020 budget

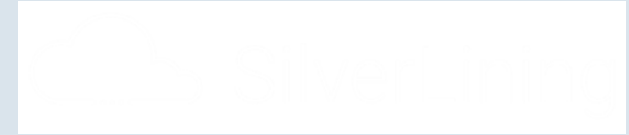
By [Emily Pontecorvo](#) on Jan 8, 2020

[f](#) [t](#) [e](#)



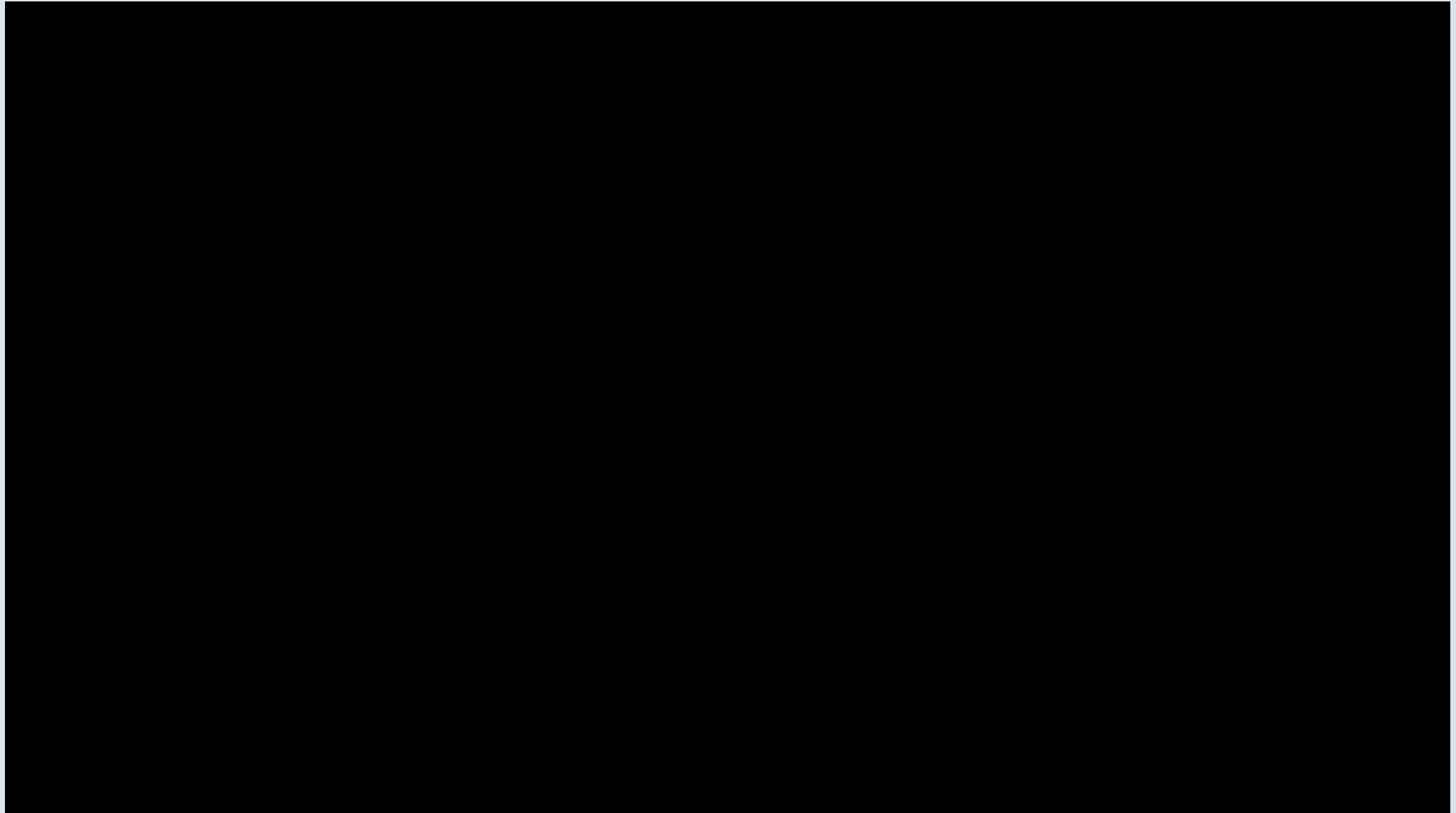
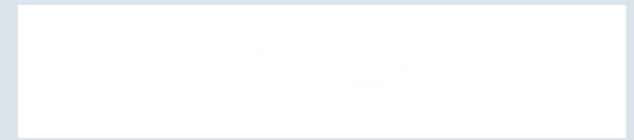
- 1. Context (framing) changes perception**
- 2. Words matter**
- 3. Strong visuals are powerful**

Framing changes perception



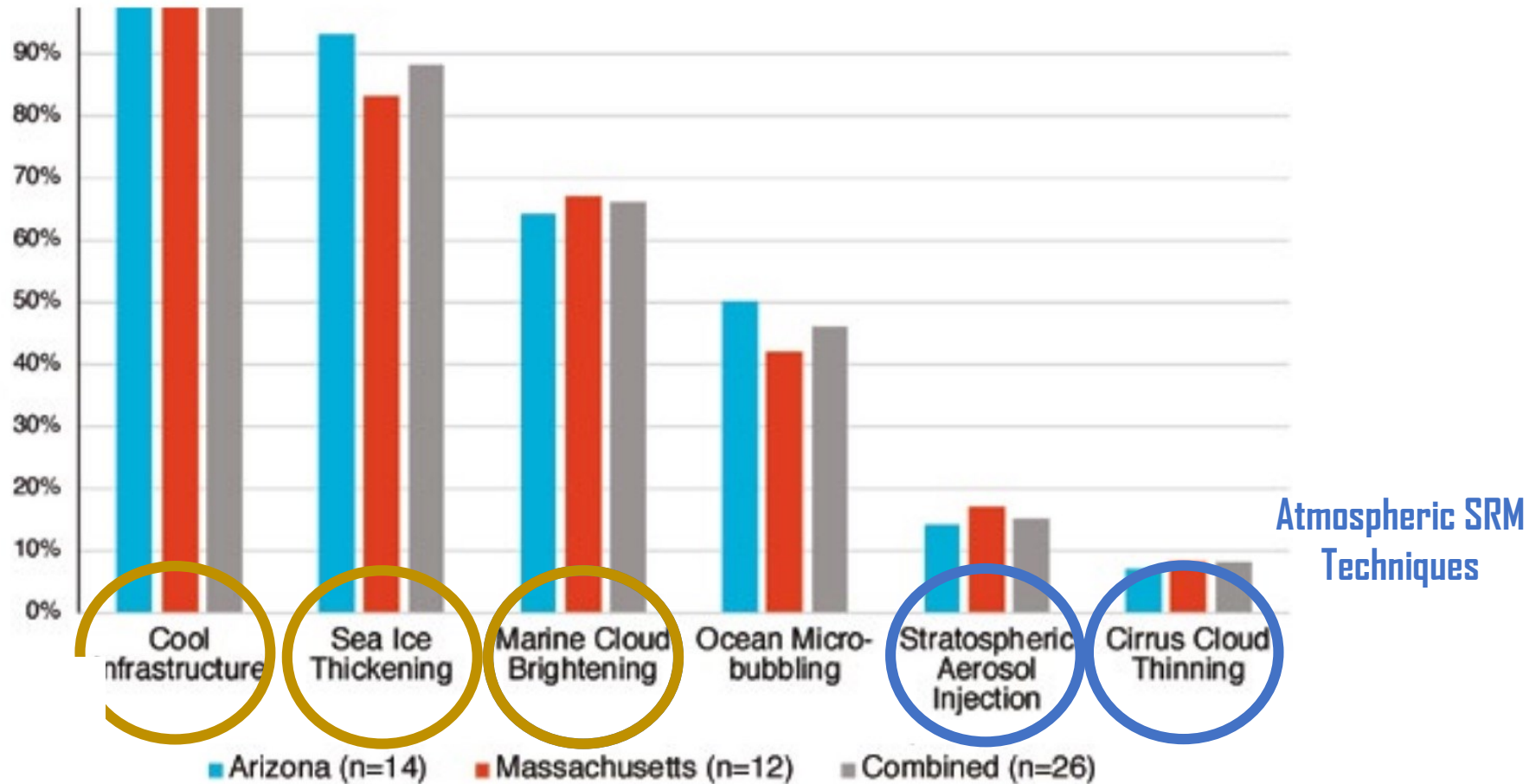
Problem	To Geoengineer or Not to Geoengineer?	Ensuring safety in the context of near-term climate risk
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Framing changes perception



Words Matter

Figure 3.1.2: Group choices for preferred SRM methods in Arizona, Massachusetts, and combined.



Intuitive terms with positive associations

Atmospheric SRM Techniques

Words Matter

Three Prongs for Prudent Climate Policy

NBER Working Paper No. w26991

56 Pages • Posted: 20 Apr 2020

[Joseph E. Aldy](#)

Harvard Kennedy School; National Bureau of Economic Research; Resources for the Future; Harvard Kennedy School (HKS)

[Richard J. Zeckhauser](#)

Harvard University - Harvard Kennedy School (HKS); National Bureau of Economic Research (NBER)

 [There are 2 versions of this paper](#)

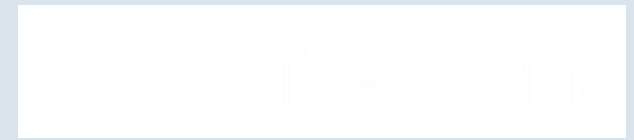
Date Written: April 2020

Abstract

For three decades, advocates for climate change policy have simultaneously emphasized the urgency of taking ambitious actions to mitigate greenhouse gas (GHG) emissions and provided false reassurances of the feasibility of doing so. The policy prescription has relied almost exclusively on a single approach: reduce emissions of carbon dioxide (CO2) and other GHGs. Since 1990, global CO2 emissions have increased 60 percent, atmospheric CO2 concentrations have raced past 400 parts per million, and temperatures increased at an accelerating rate. The one-prong strategy has not worked. After reviewing emission mitigation's poor performance and low-probability of delivering on long-term climate goals, we evaluate a three-pronged strategy for mitigating climate change risks: adding adaptation and amelioration – through solar radiation management (SRM) – to the emission mitigation approach. We identify SRM's potential, at dramatically lower cost than emission mitigation, to slow down sea level rise and warming. We address the moral hazard

We address the moral hazard reservation held by environmental advocates – that SRM would diminish emission mitigation incentives – and posit that SRM deployment might even serve as an **“awful action alert”** that galvanizes more ambitious emission mitigation.

Words Matter



Geoengineering	Climate Intervention
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Possibly the single most effective thing we have done is to use intuitive language and avoid terms with negative associations.

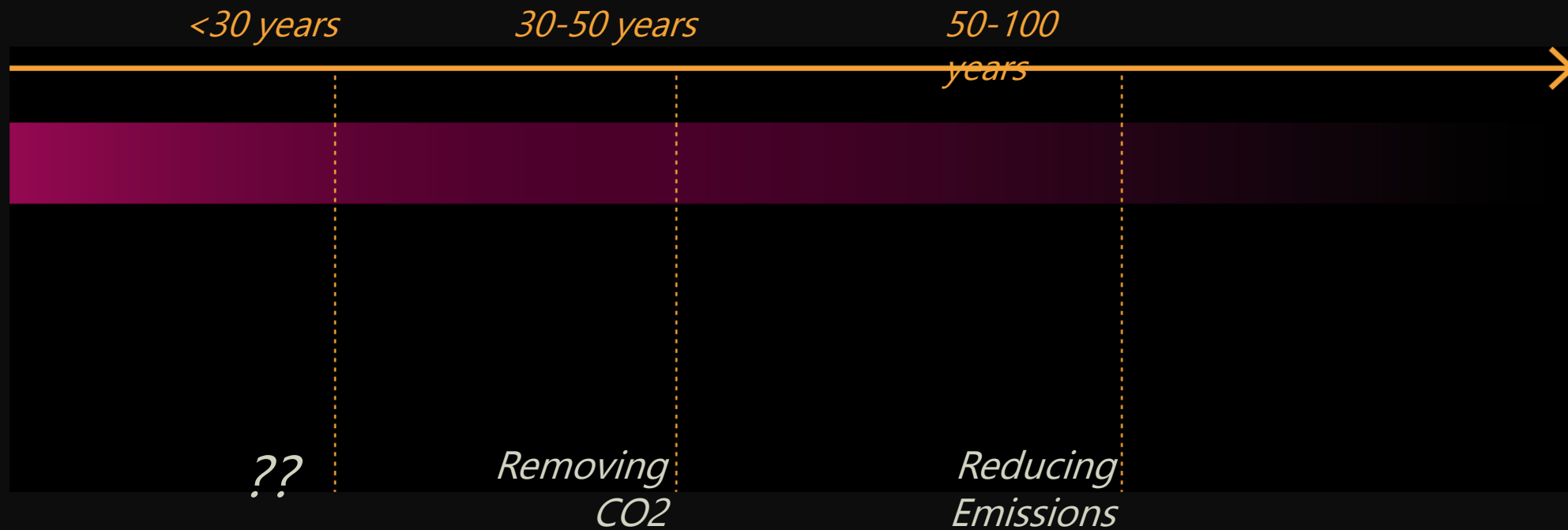
Strong visuals are powerful

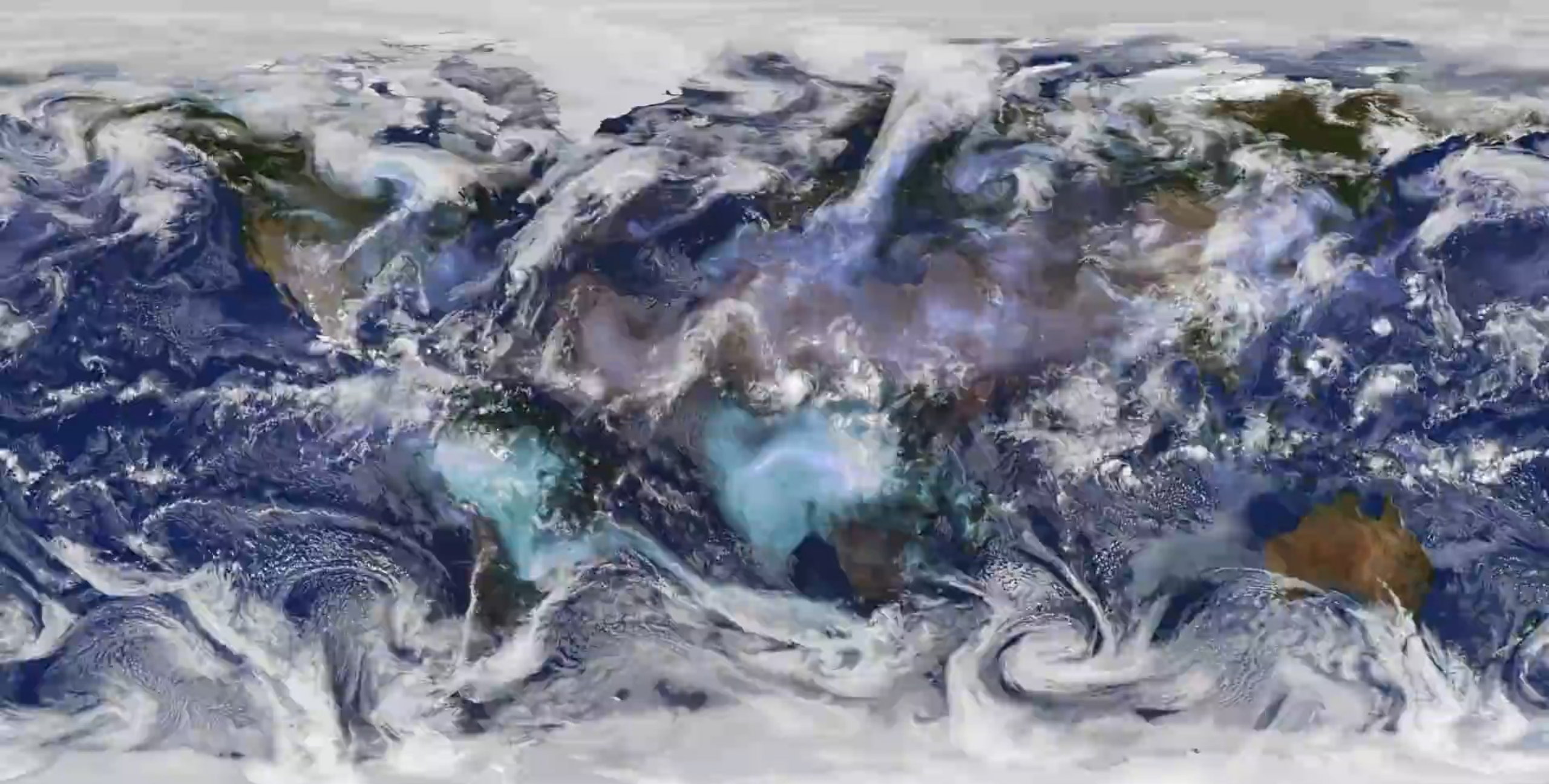
Earth's fever:
heat energy
stresses natural
systems



TIME TO REDUCE WARMING AT SCALE

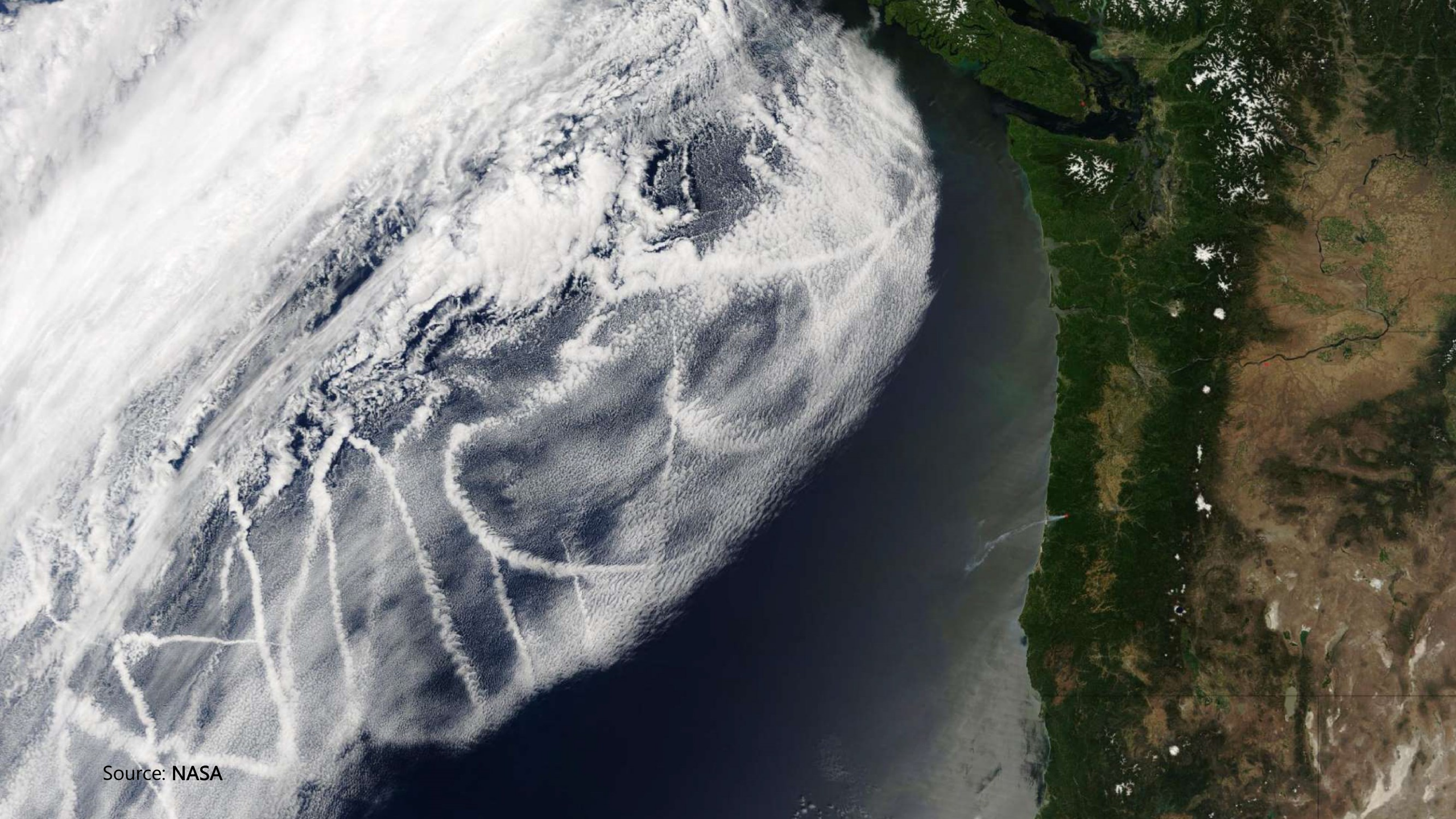
IPCC target for safety





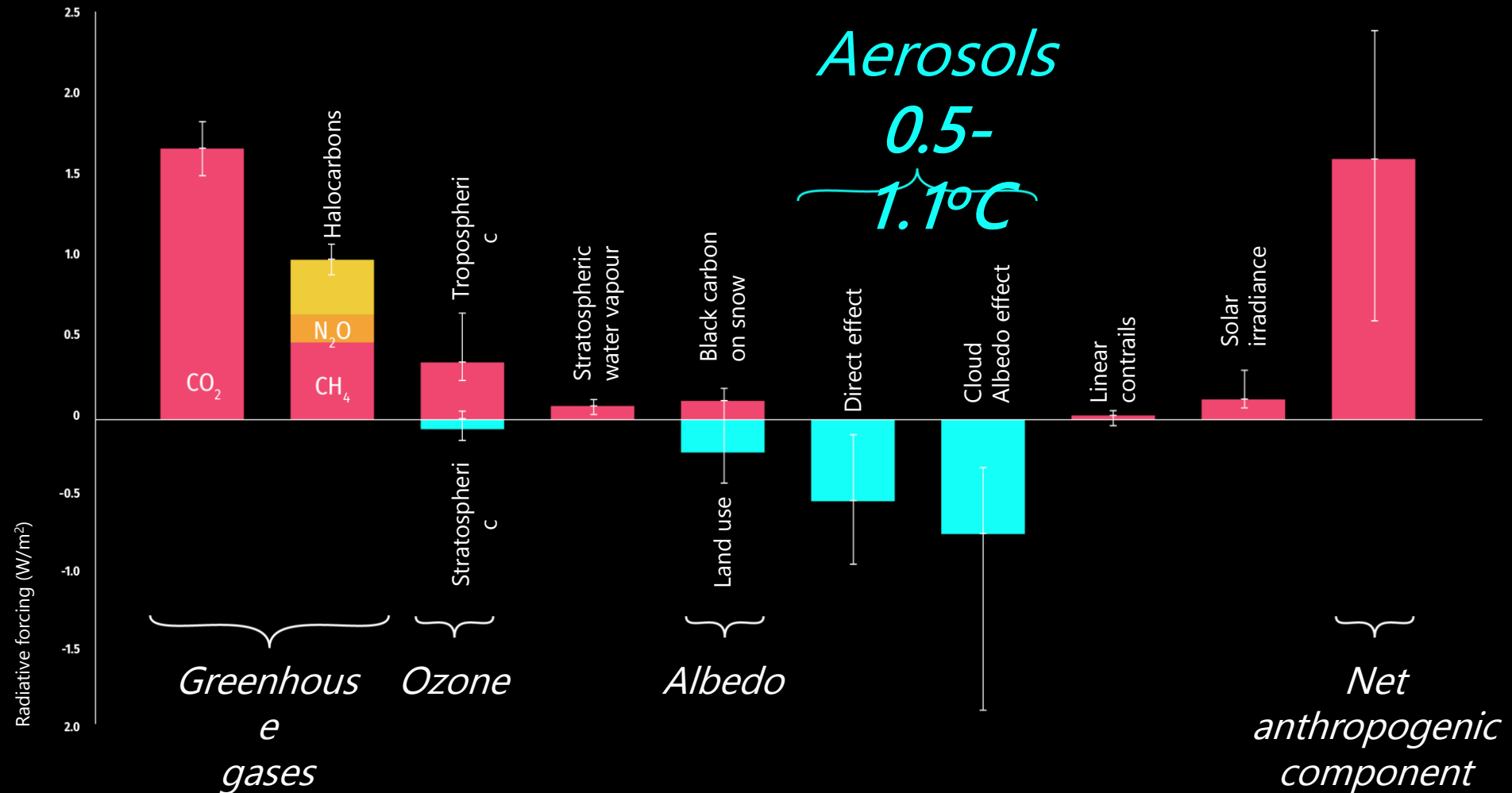
Source: NASA

2005-09-01 0000



Source: NASA

CLOUD AEROSOL EFFECTS



MARINE CLOUD BRIGHTENING

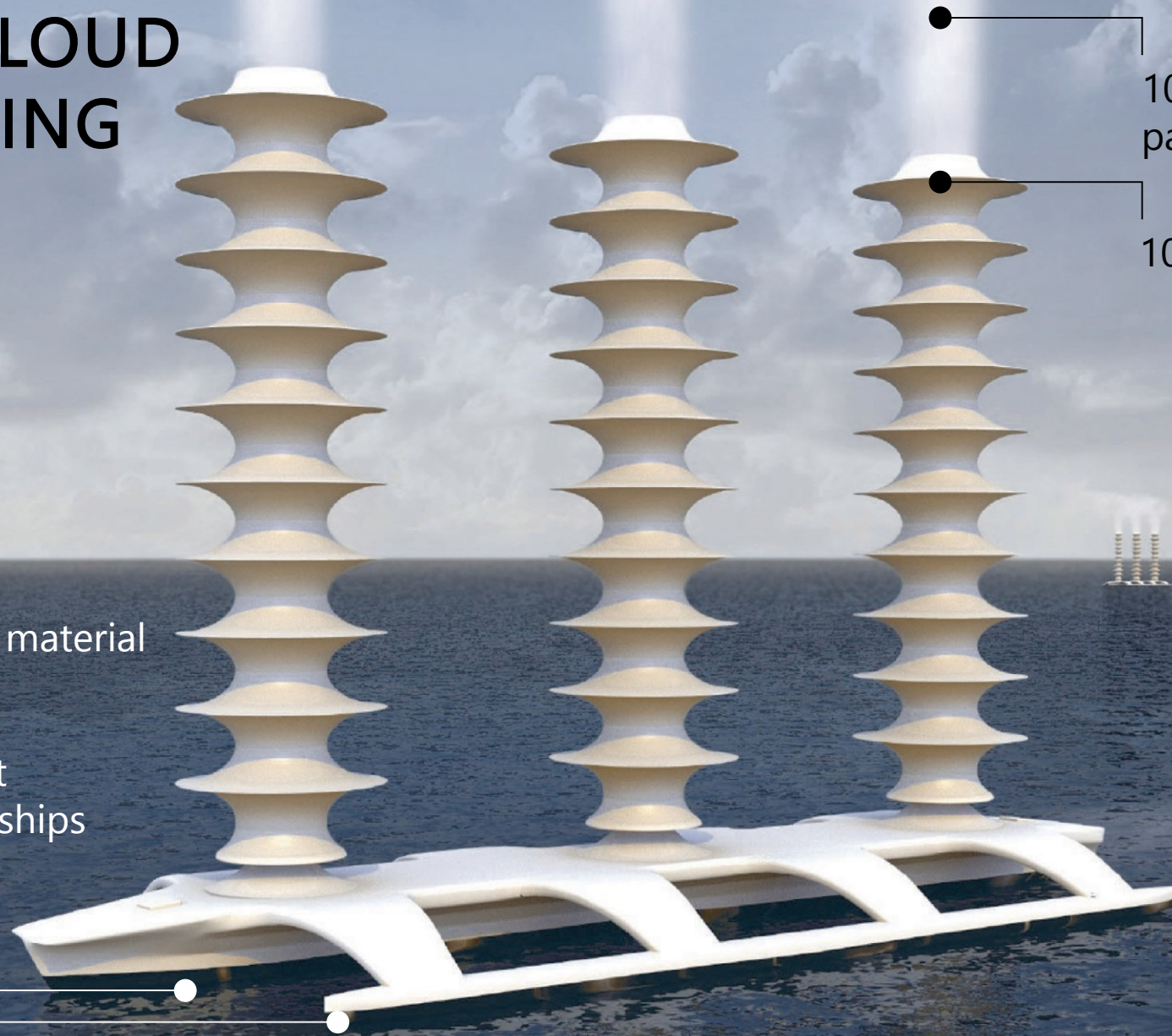
100 nanometer particles

10^{15} particles/second

Ecologically benign material

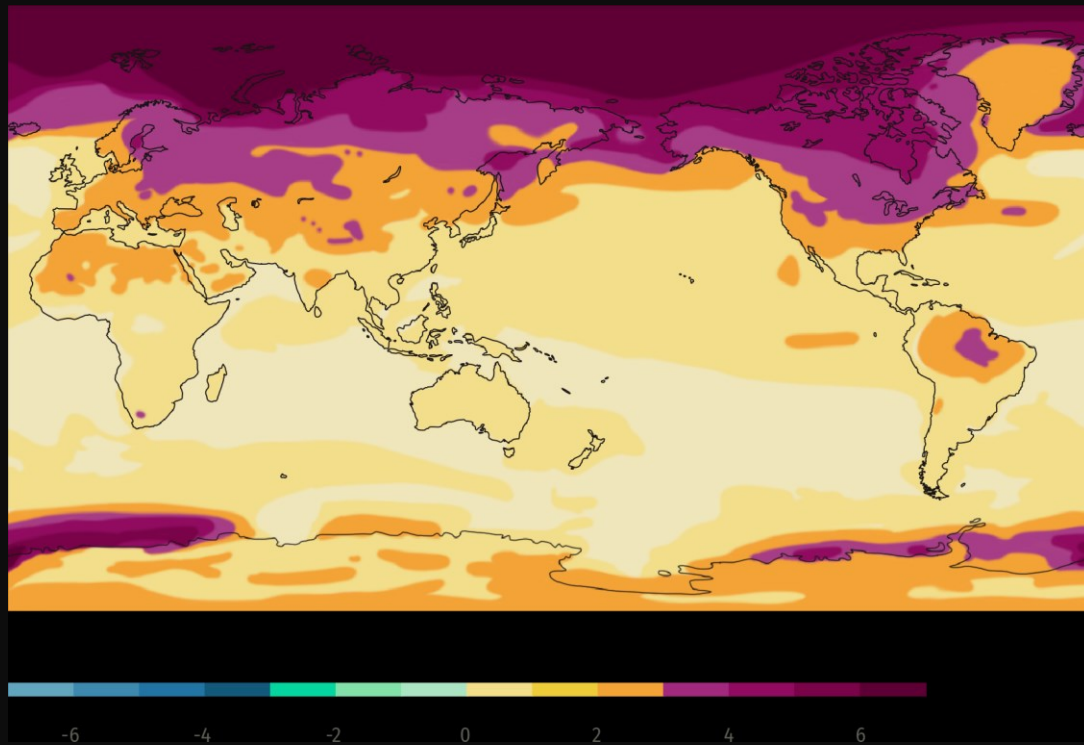
Infuse with mist delivered from ships

Localized, temporary effects

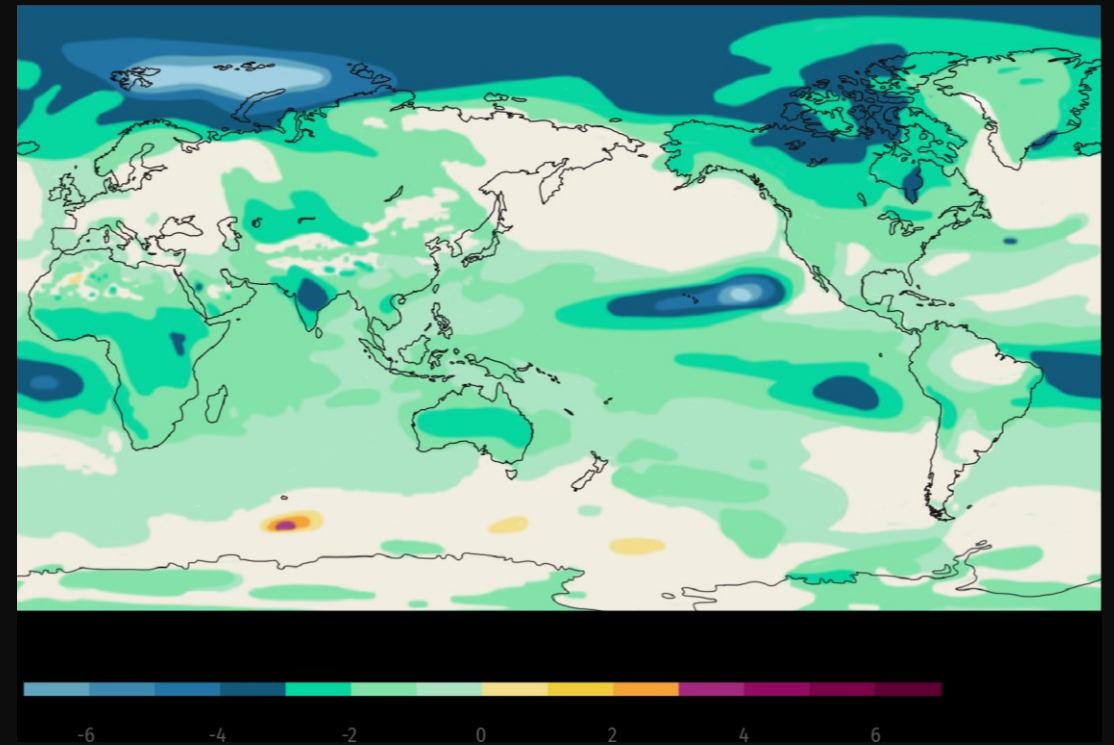


REDUCE WARMING GLOBALLY

GHG warming from doubling of CO₂



Brightening 10-20% of marine clouds





The Planet
Cooler

by more than
MOUNT PINATUBO

AEROSOLS

0.50

After the eruption

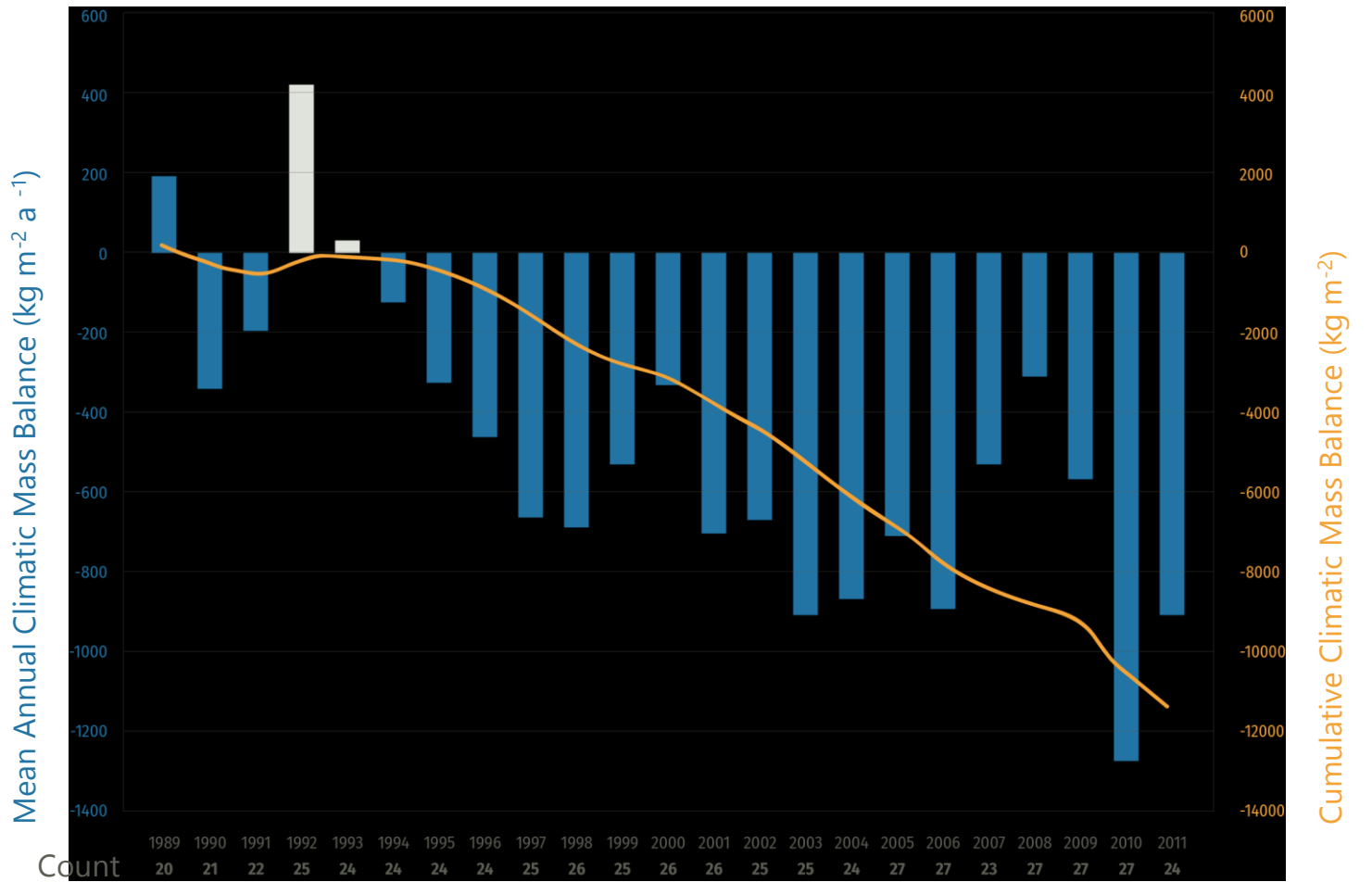
August 8, 1984

C



Source: shutterstock.com

MASS BALANCE OF ARCTIC GLACIERS AND ICE CAPS



Source: Rutgers

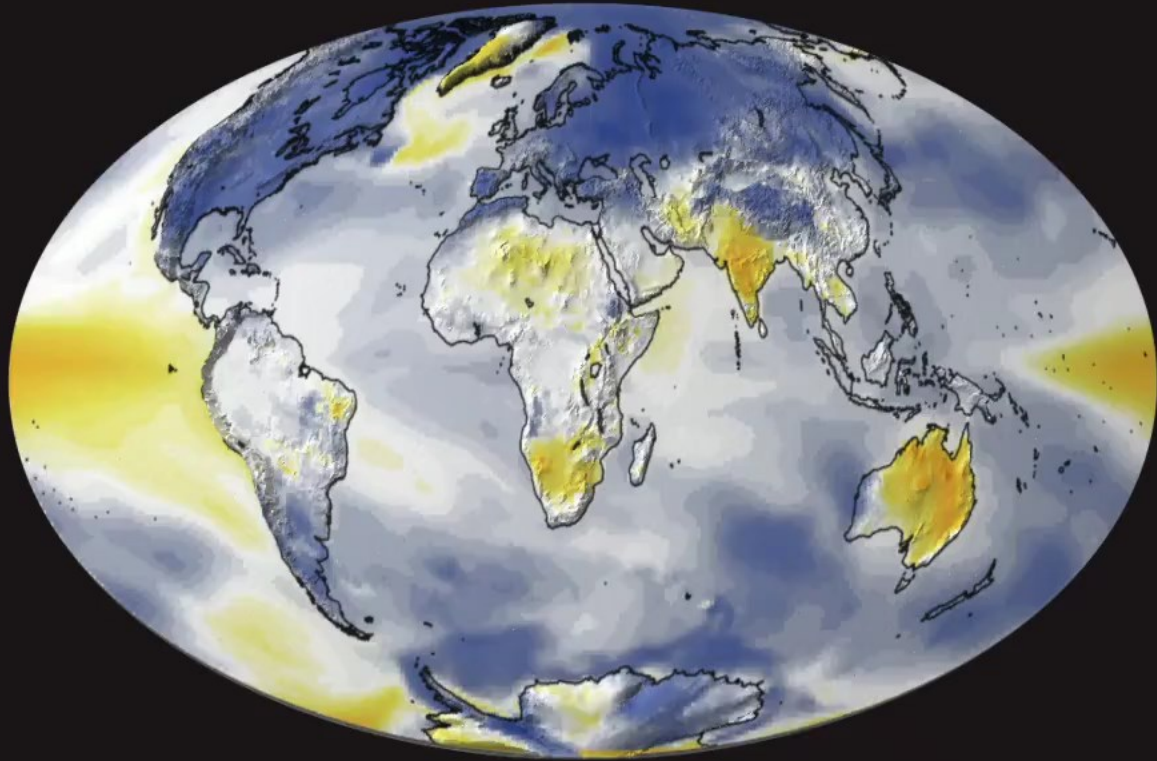
STRATOSPHERIC SUNLIGHT REFLECTION

High altitude aircraft
dispersal (14 - 25km)

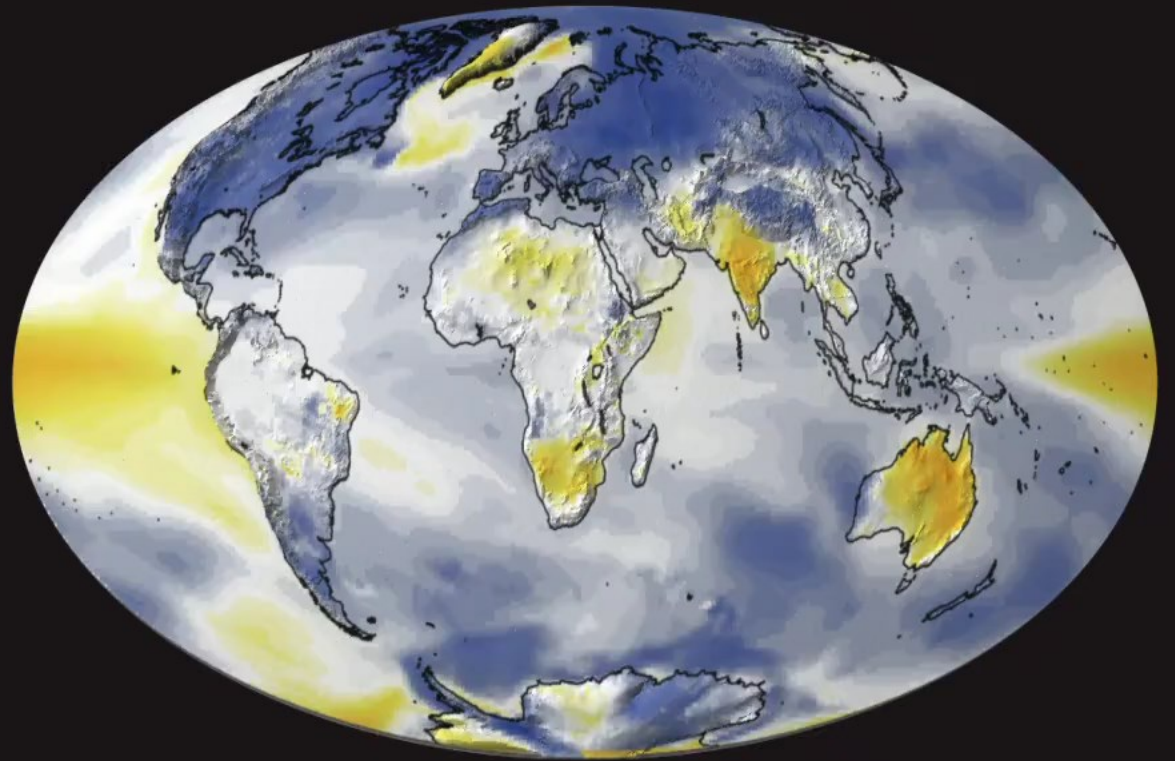
Sulfates, Calcium
Carbonate or other
material
Lifetime 1 - 3 years



CLIMATE CHANGE (RCP 8.5)



STRATOSPHERIC SUNLIGHT REFLECTION (STARTING IN 2020)



Scientific Studies are ground zero for communication

Published



Scientific Studies are ground zero for communication

Geoengineering



This article is more than 1 year old

Reflecting sun's rays would cause crops to fail, scientists warn

Research shows geoengineering method intended to combat climate change would have adverse effect on agriculture

Fiona Harvey *Environment correspondent*

Wed 8 Aug 2018 13.00 EDT



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*"[We found] potential adverse effect on agricultural production."
– lead author*



Scientific Studies are ground zero for communication

Letter | Published: 08 August 2018

Estimating global agricultural effects of geoengineering using volcanic eruptions

Jonathan Proctor , Solomon Hsiang, Jennifer Burney, Marshall Burke & Wolfram Schlenker

Nature **560**, 480–483(2018) | [Cite this article](#)

4900 Accesses | **19** Citations | **747** Altmetric | [Metrics](#)

“This suggests that solar radiation management—if deployed using stratospheric sulfate aerosols similar to those emitted by the volcanic eruptions it seeks to mimic—would, on net, attenuate little of the global agricultural damage from climate change. “

- Is it a study of SCl or something else?
- Do the tools and data support ANY broad claims?

Accurate and clear communication of your work is the foundation for communication with all stakeholders.

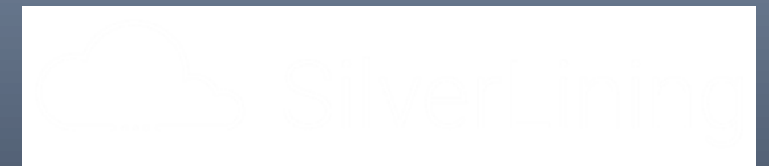
Real-world experience from SilverLining

Kelly Wanser
Executive Director

JUNE 24, 2020



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