

CLIMATE CHANGE, SUSTAINABILITY, AND YOUR BUSINESS

SOME THOUGHTS ON A COMING CRISIS

22 August 2011

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Chairman, Australian Green Infrastructure Council

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Past Chairman Australian College of Environmental Engineers

David A Hood & Associates Pty Ltd





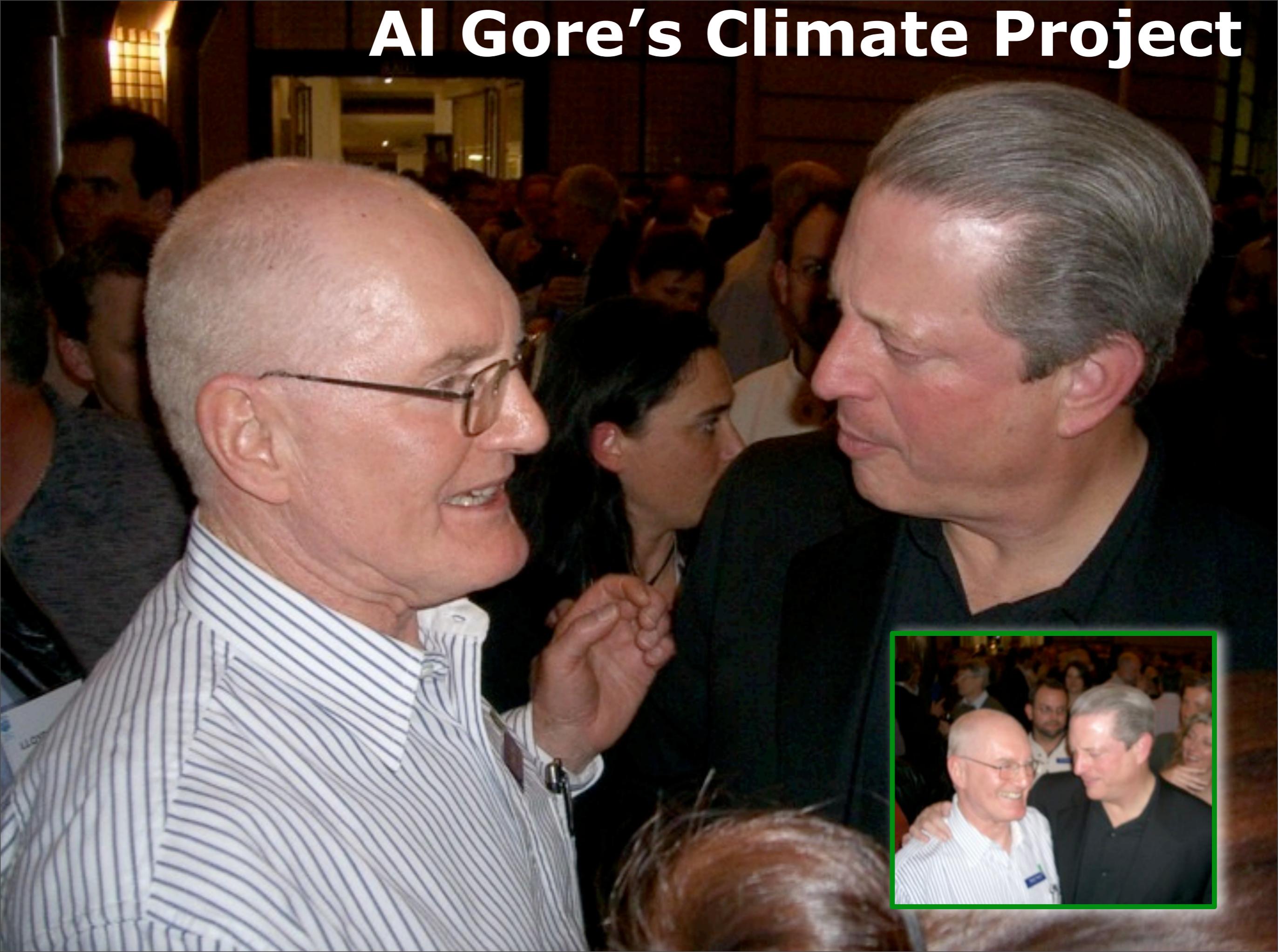


**“Is this CO₂
thing really
serious
Grandpa?”**

Cameron Hood
(age: ONE week)



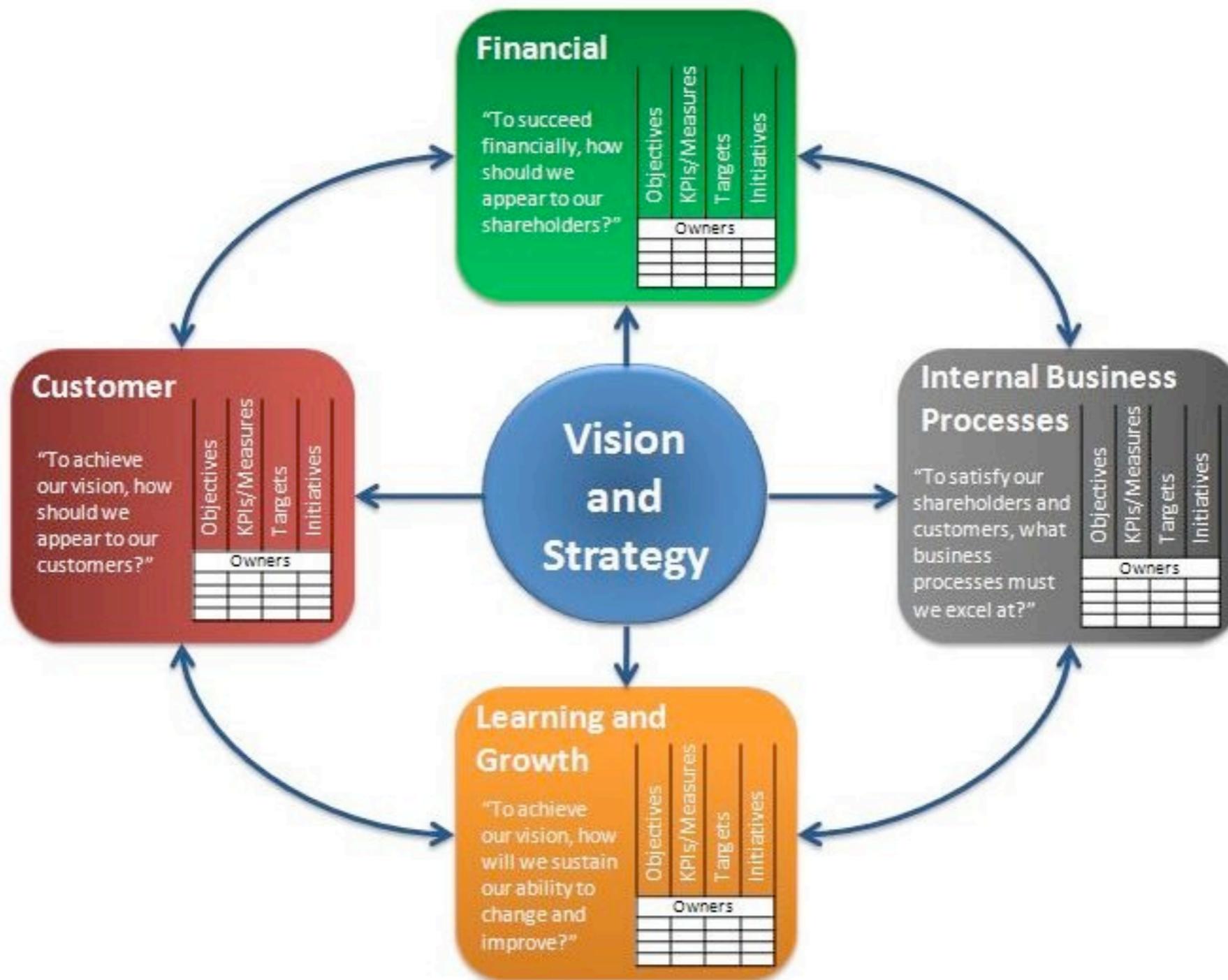
Al Gore's Climate Project



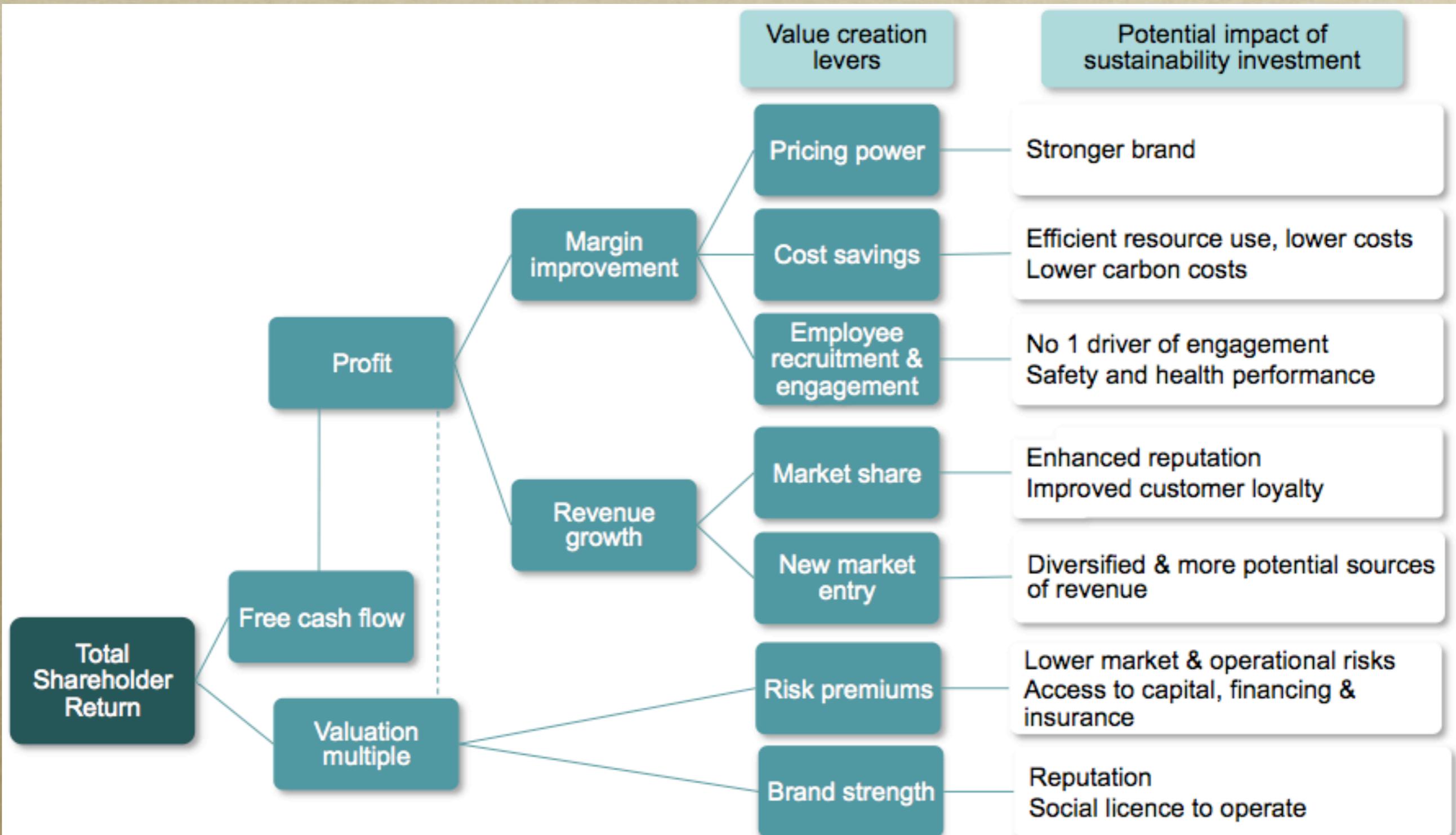


Source: NASA

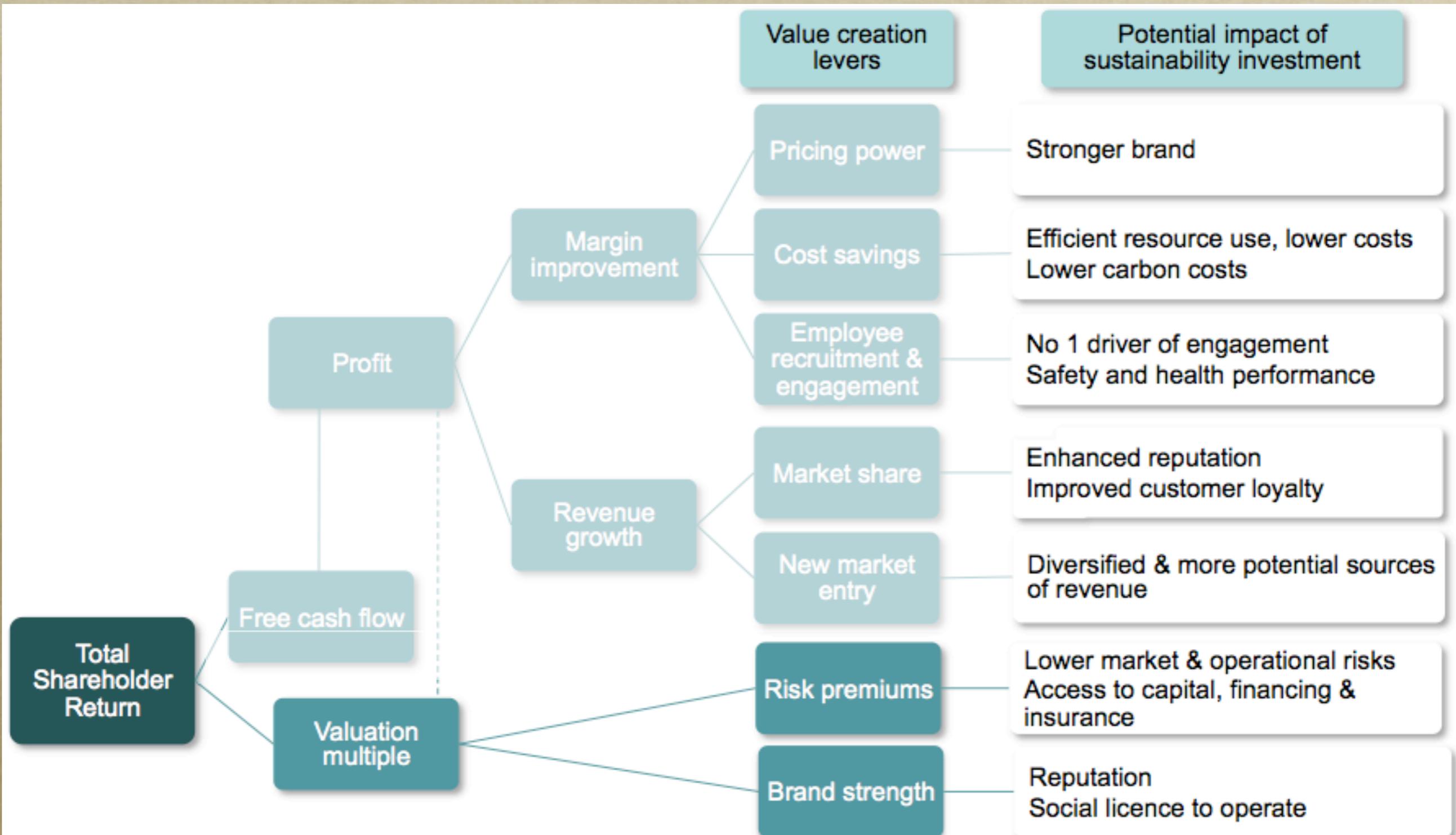
The FOUR PERSPECTIVES of Balancing your Scorecard:



WHAT CREATES SHAREHOLDER VALUE?



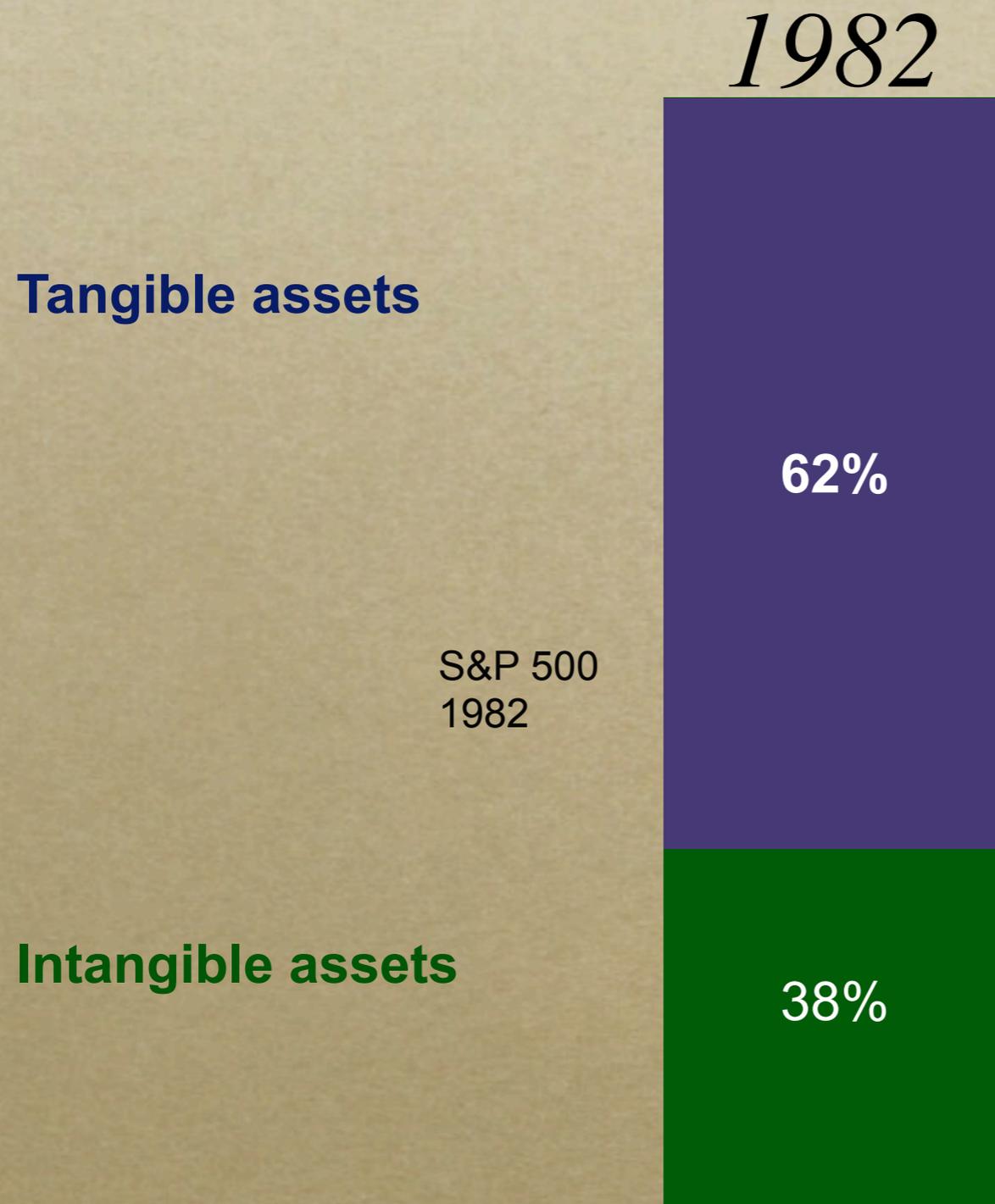
WHAT CREATES SHAREHOLDER VALUE?



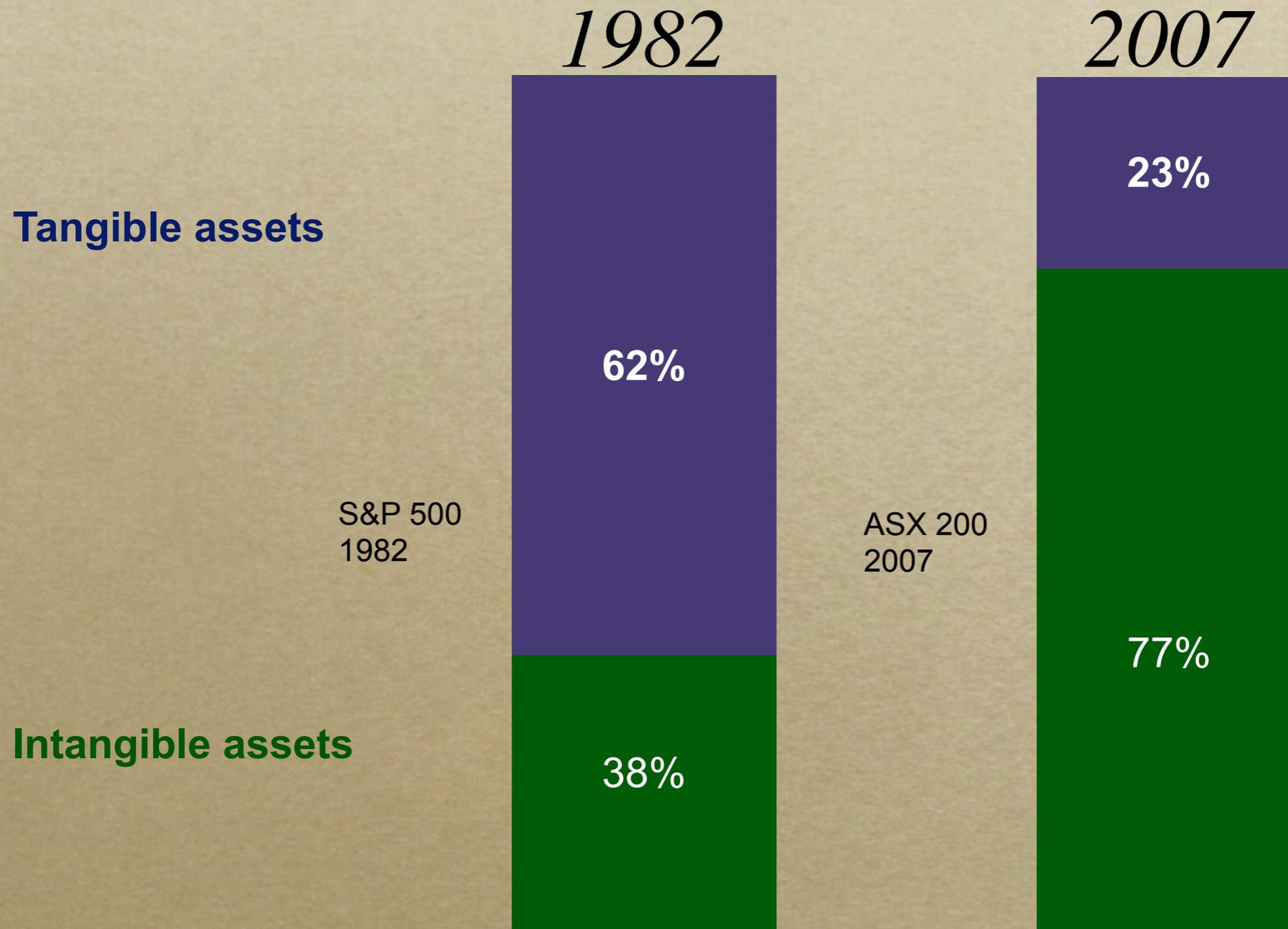
HOW ARE SHAREHOLDERS VALUING YOUR COMPANY?

1982

HOW ARE SHAREHOLDERS VALUING YOUR COMPANY?



HOW ARE SHAREHOLDERS VALUING YOUR COMPANY?



We need *Net Positive Thinking*



We need *Net Positive Thinking*



We need *Net Positive Thinking*



Think Sustainability Outcomes (not just “Sustainable Results”)



Cost Benefit Analysis & Benefit/Cost Ratio

$$\frac{\textit{Benefit}}{\textit{Cost}} > 1$$

- *Costs can be easily attributed to a given scope;*
- *Externalities are excluded;*
- *Benefits are difficult to quantify;*
- *Costs occur now; benefits occur later (and later);*
- *NPV is usually used to bring all costs to today's value;*
- *Thus, future benefits have less value than today's costs*

What is GDP?

GDP is the summation of the \$ value of all stuff and services measured at final point of use within a closed boundary..

PROBLEM 1:

GDP counts remedial and defensive expenditures (such as the costs of security, police, pollution clean up, crash repairs, emergency treatment, health costs, etc.) as positive contributions.

What is GDP?

GDP is the summation of the \$ value of all stuff and services measured at final point of use within a closed boundary..

PROBLEM 2:

The GDP DOES NOT measure or express changes in a nation's:

- *Quality of life (e.g. happiness)*
- *Unpaid labor (e.g. volunteering)*
- *Intangible valuables (e.g. feeling secure, being well)*
- *Real Savings (e.g. efficiency)*
- *Standard of Living (e.g. betterment)*
- *Uneven inflationary price changes (e.g. a housing bubble)*

Crude Measures

Night lights as a measure of GDP



Crude Measures

Night lights as a measure of GDP



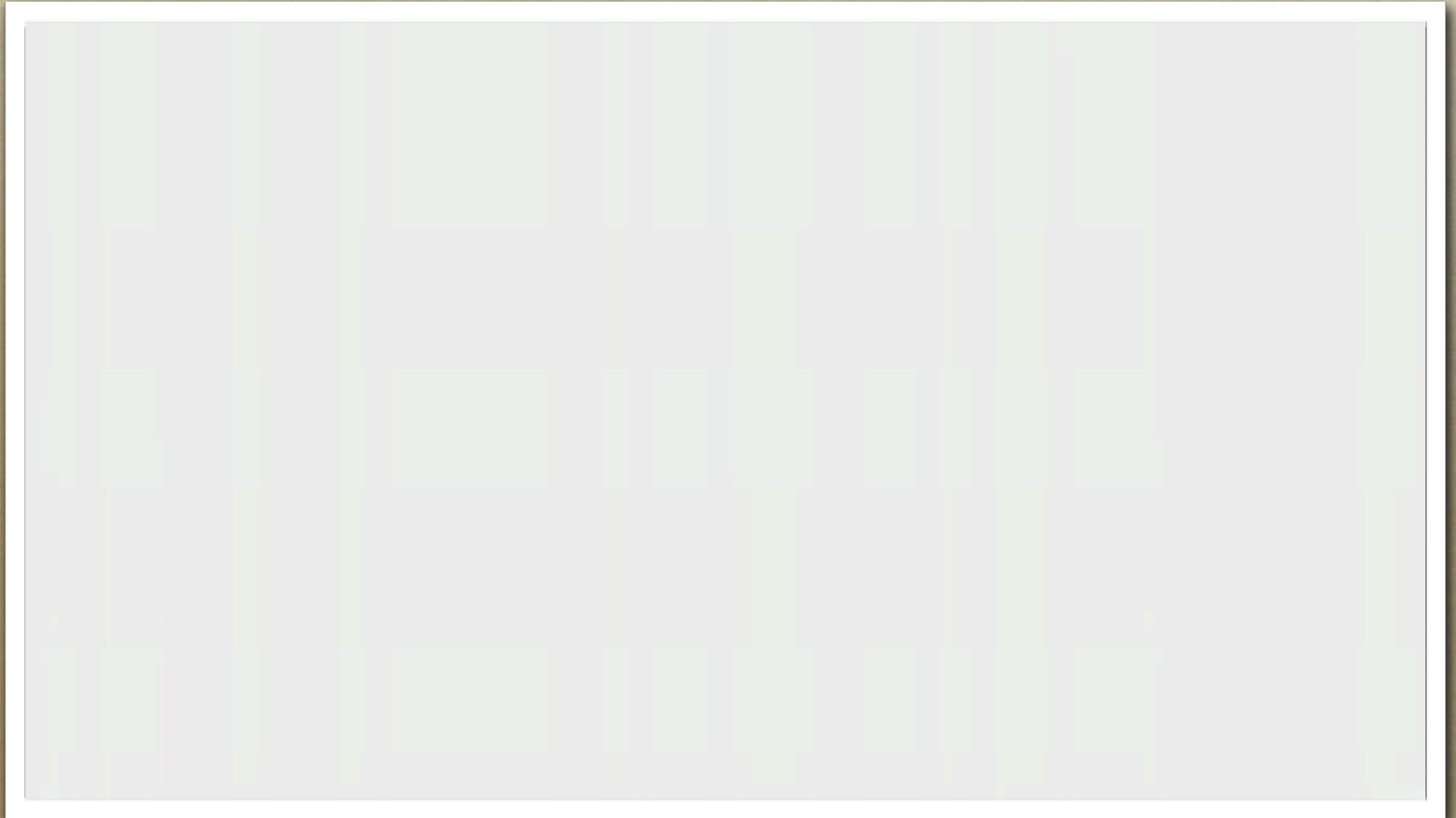
What is GDP?

The GDP is often precisely wrong

- it's not measuring "progress", just the making of stuff.

Nic Marks, a Fellow at the London-based New Economics Foundation

Speaking of STUFF:





SSEE2011 International Conference



24–26 October 2011

Brisbane Convention and Exhibition Centre, Brisbane, Australia



*Your name
here?*

Annie Leonard

Paul Gilding (TBC)

Lord Mayor of Melbourne

Prof Rob Adams

Amanda McKenzie





SSEE2011 International Conference

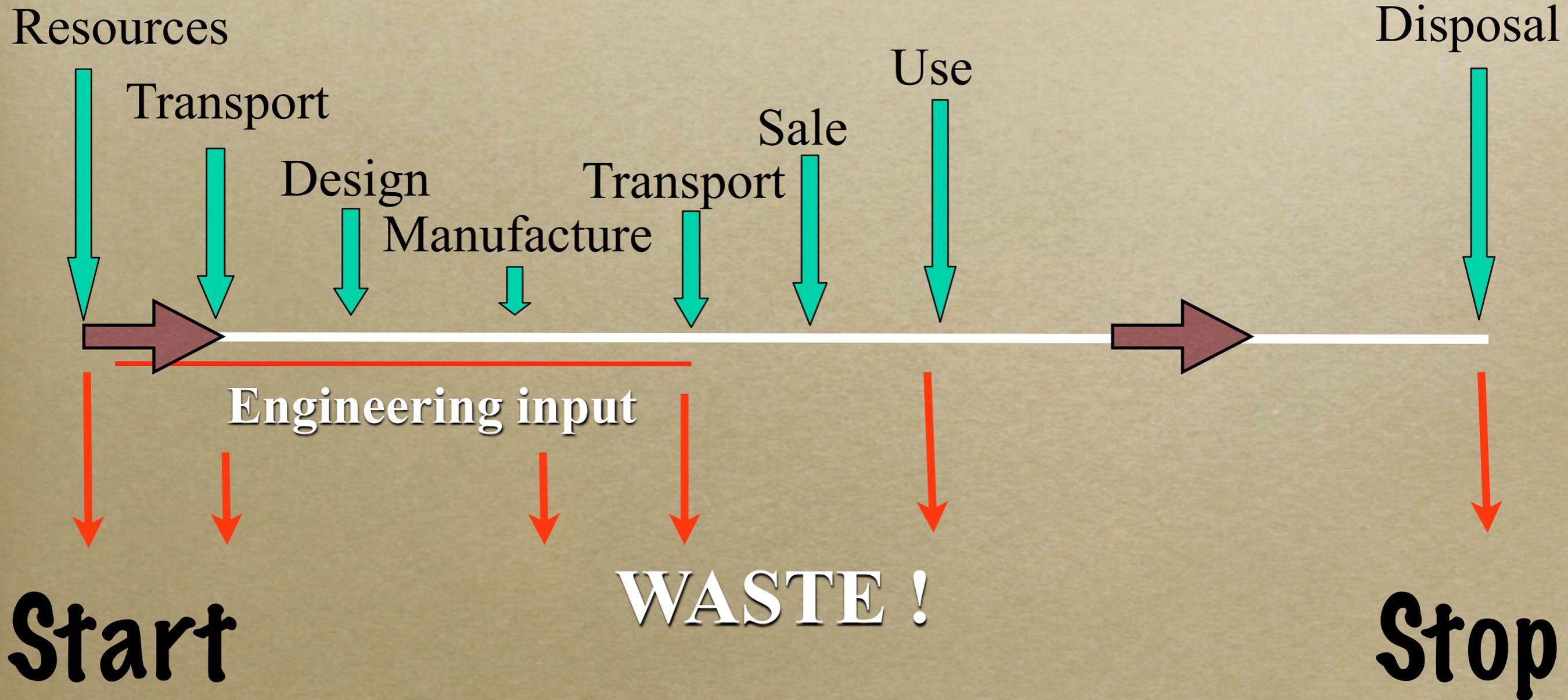


24 - 26 October 2011

www.ssee2011conference.com

Back to STUFF

Linear Thinking



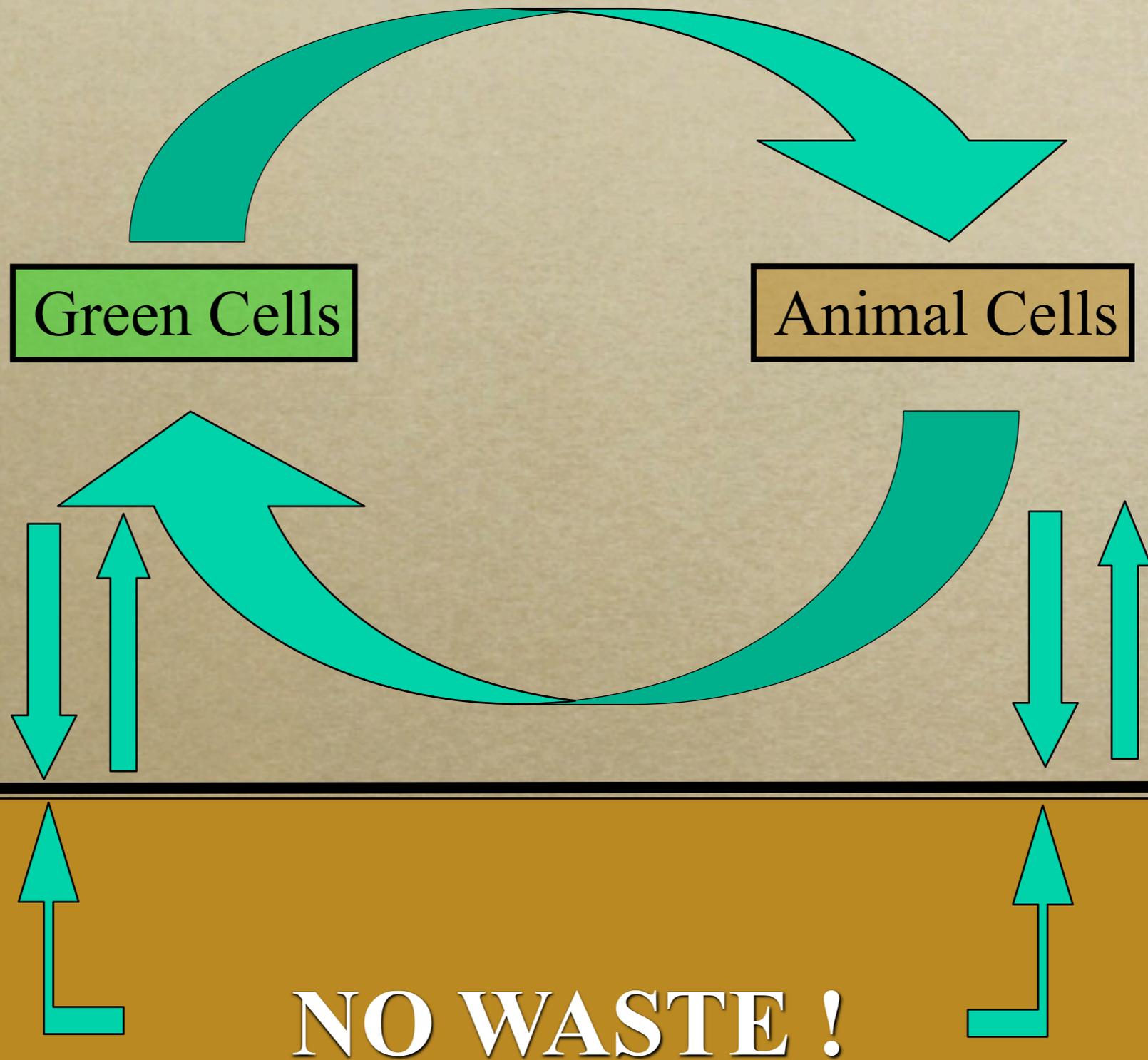


We need *Systems Thinking*

But, Nature does not make its stuff in a series of isolated activities, but rather a complex interconnected web of relationships all working together as a unified whole.

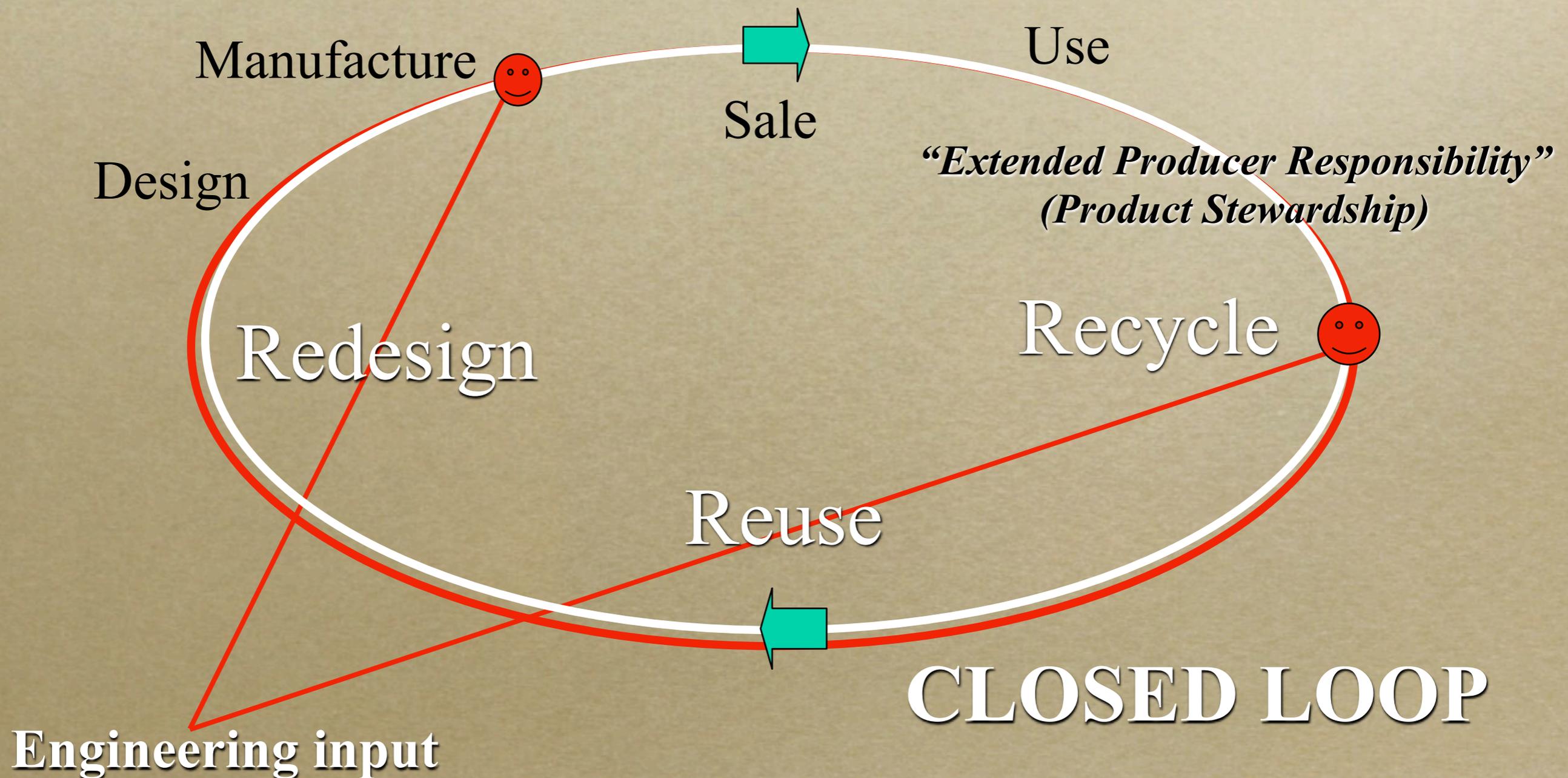
Every part depends upon, and supports every other part of the system....

We need *Systems Thinking*



We need *Systems Thinking*

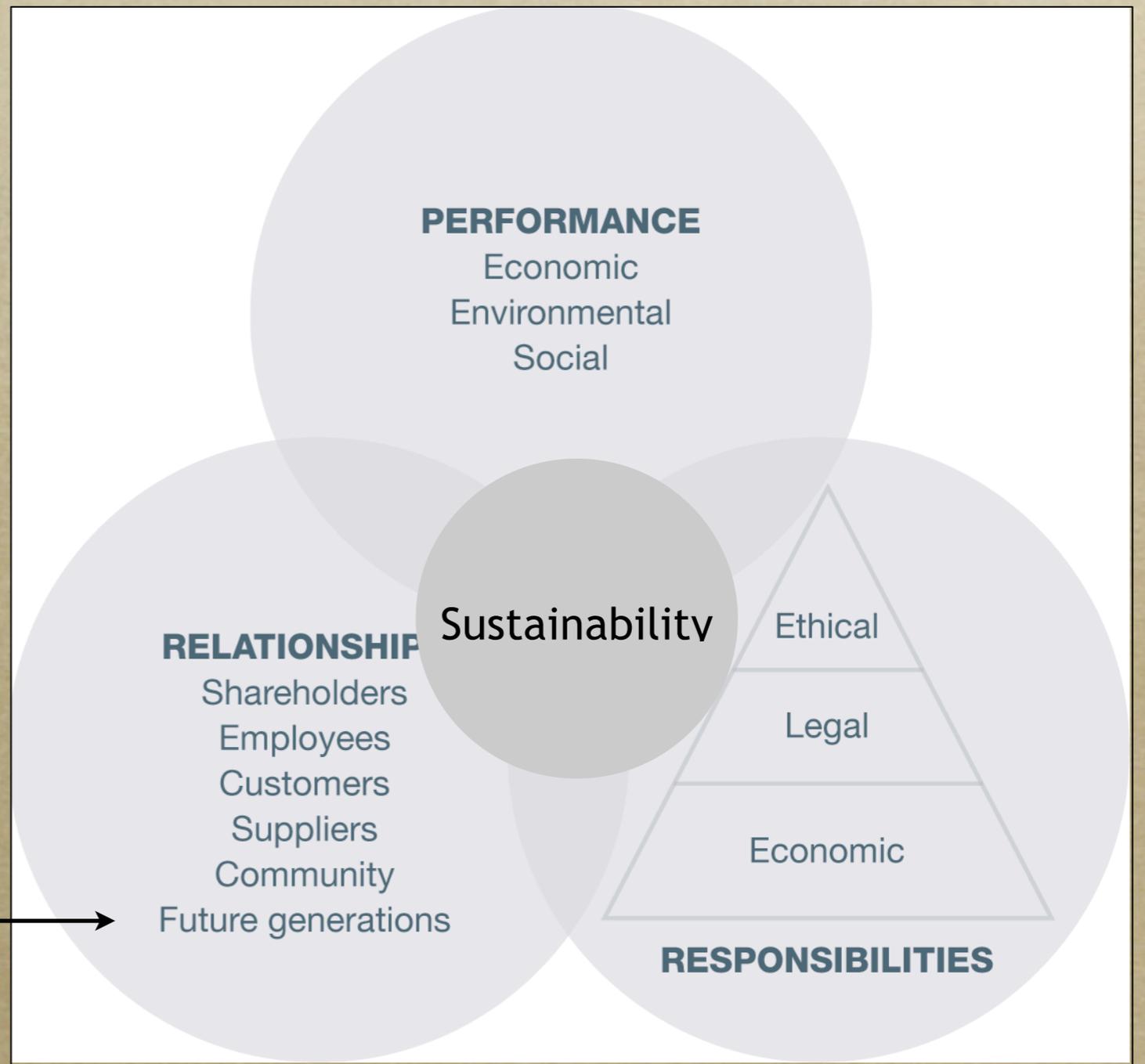
The PARADIGM Change



Corporate Sustainability

From this three dimensional model, corporate sustainability may be defined as the responsible management of the economic, environmental and social needs of, and impacts on, key stakeholders.

The inclusion of future generations among key stakeholders provides a link to the Bruntland definition of sustainability and takes corporate thinking beyond the usual profit planning and reporting cycle.



Is this sustainability?



Is this sustainability?



**A Magnificent
Engineering
Structure?**

OR,

**Visual amenity degraded in the name
of economic efficiency**

& GDP growth....



Is this sustainability?



Is this sustainability?



OK, what is sustainability?

the ability to maintain an improving quality of life for all people, both now and into the future, whilst ensuring the continued availability of the natural resources and ecosystem services essential to supporting life on earth.

Why is sustainability important?

It took **3.8 billion years** to create the natural capital on which life, and business on earth depends.

Our activities have destroyed forever 50% of that natural capital (ecosystem services) in only the past 30 years.

Do we need to change?

“The definition of madness is doing the same thing over and over again, and expecting to achieve different results.”

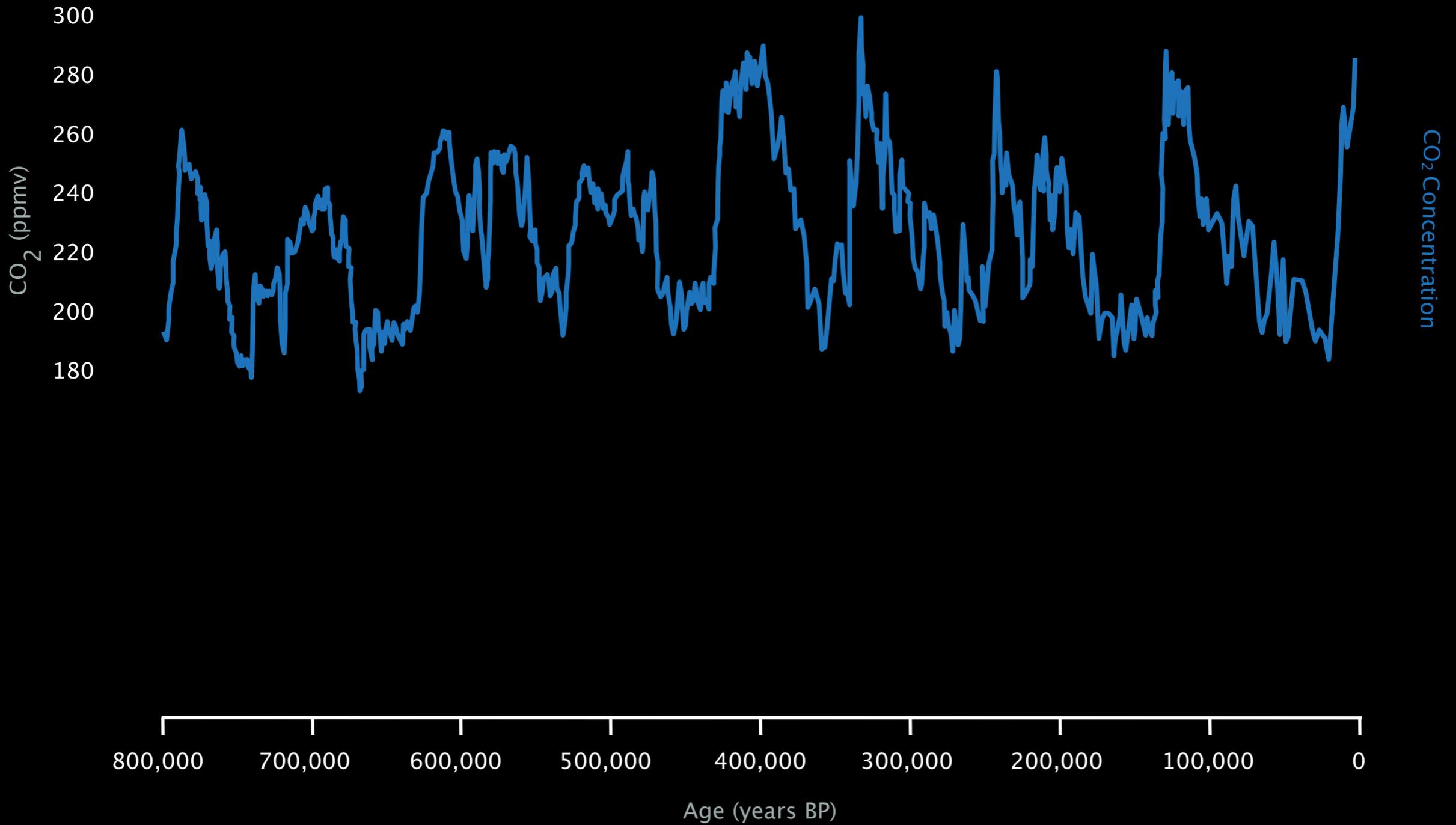
Albert Einstein

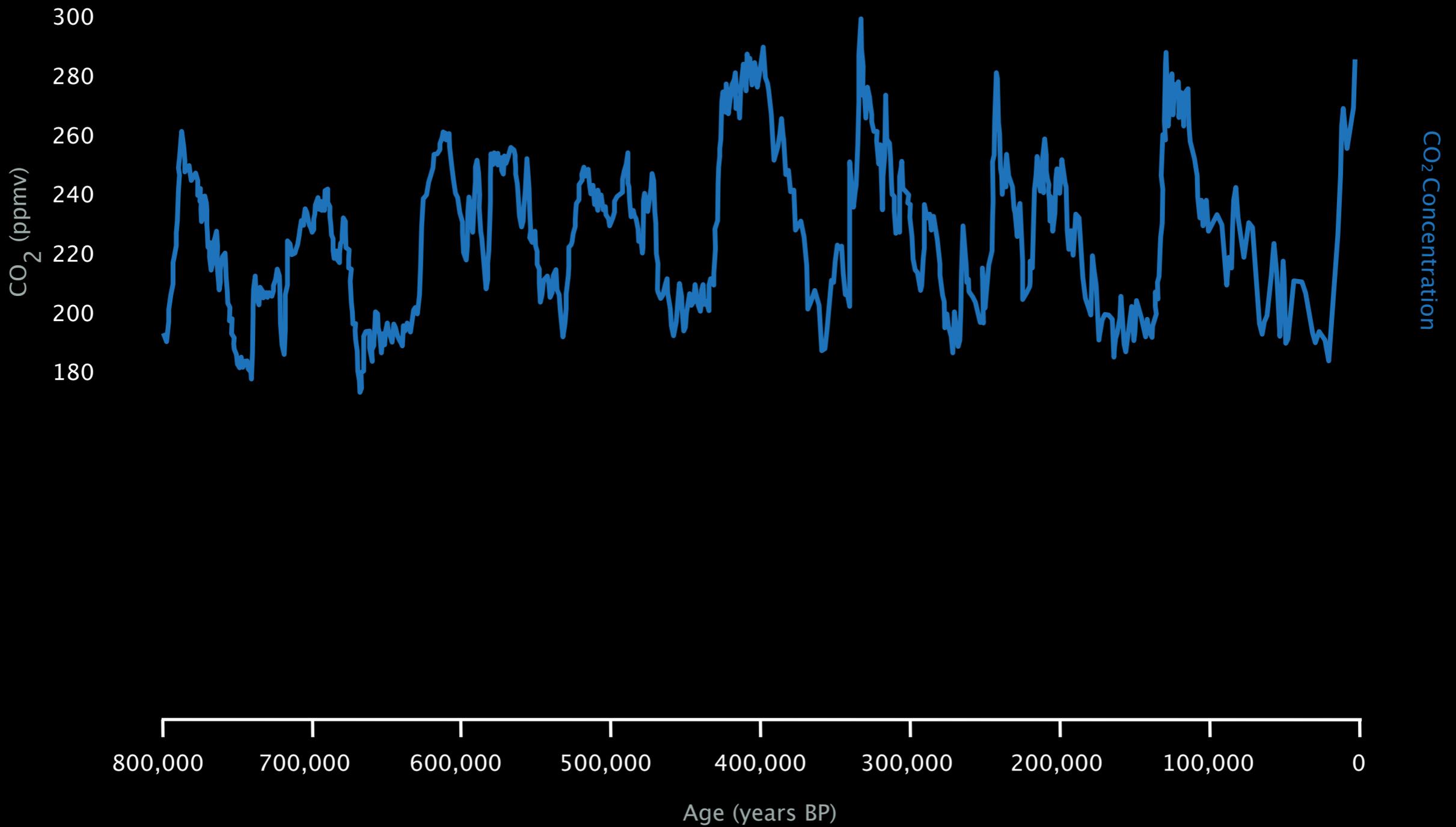
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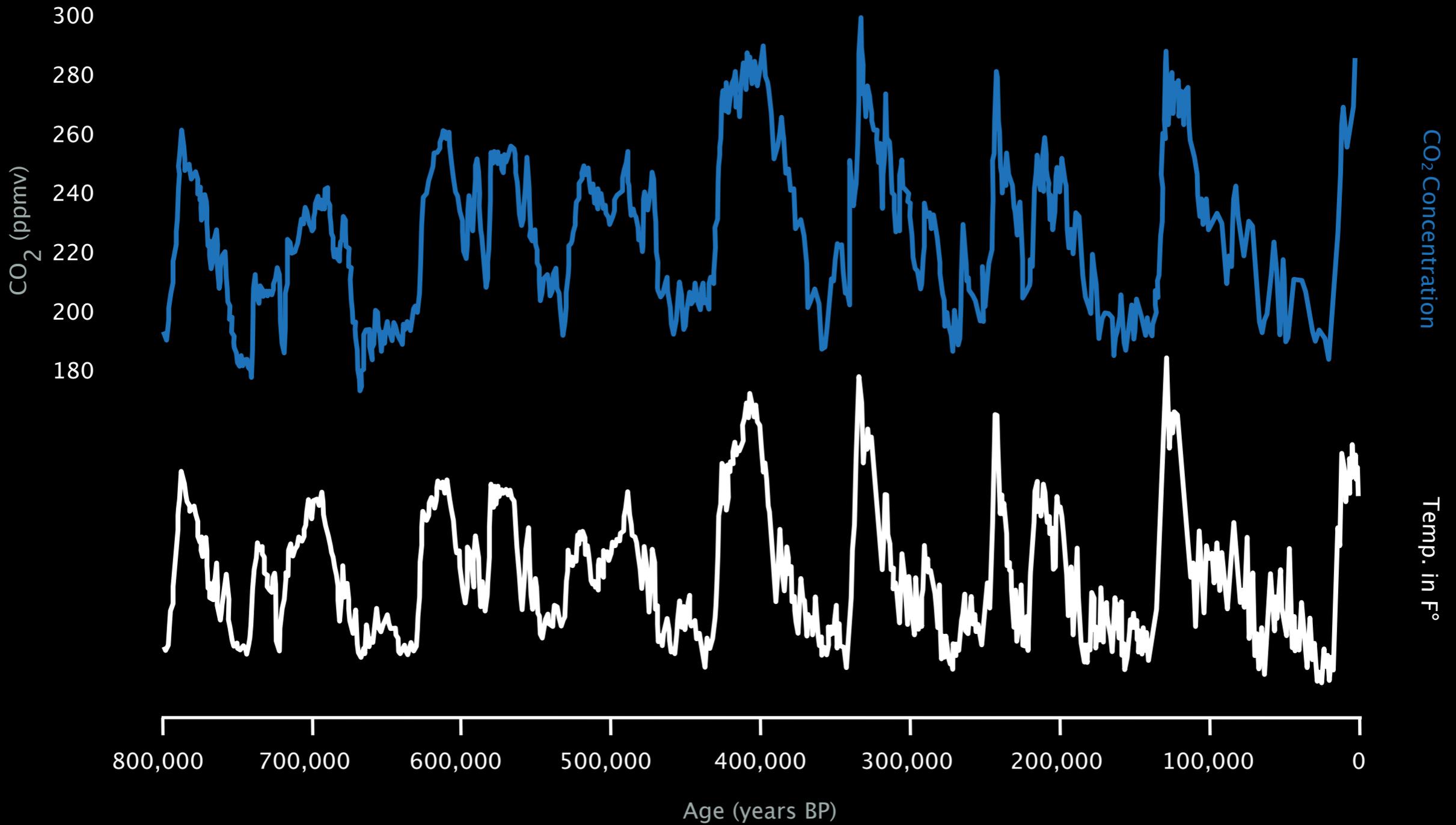
- Climate Emergency - global warming - climate change (lack of systems thinking);
- Finite resources (peak oil);
- Population explosion (planet's carrying capacity);
- Biodiversity loss (eco-system services); and
- Greed (poor corporate governance).....

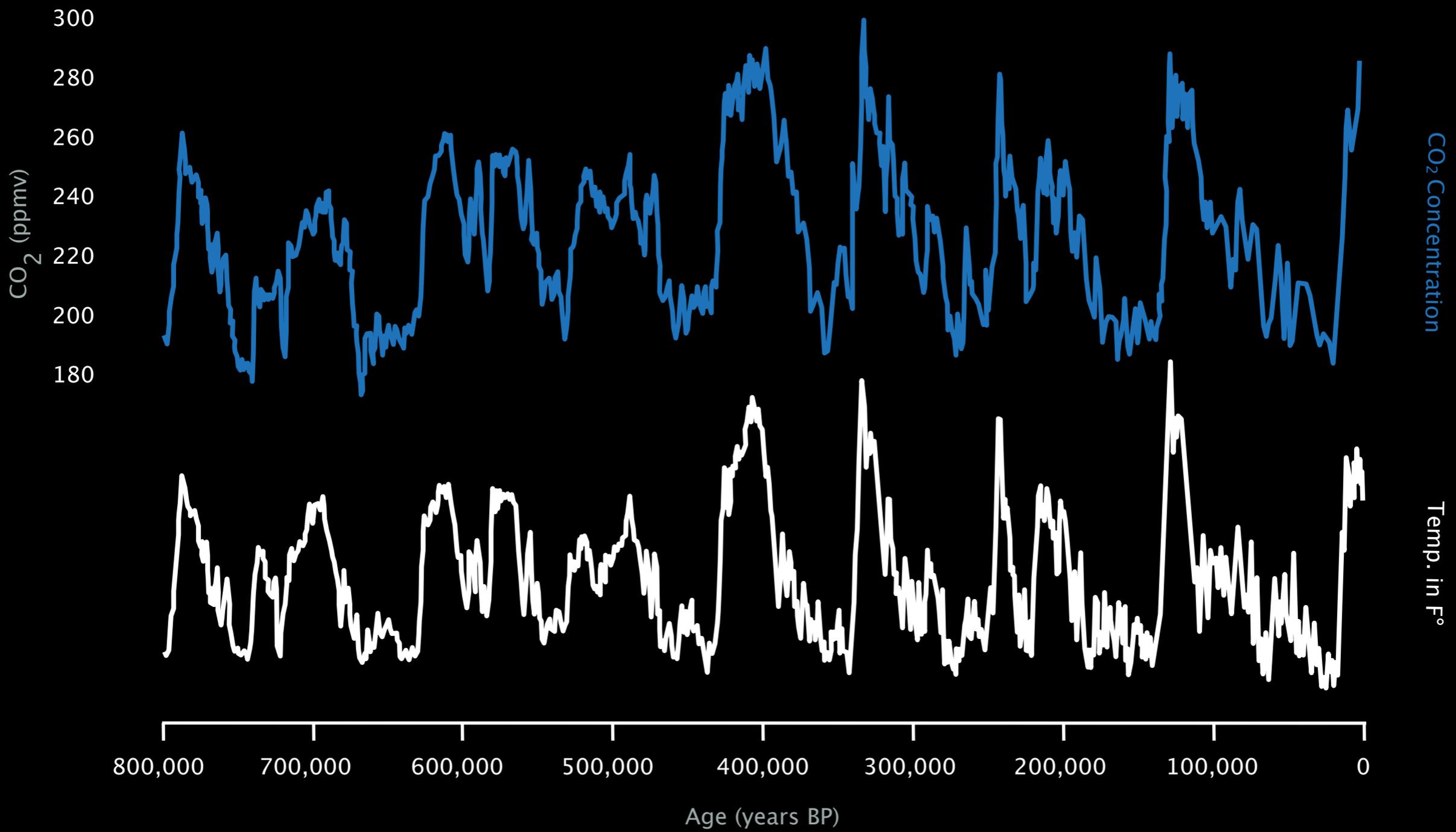


Photo: NASA

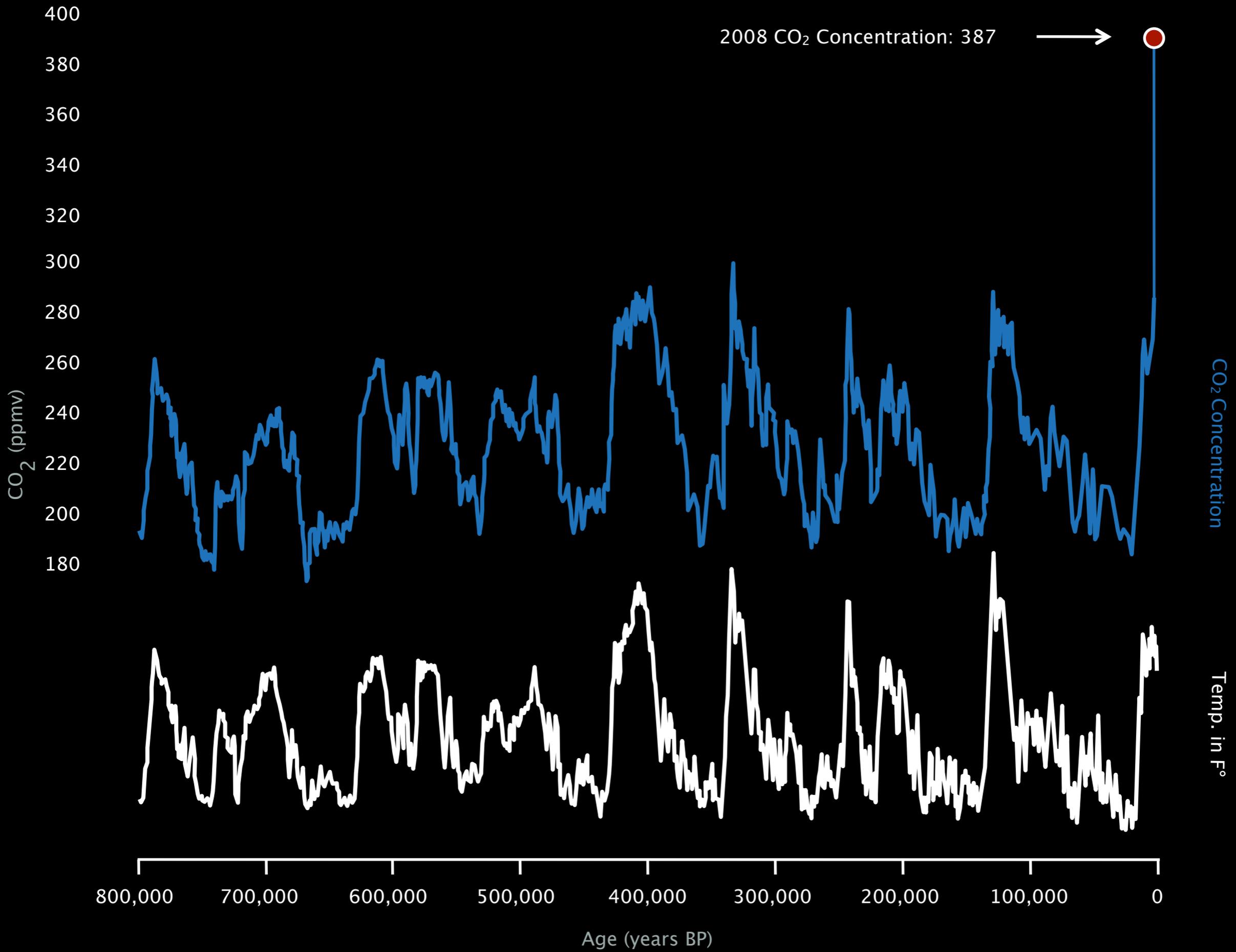








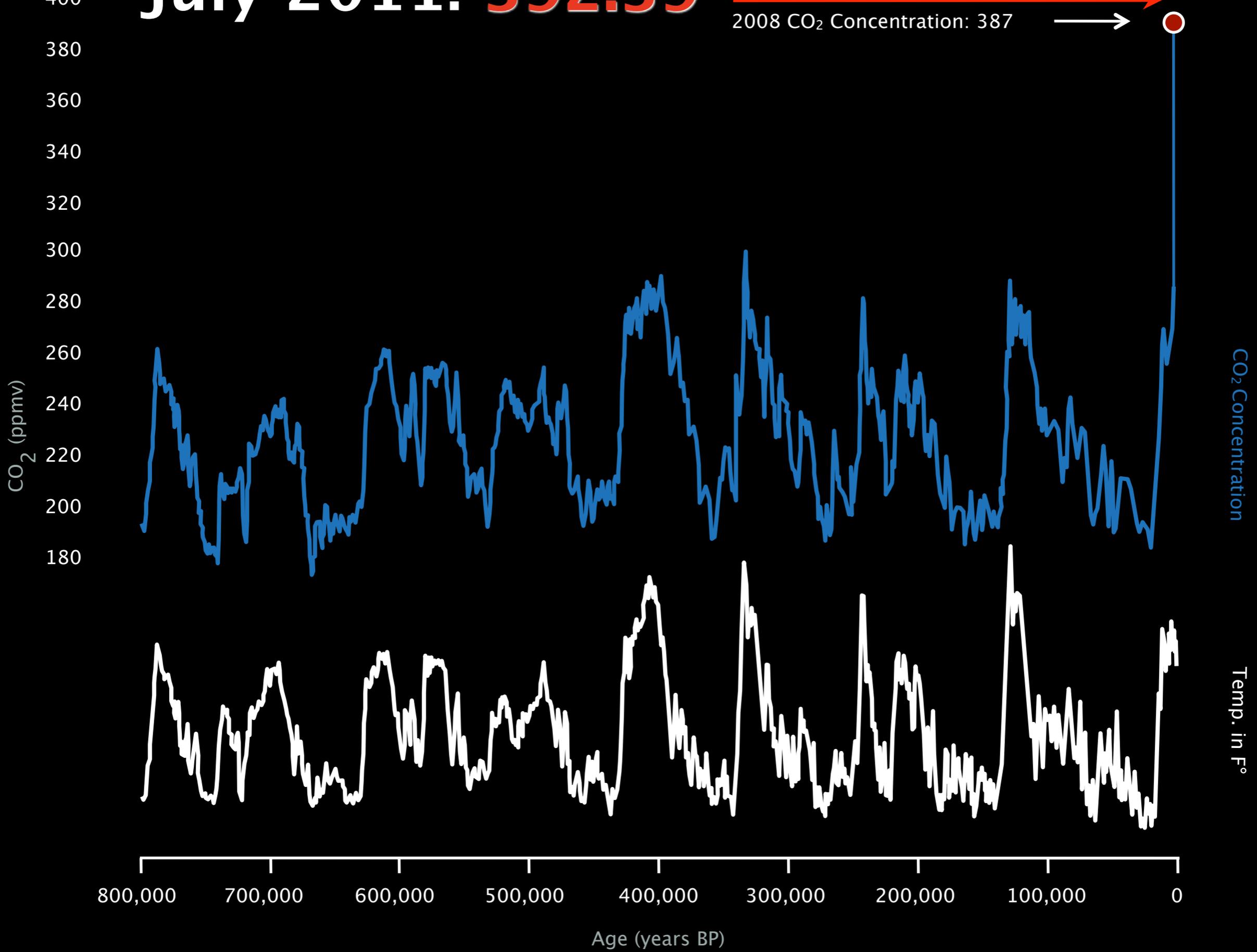
Source: National Climatic Data Center/NOAA



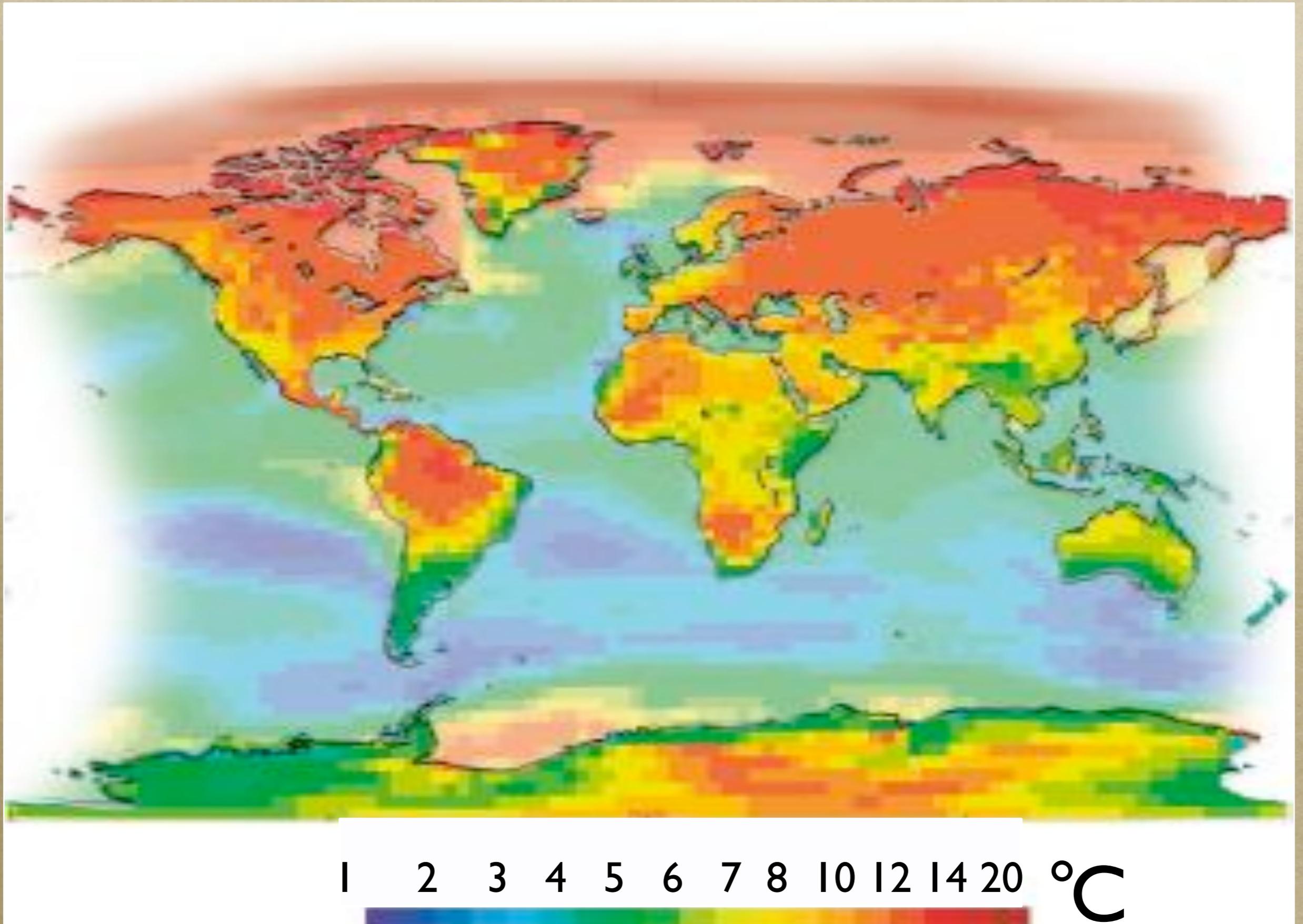
Source: National Climatic Data Center/NOAA

July 2011: 392.39

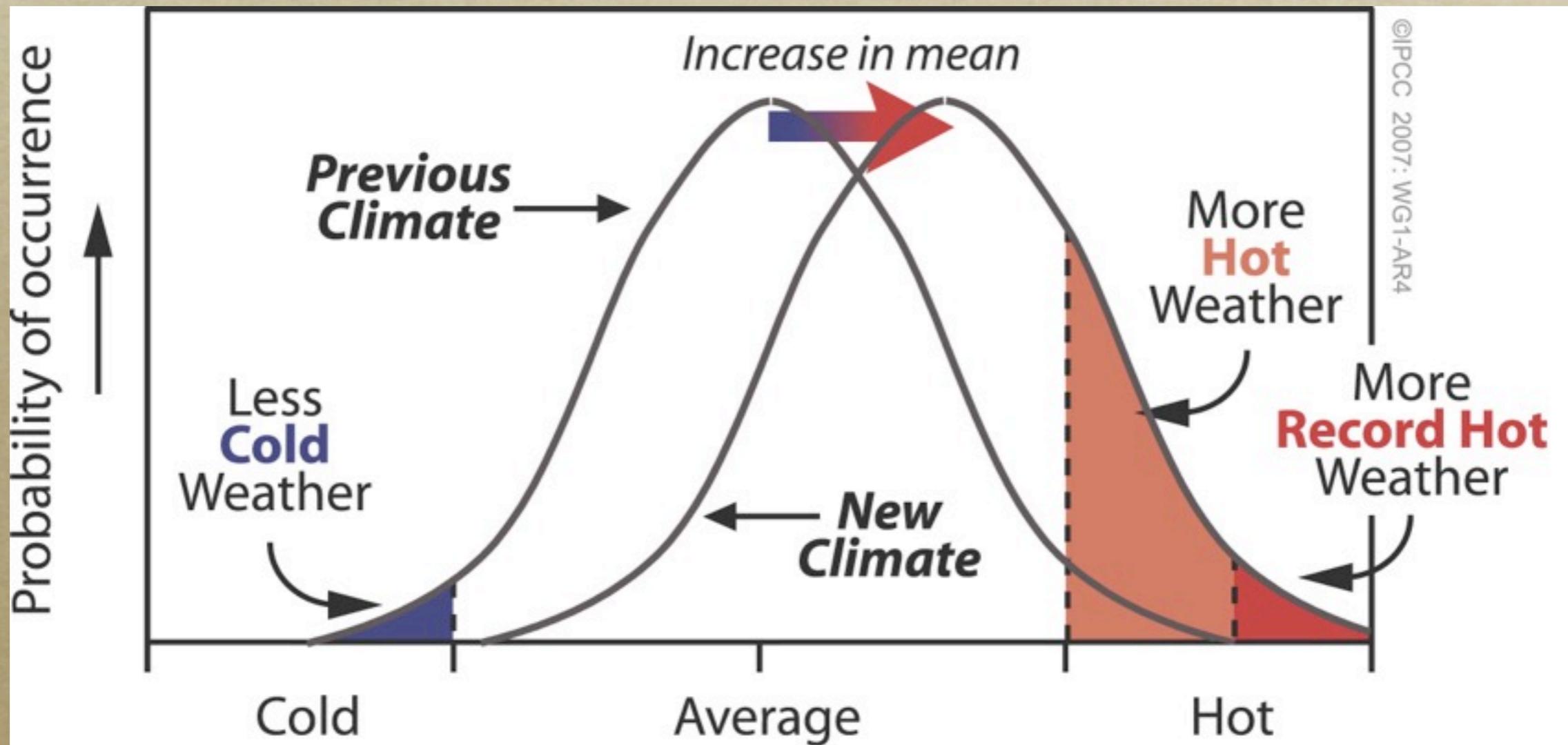
2008 CO₂ Concentration: 387



Regional temperature increases for an average 4°C increase relative to 1890.



Just how serious is this crisis?



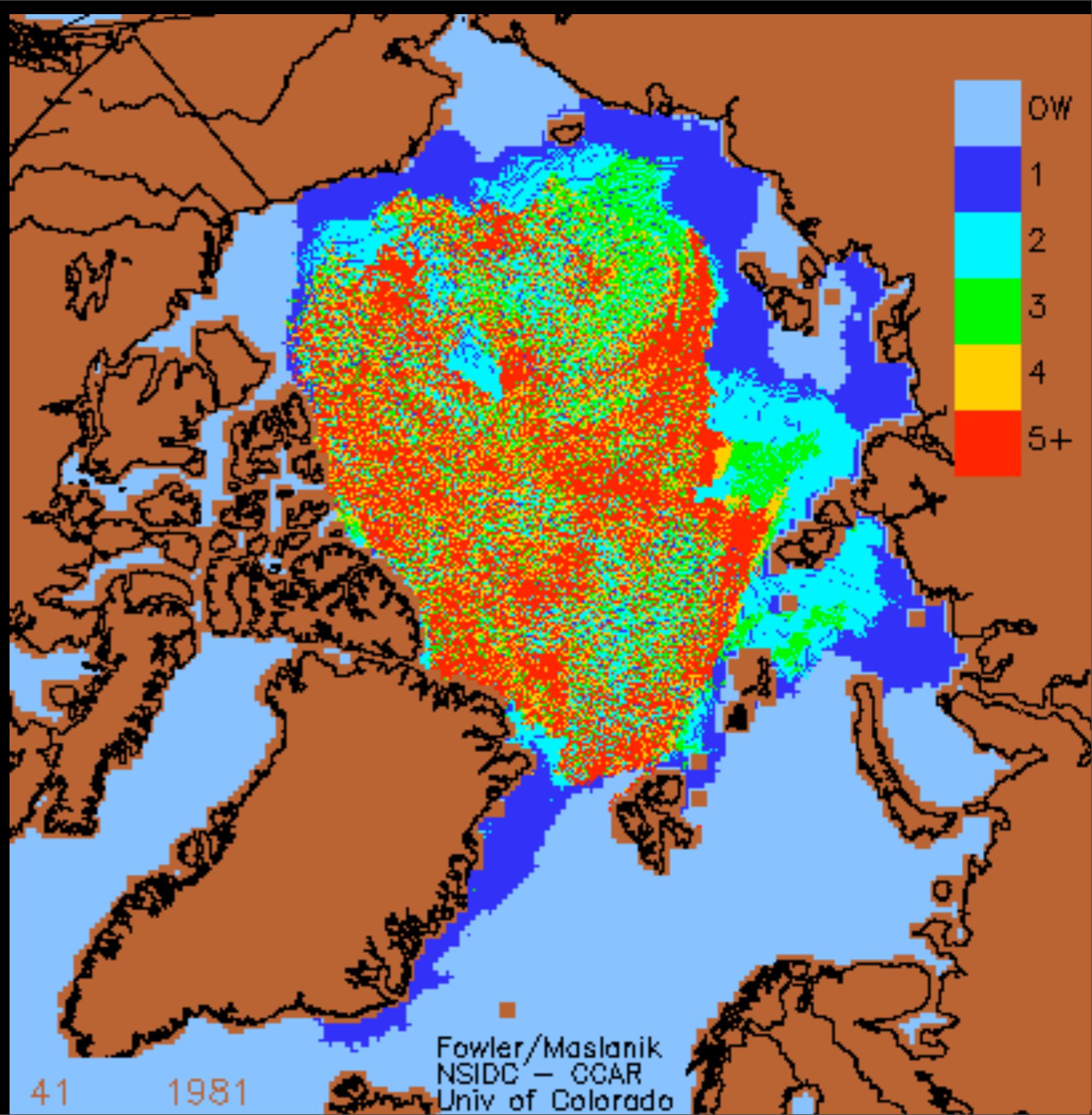
A small change in the average of a variable can have a disproportionate influence on the frequency of extreme events of that variable.

2°C shift results in a 26% increase severe discomfort

Blue is ice less than 1m thick

Red is ice 5m thick or more

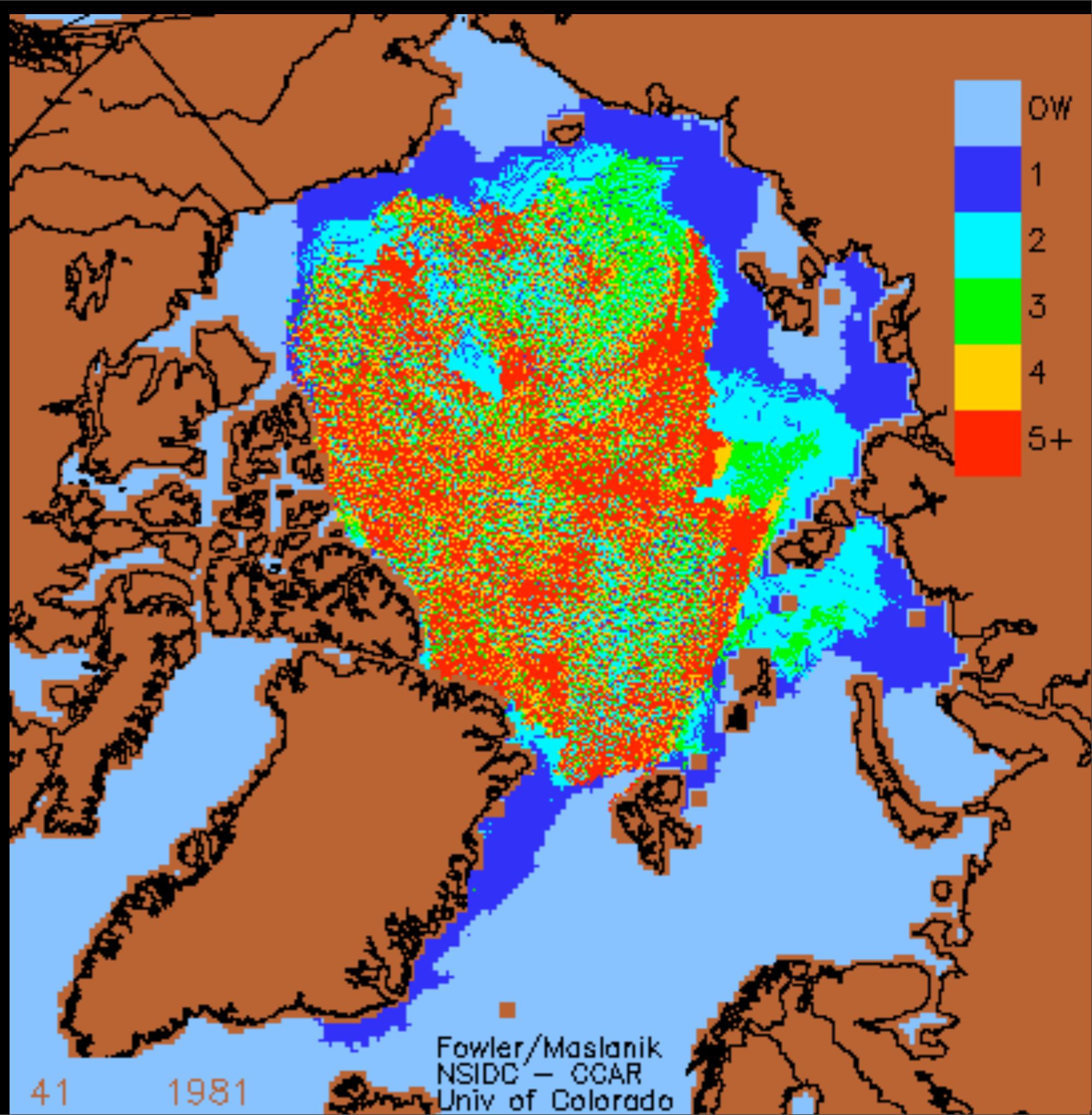
1981
to
2007



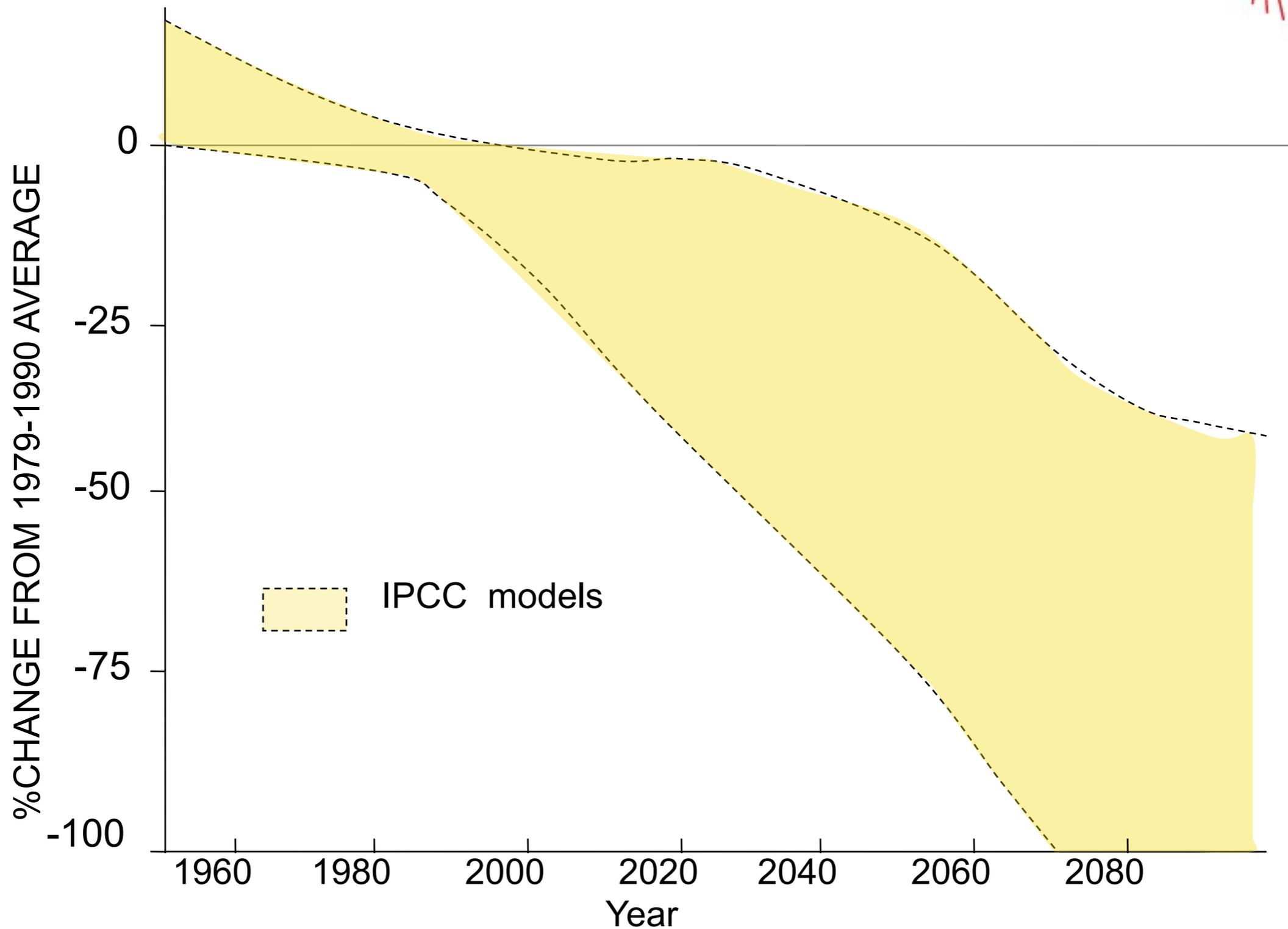
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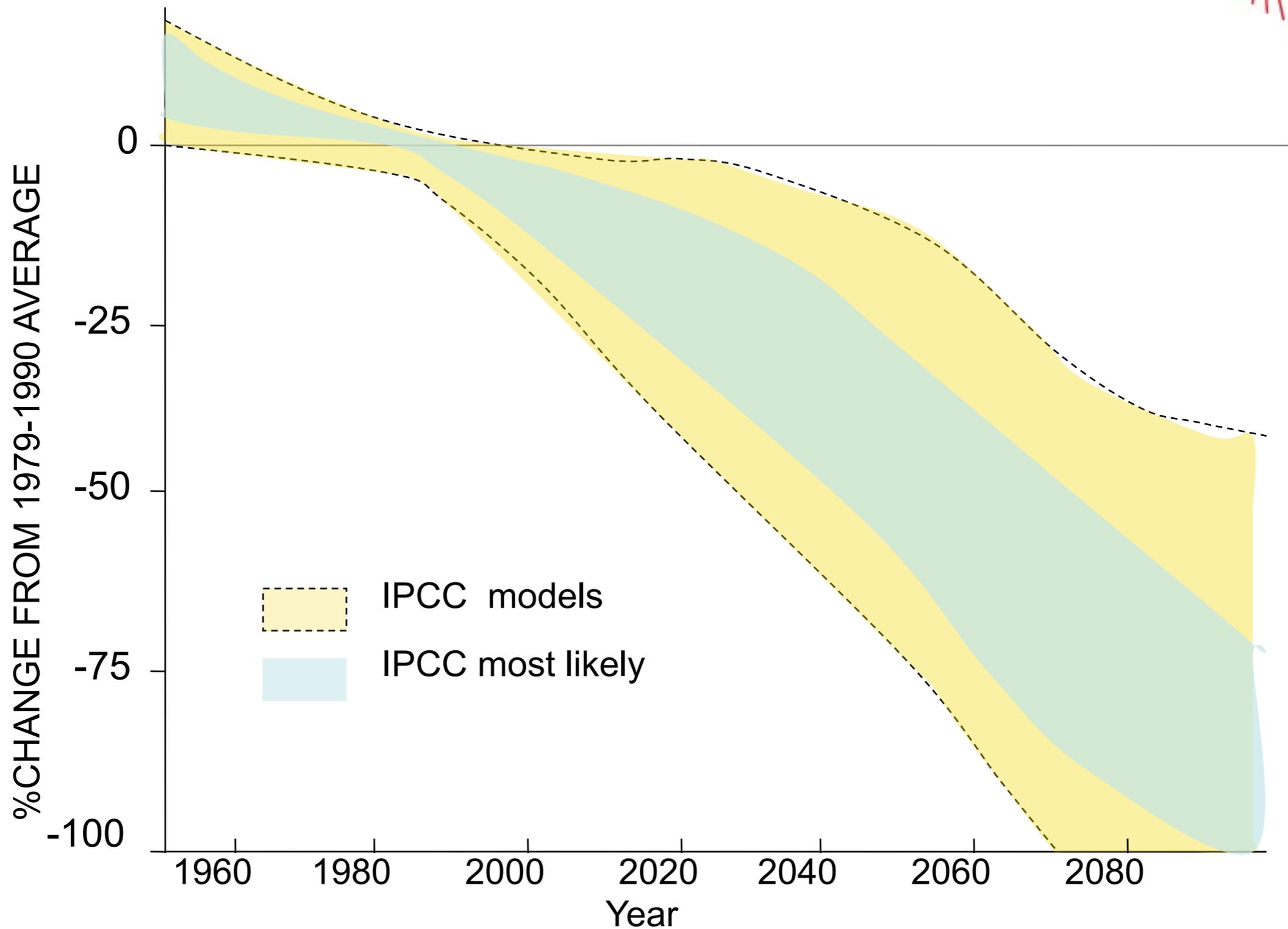
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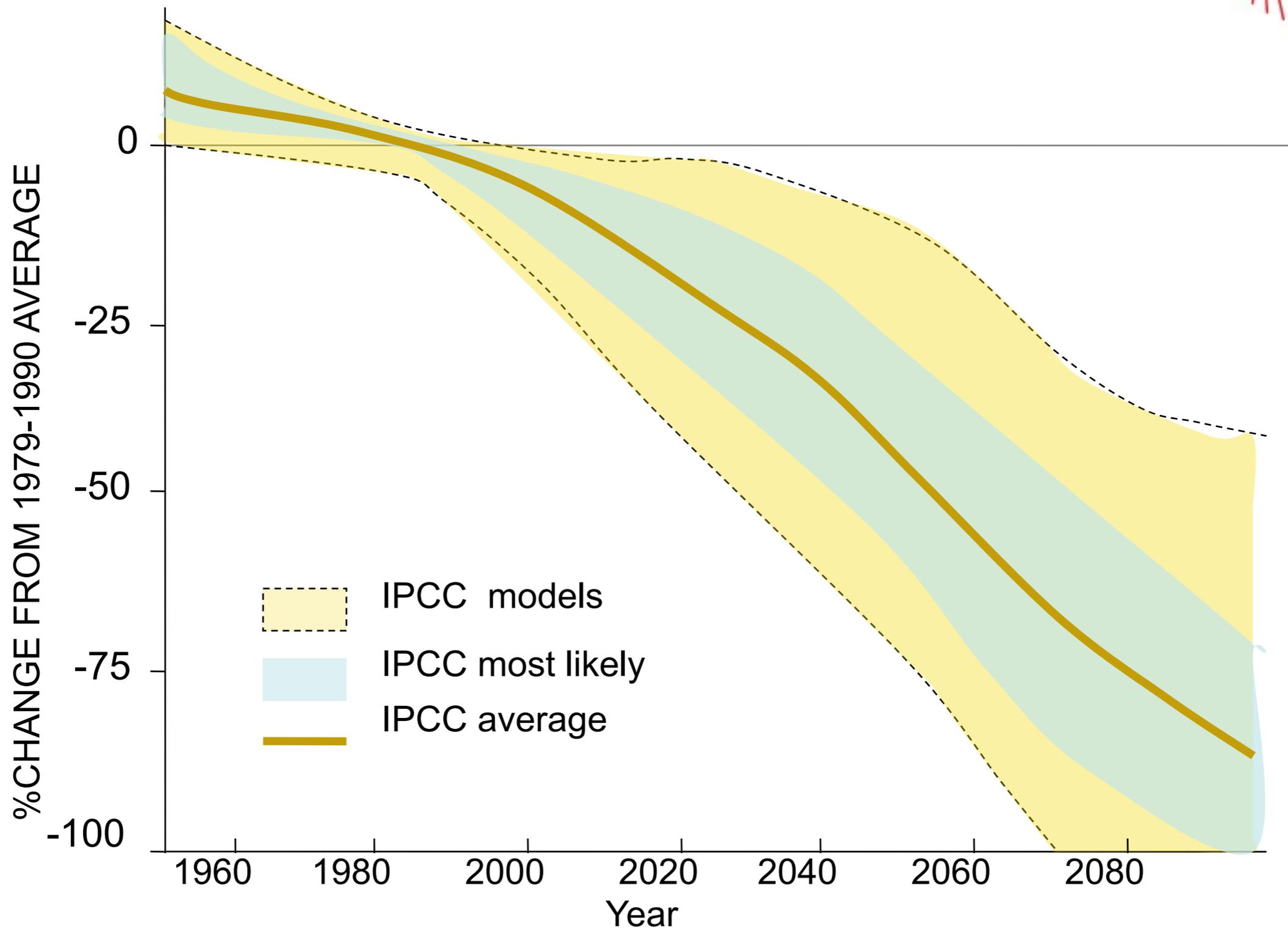
Arctic Sea Ice



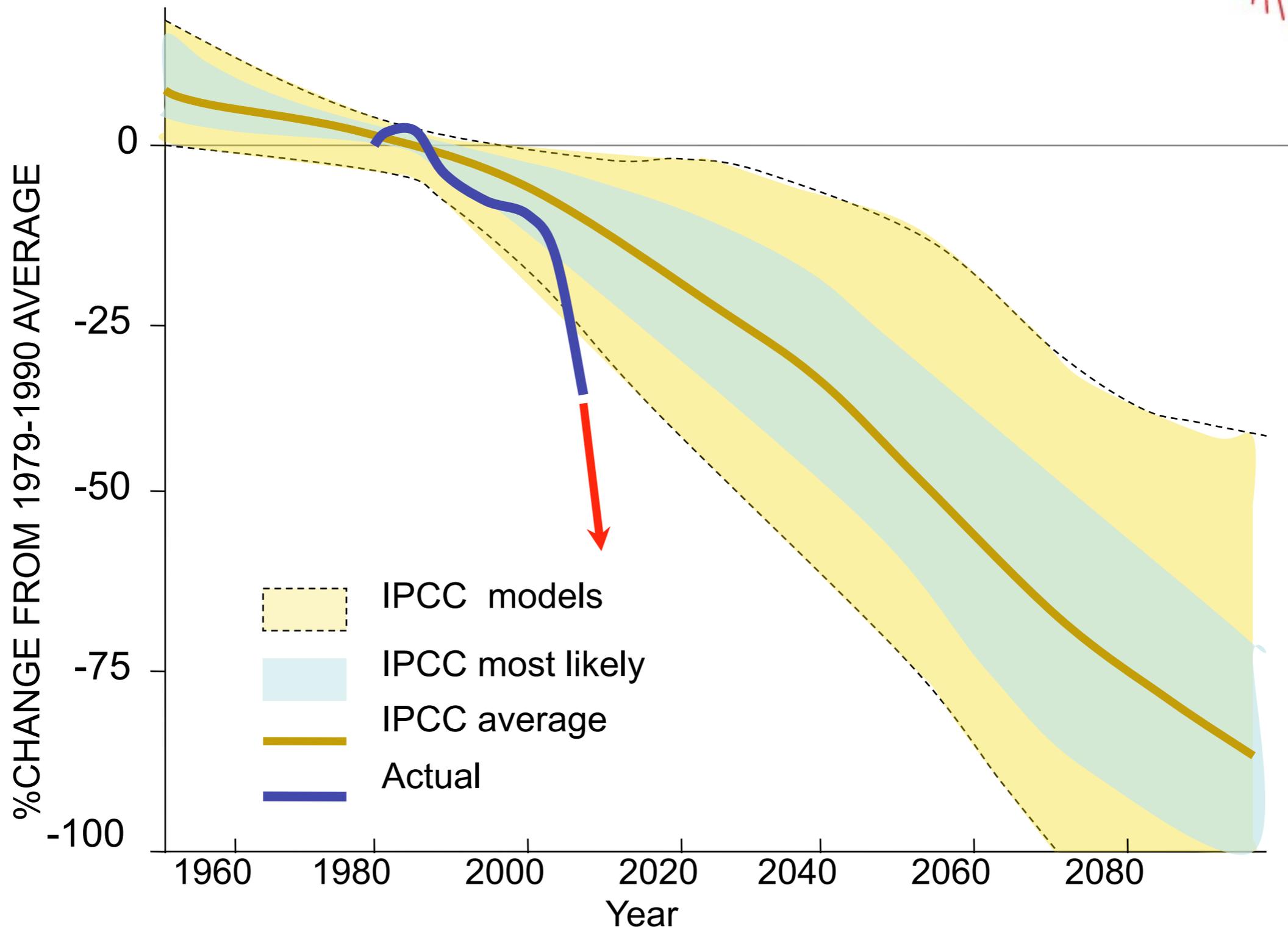
Arctic Sea Ice



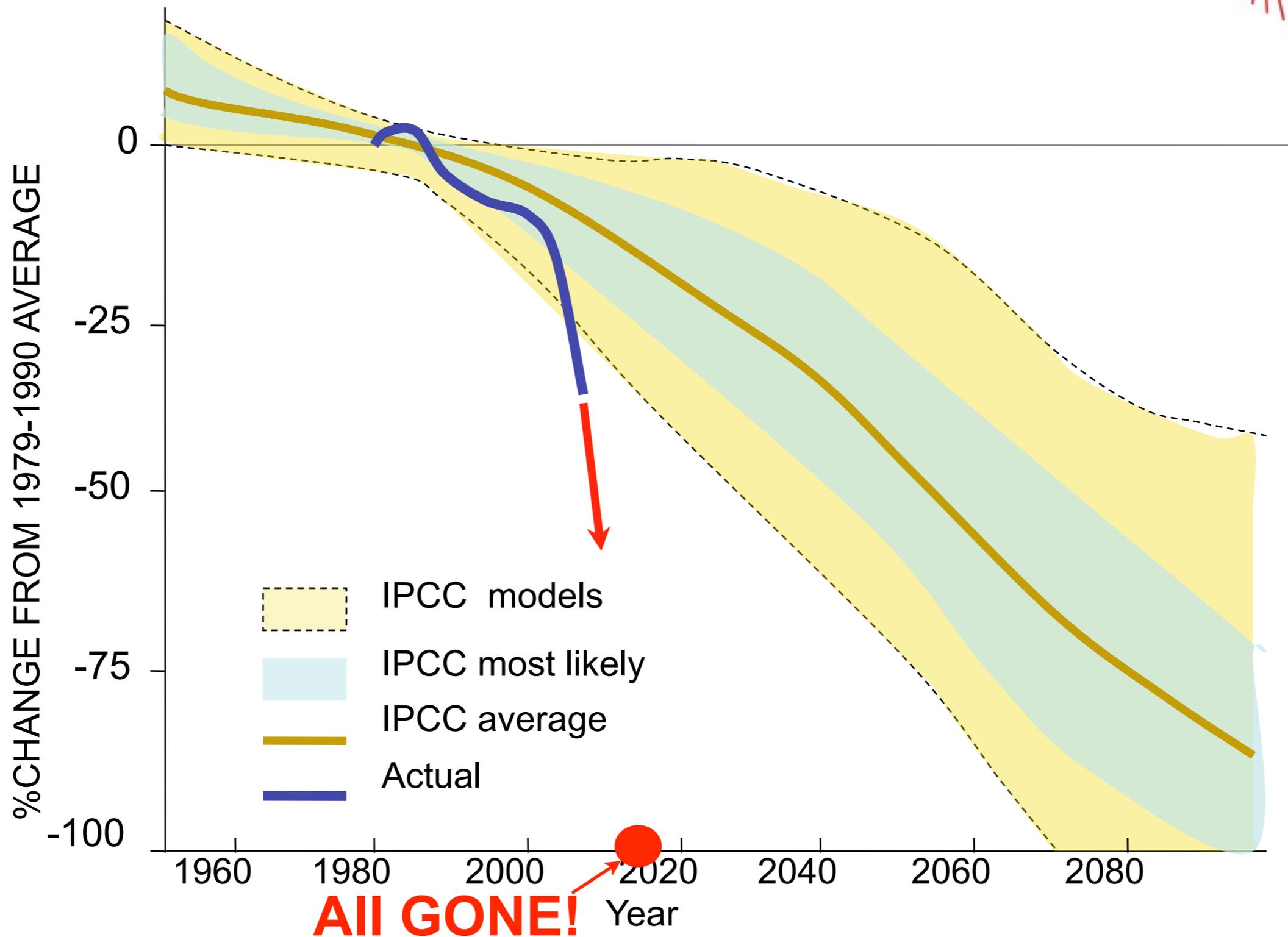
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Arctic Sea Ice

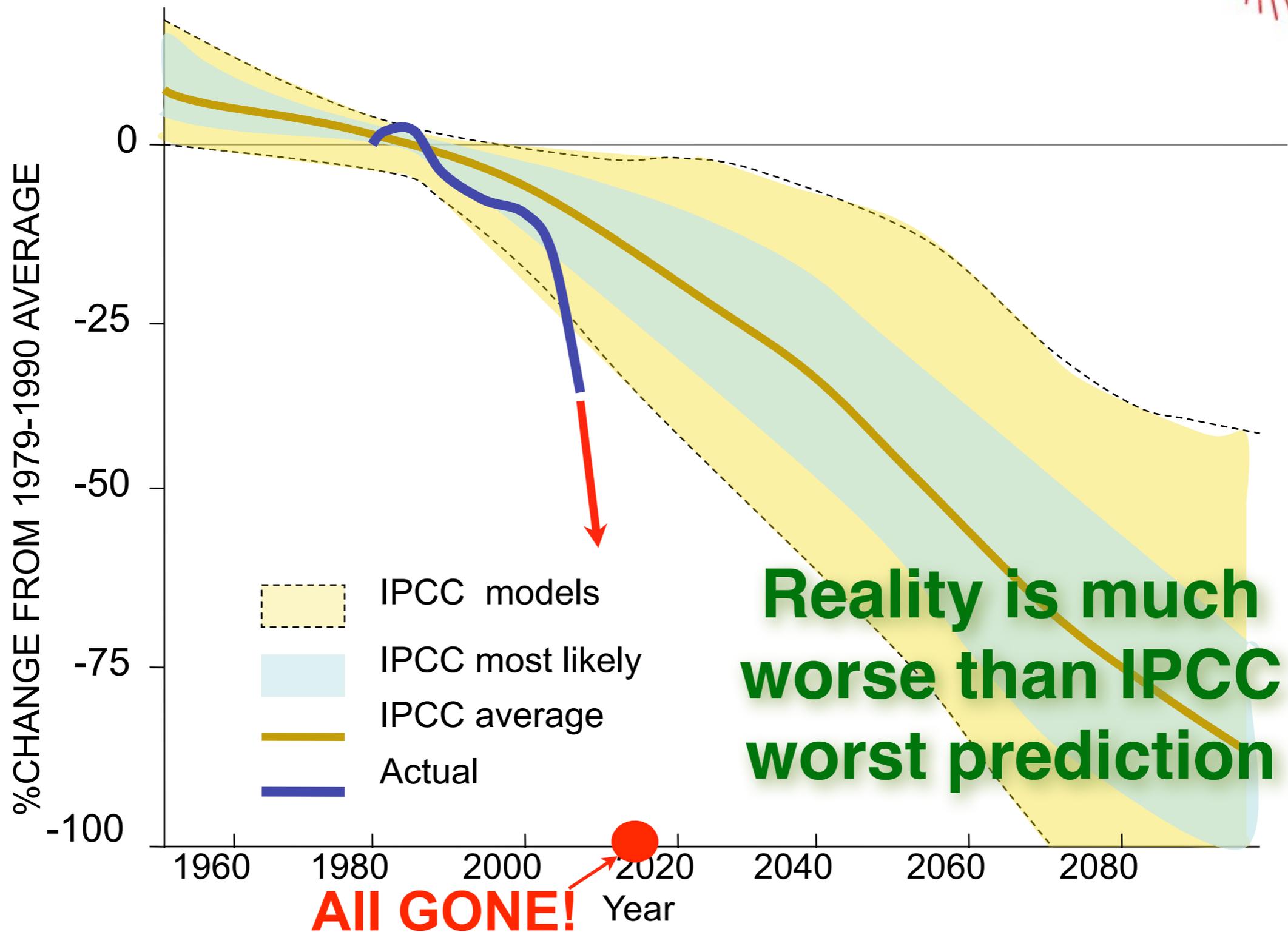


Arctic Sea Ice



All GONE! Year

Arctic Sea Ice



No sea level rise



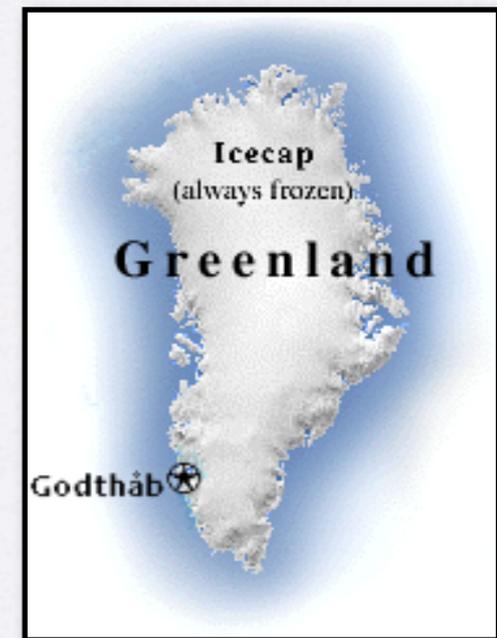
7 m average WORLD WIDE
sea level rise

No sea level rise



The Greenland ice cap

- Land ice on Greenland
= 1,833,900 sq.km
- or 85% of Greenland.



- 3 km thick = 4,587,750 cubic kms of ice currently out of water
- * (= 8% of the world's fresh-water).
- As it melts water shrinks by 8%, so volume of water going into the oceans would be 4,220,730 cubic kms.

The Greenland ice cap

- Surface area of the earth = 510,065,600 sqkm
- 70% is sea = 361,126,400 sqkm.
- Simple formula:

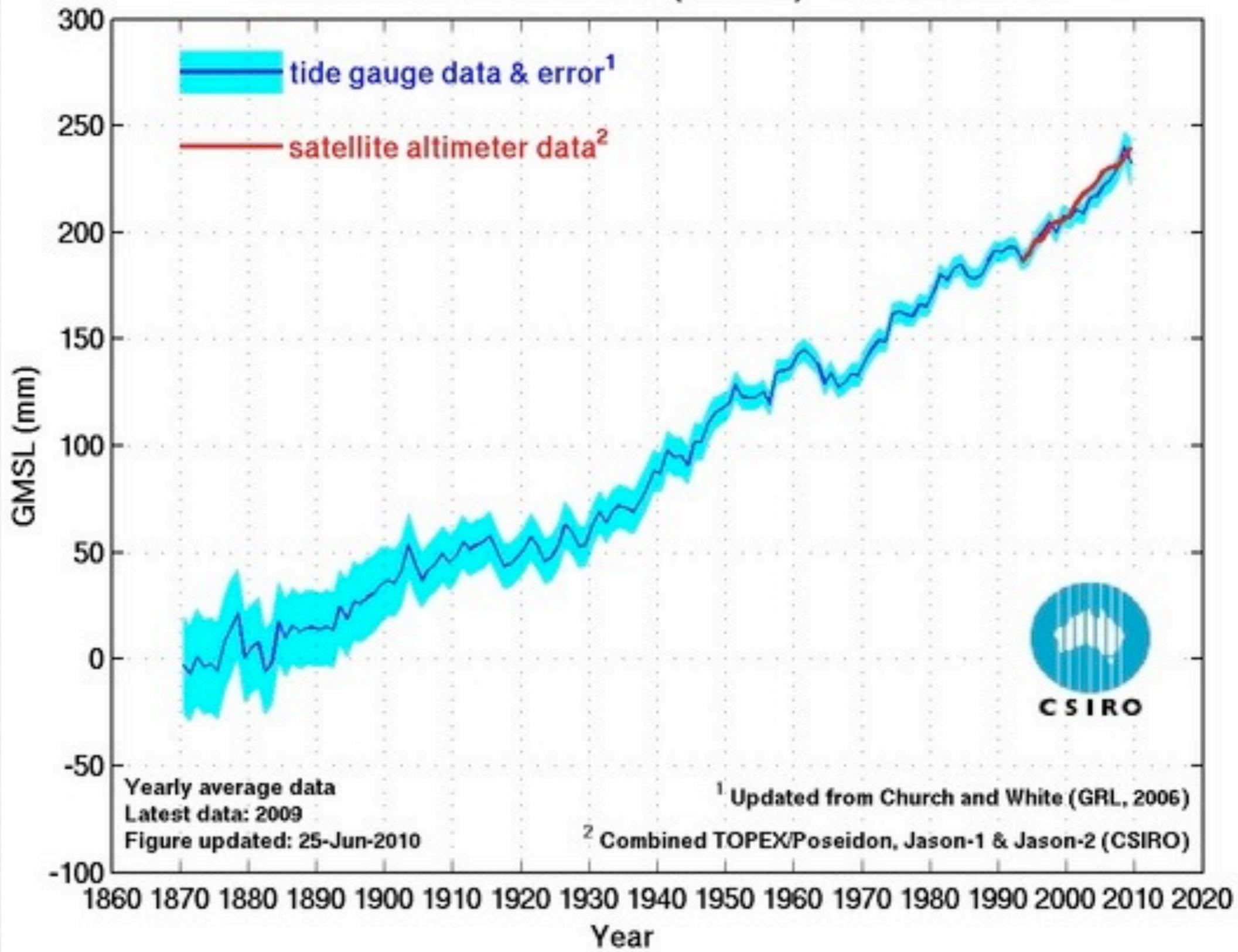
$$361,126,400 * x = 4,220,730$$

- giving $x = 0.0116876$ Km, or **11.687m** of (vertical sided) sea level rise.

As much of this rise would flood land and increase the earth's surface water area expect the sea level rise to be somewhat less,

say about 7m rise
from a total Greenland ice melt.

Global Mean Sea Level (GMSL) - 1870 to 2009



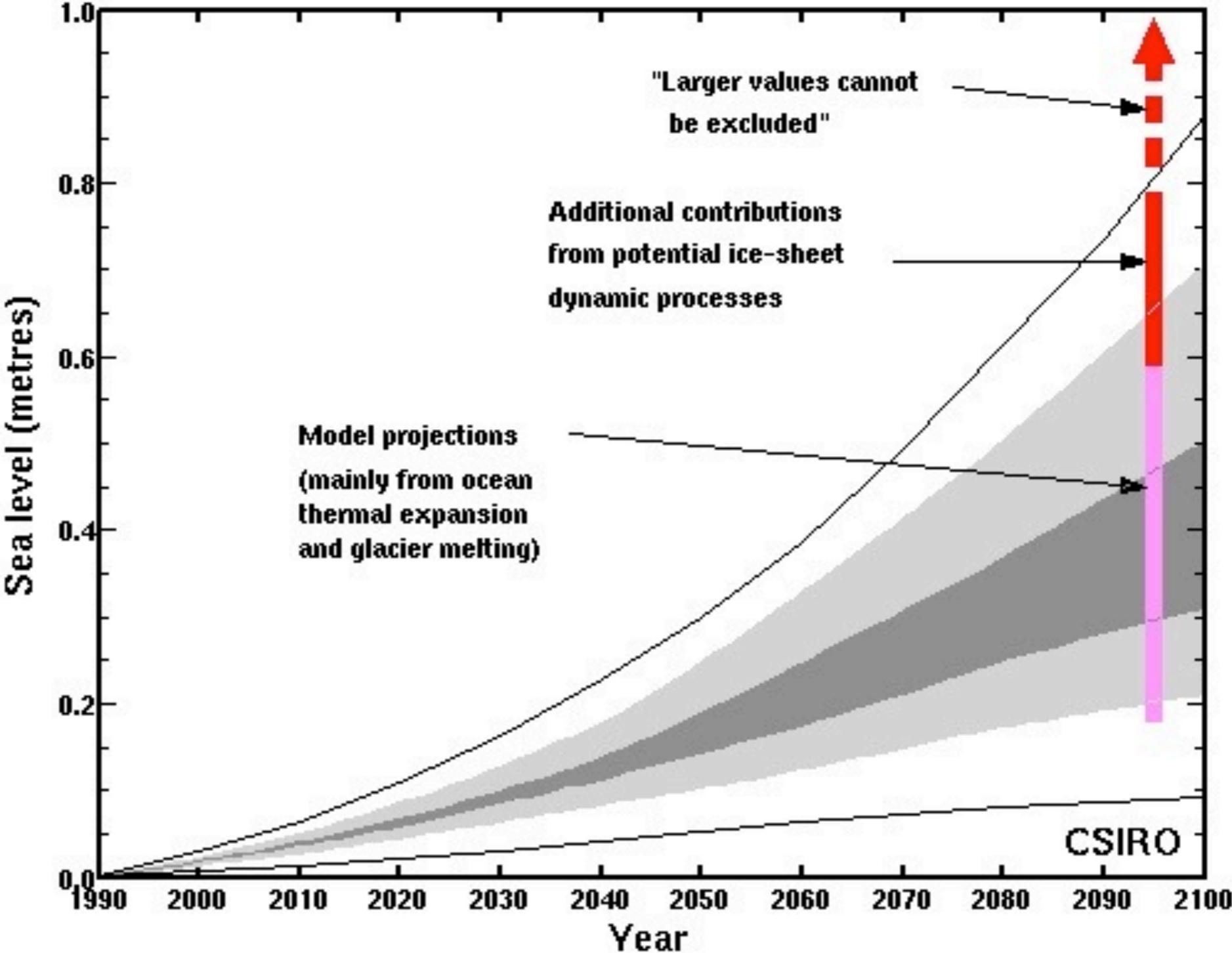
Yearly average data
Latest data: 2009
Figure updated: 25-Jun-2010

¹ Updated from Church and White (GRL, 2006)

² Combined TOPEX/Poseidon, Jason-1 & Jason-2 (CSIRO)



IPCC 2007 Forecasts of global average sea level rise



What would a 7m sea level rise look like?



MELBOURNE CBD



The fate of a 'living fossil'

“There’s no question that we
are in a mass extinction
spasm.”

David Wake

University of California, Berkeley





We are
TRASHING
our planet

**Climate change,
resource scarcity,
and
the loss of eco
system services
is now
seriously
threatening
to trash our
economy**

**Back to
WELLNESS**

Is this our future?

Deepwater Horizon Oil Rig

Gulf of Mexico, April 21, 2010

Is this our future?

Deepwater Horizon Oil Rig

Gulf of Mexico, April 20, 2010



Gulf of Mexico

April 21, 2010



Gulf of Mexico

April 21, 2010



Gulf of Mexico

April 21, 2010



Is this wellness?



Do we need to change?

“The definition of madness is doing the same thing over and over again, and expecting to achieve different results.”

Albert Einstein

What about GROWTH?

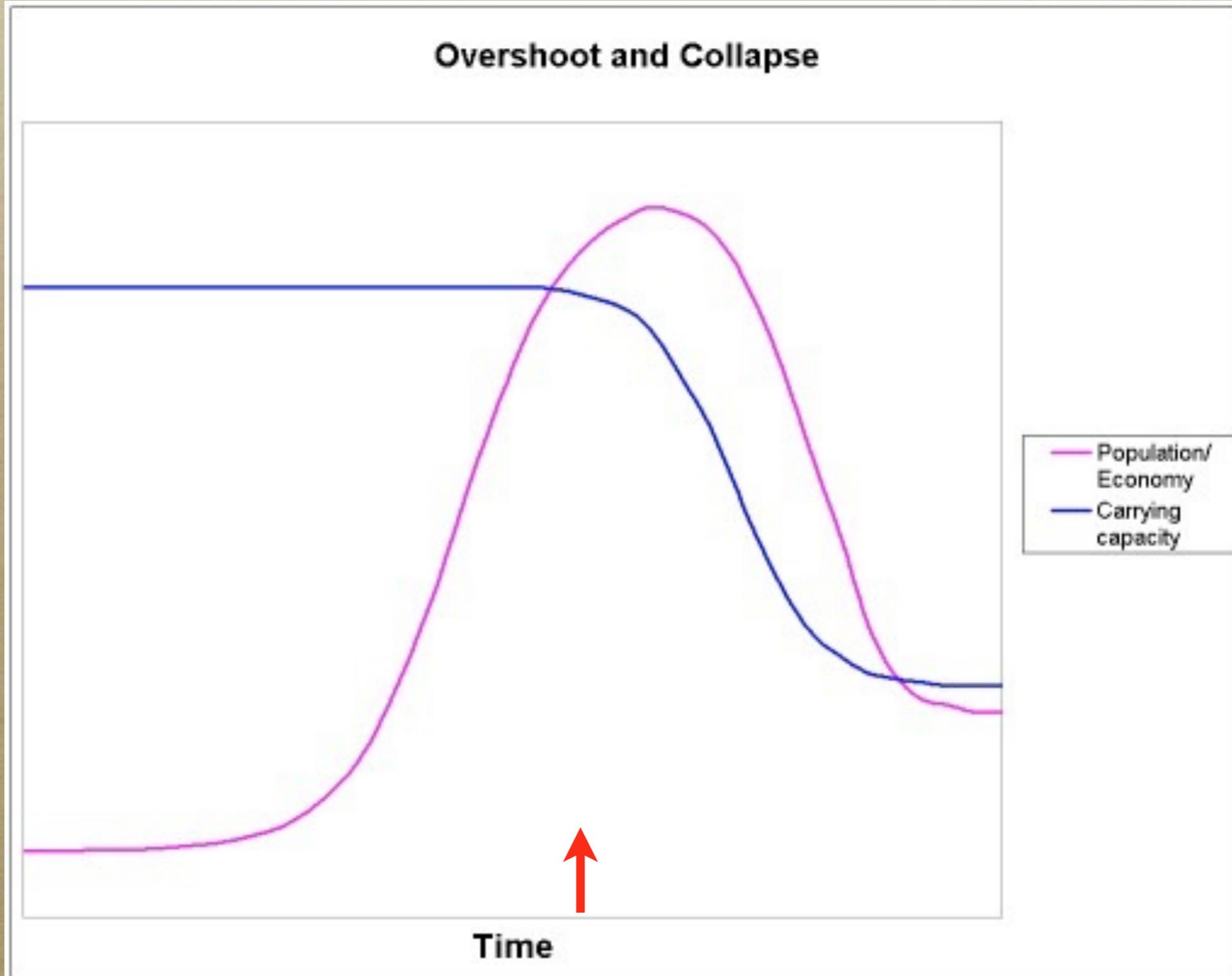


1972

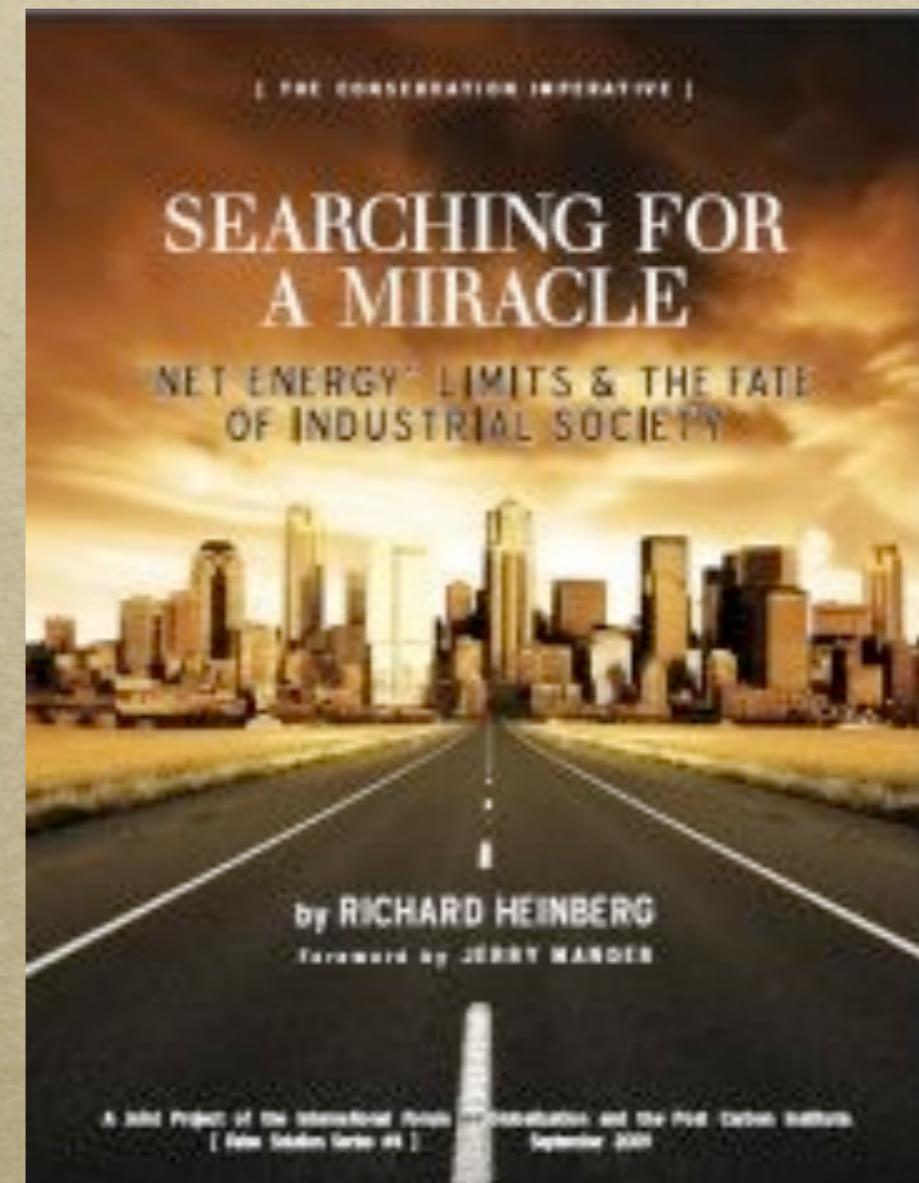
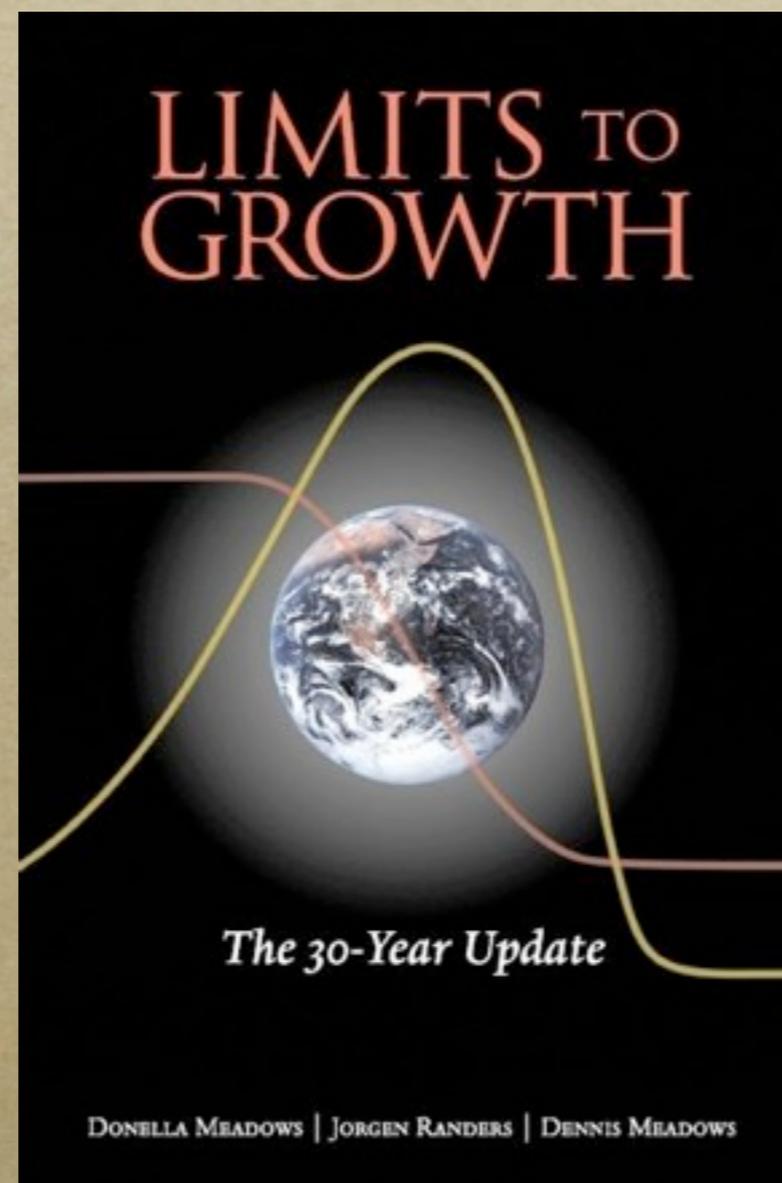
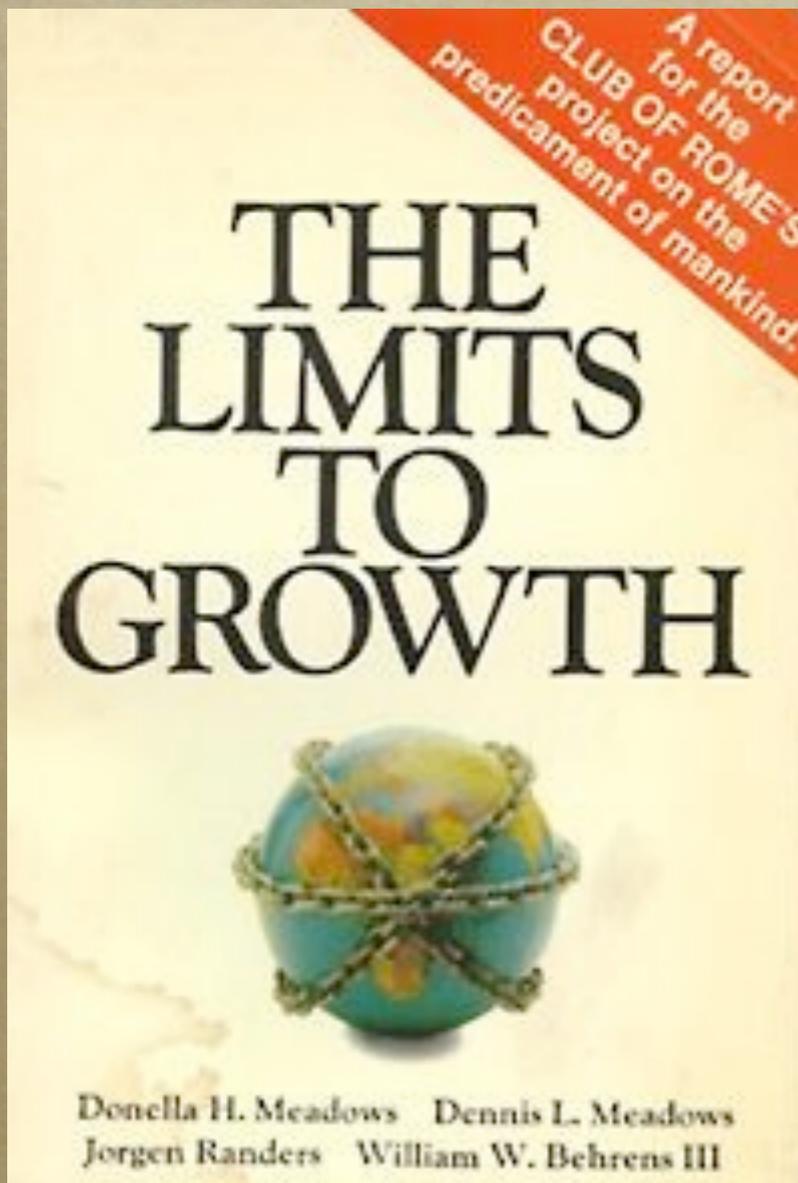
The Limits to Growth - Club of Rome

**We simply cannot keep growing the economy
(current model) forever on a finite planet**

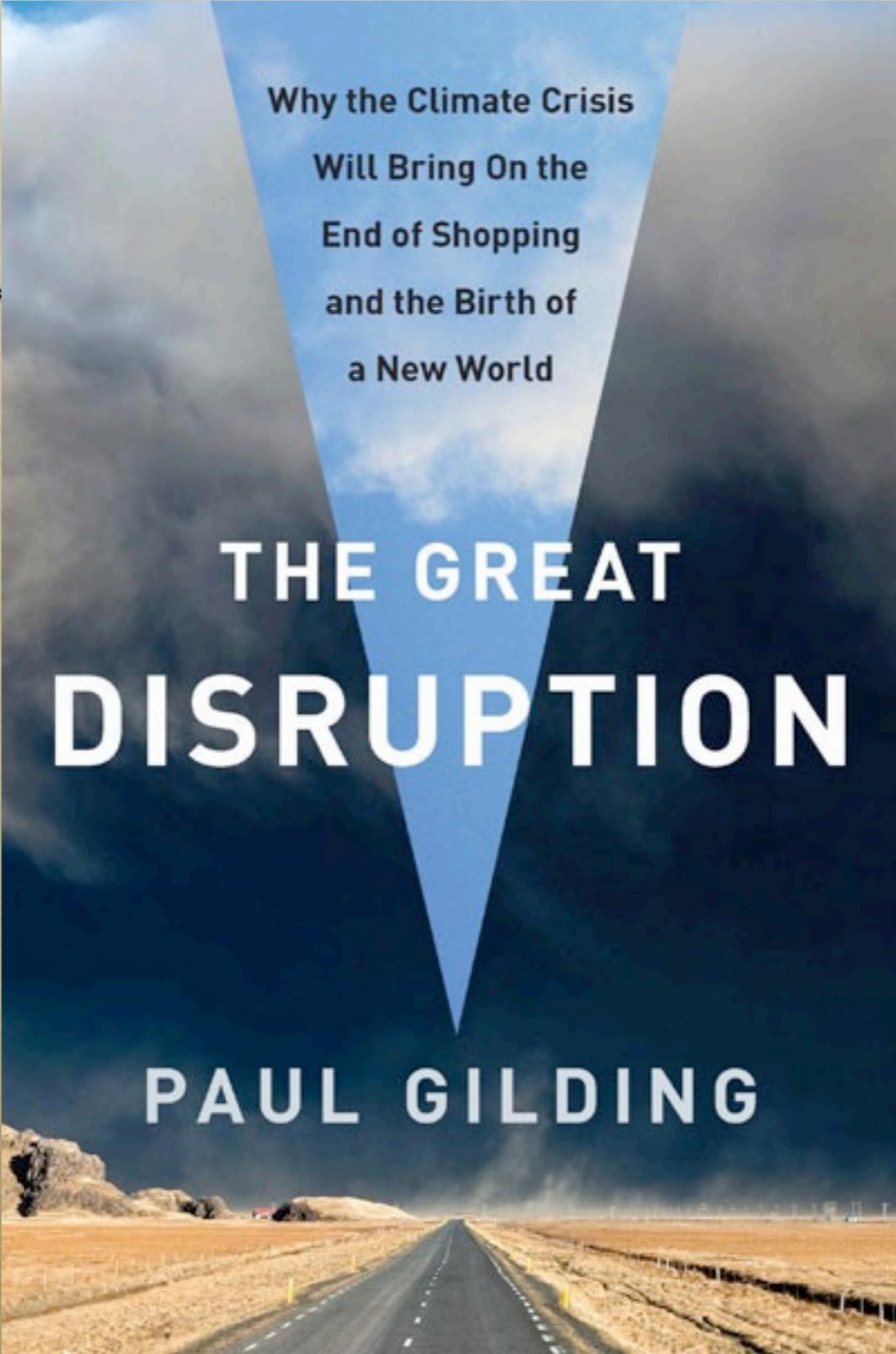
Limits to Growth



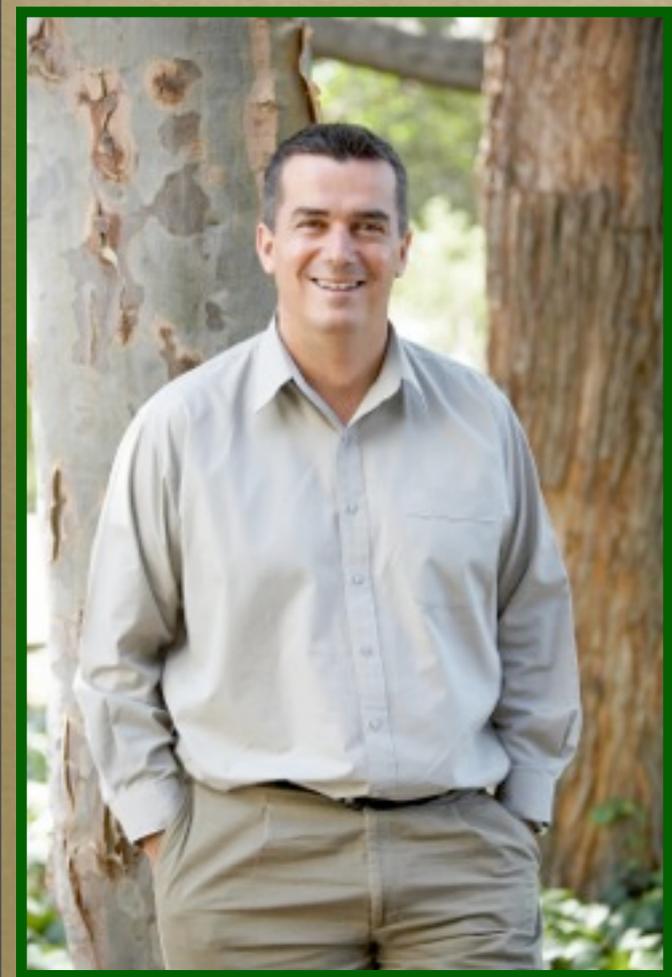
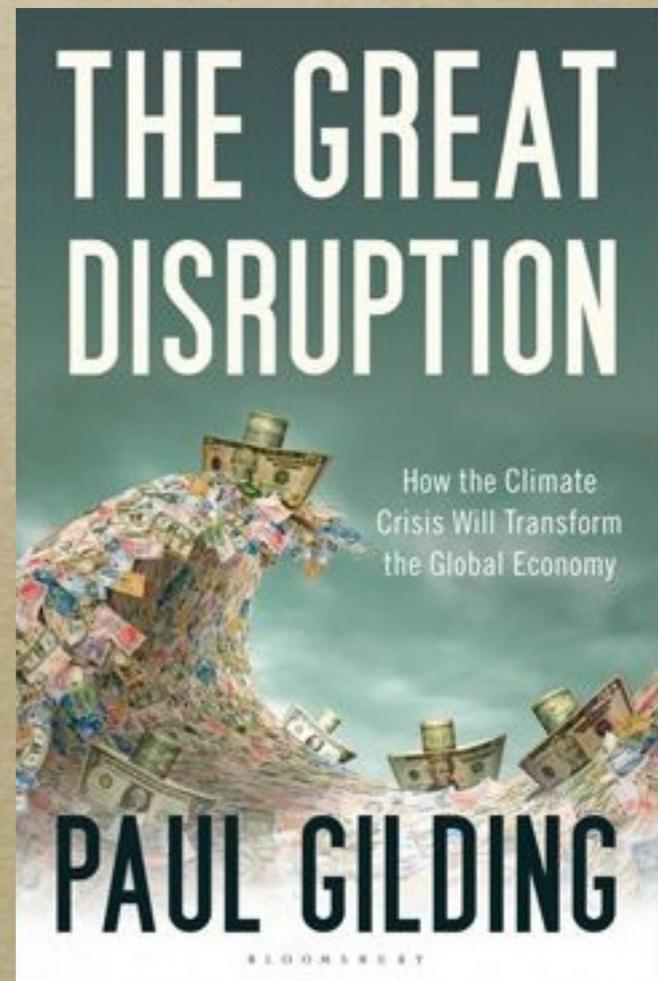
The End of Growth



The End of Growth



The End of Shopping

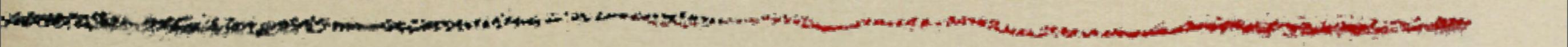


What do we do now?

“You cannot solve a problem with the same thinking that created that problem.”

Albert Einstein

Why is nothing being done?



Why is nothing being done?



We're too small to make a difference;

Why is nothing being done?

- **We're too small to make a difference;**
- **Task is just too big;**

Why is nothing being done?

- **We're too small to make a difference;**
- **Task is just too big;**
- **We are all too comfortable;**

Why is nothing being done?

- **We're too small to make a difference;**
- **Task is just too big;**
- **We are all too comfortable;**
- **Cognitive Dissonance;**

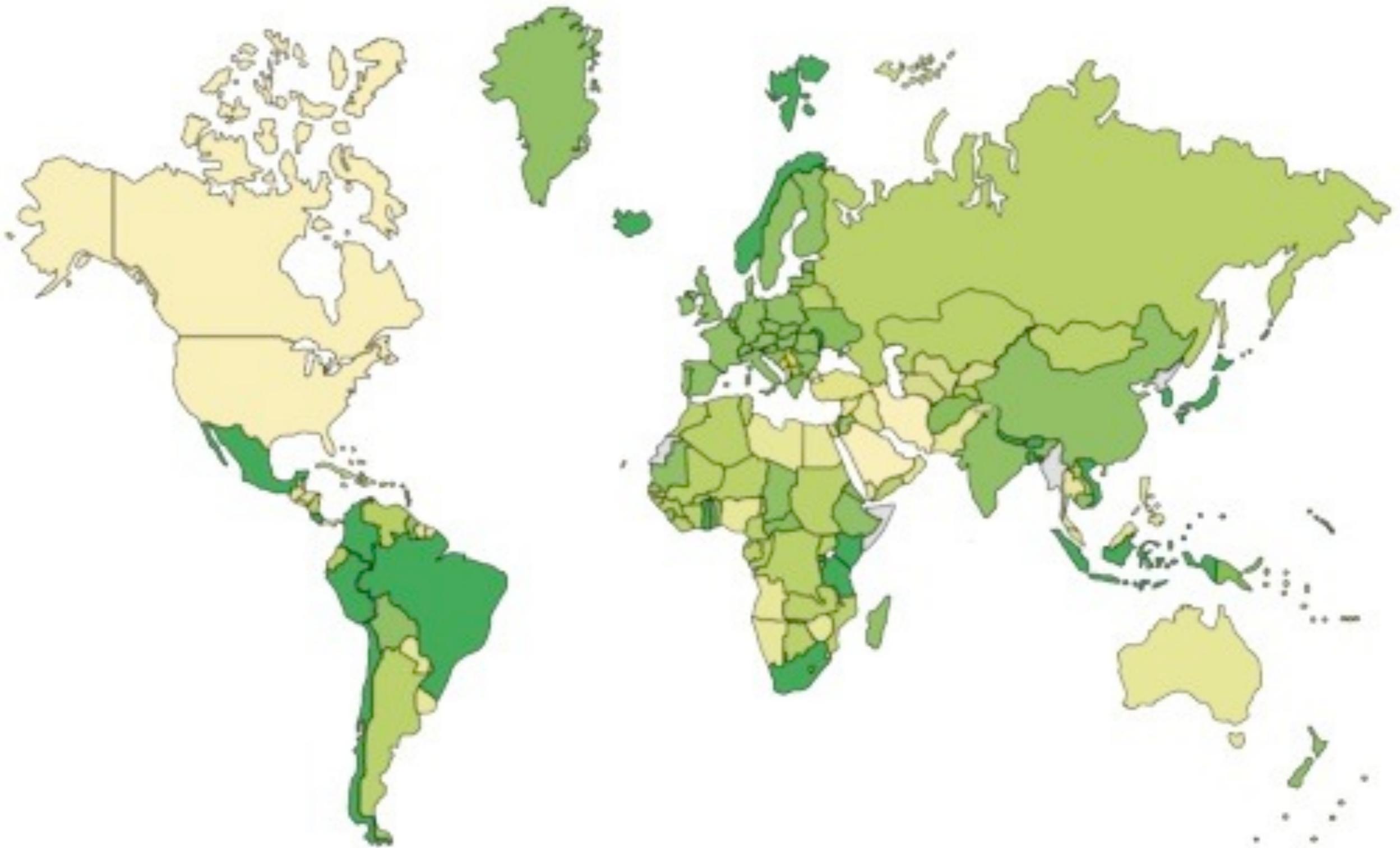
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- **Fear of political blame for increasing costs; and**

Why is nothing being done?

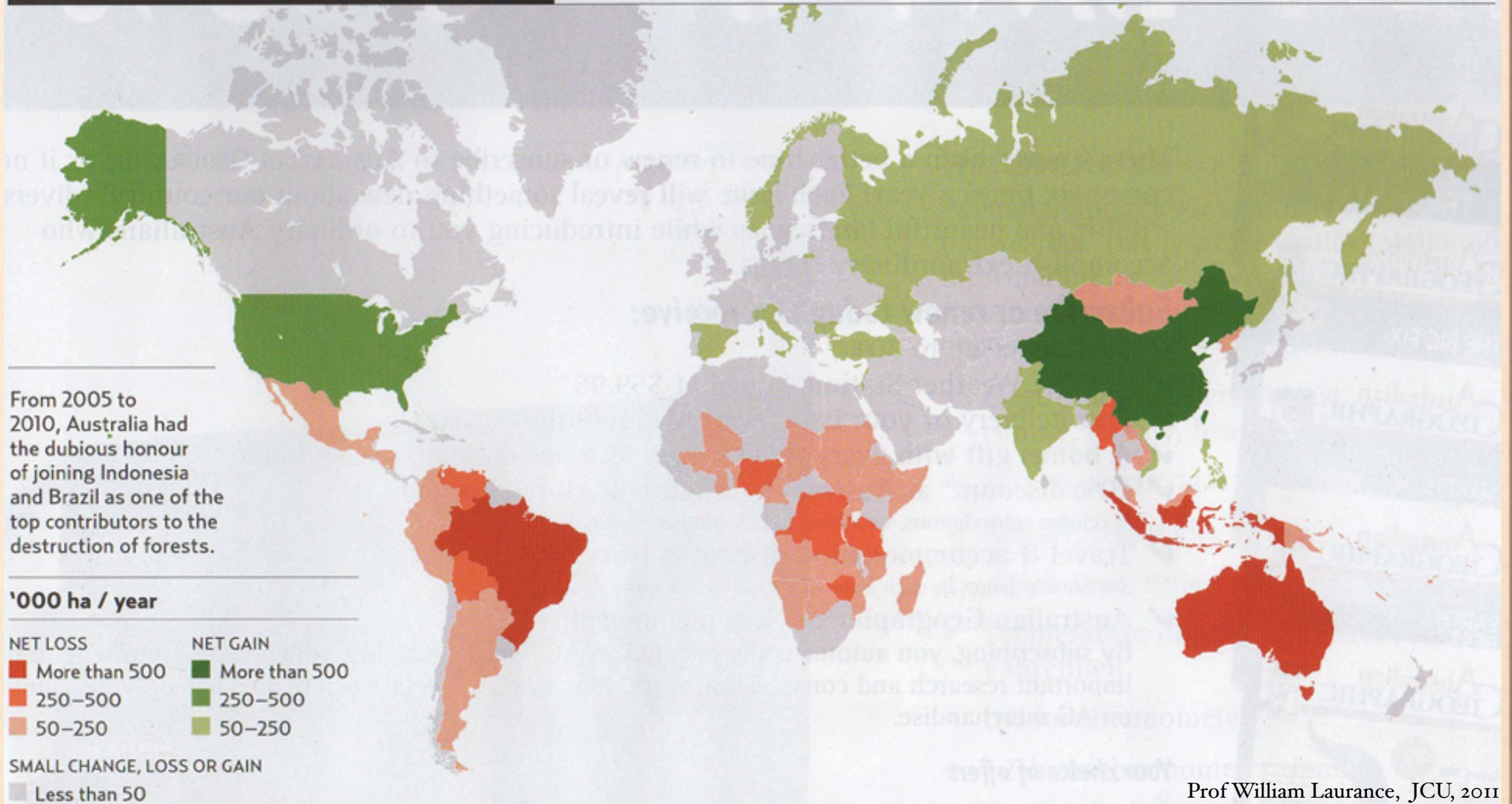
- **We're too small to make a difference;**
- **Task is just too big;**
- **We are all too comfortable;**
- **Cognitive Dissonance;**
- **Fear of political blame for increasing costs; and**
- **Disconnected from nature.**

Who's doing what to address Climate Change?



Who's doing what to address Climate Change?

NET CHANGE IN FOREST AREA 2005–2010



Who's doing what to address Climate Change?

NET CHANGE IN FOREST AREA 2005–2010



Australia, Indonesia, and Brazil world's top deforesters

There is HOPE....



There is HOPE

**Polly
Higgins**



Polly Higgins

Trees have rights too!

OLD THINKING



Planet is inert

=

Commodity

=

Imposed \$\$

Value



NEW THINKING



Planet is living

=

Responsibility

=

Intrinsic Value

Polly Higgins

OLD

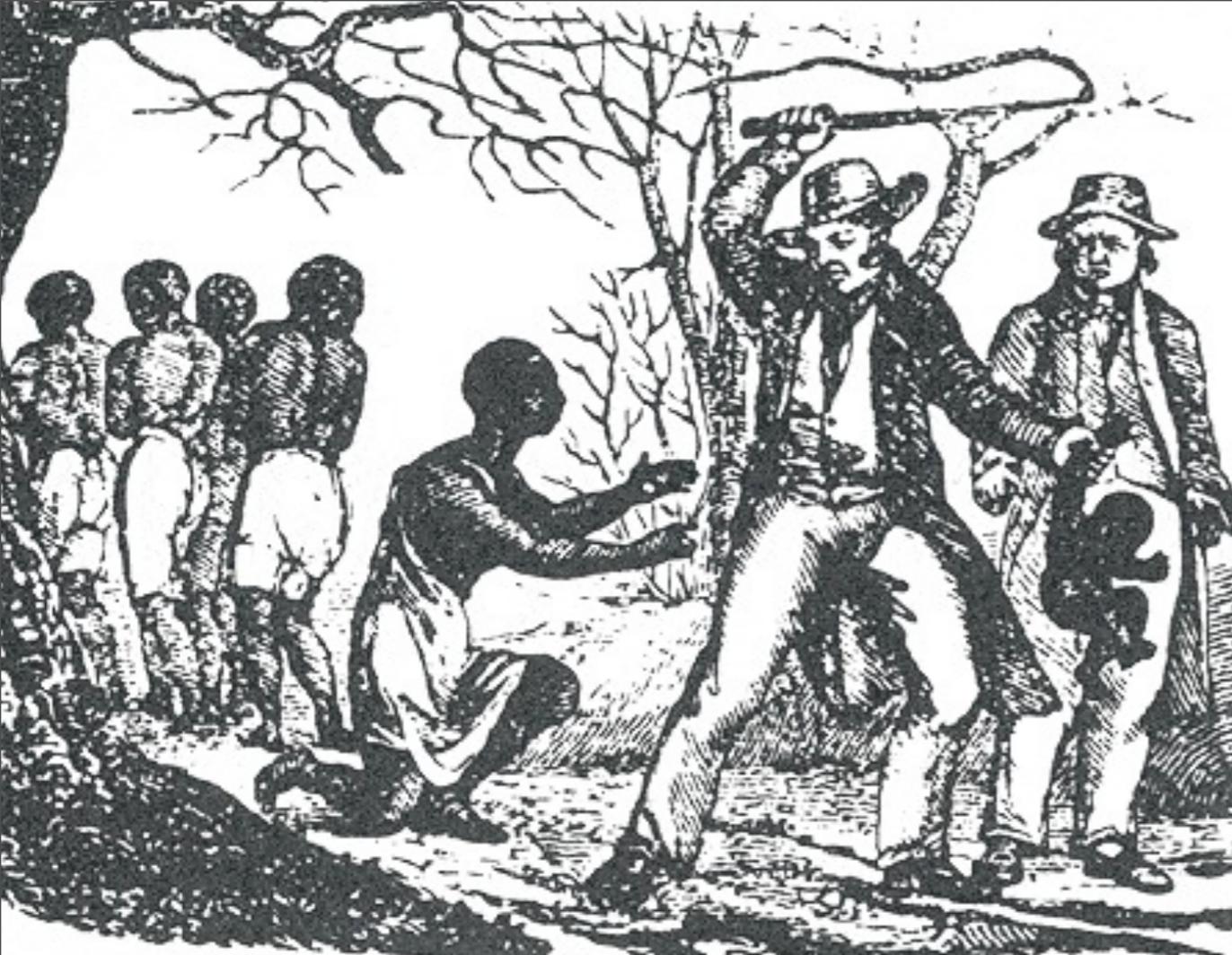
- Permits to pollute;
- BAU;
- Trade;
- Hidden;
- Unaccountable.

NEW

- Laws;
- Finance transition;
- Community governance;
- Transparent;
- Accountable

= SLAVE

= SERVICE



200 years ago.....

-
- Human slavery = energy



TODAY.....

- Planet slavery = energy



**Instead of enslaving humans, we
have enslaved our planet**

**Heavy extractive industry
accounts for 78% of all the
world's man-made GHG emissions**

200 years ago.....

300 companies traded in slaves

INDUSTRY said slavery was a necessity

- society cannot do without it

- to stop would wreck the economy
- to stop would lead to loss of jobs



So INDUSTRY proposed a solution:

- leave it to the market
- self regulation
- limit numbers (cap)
- tradable permits
- pay fines if exceed



TODAY.....

300 companies trade in energy

INDUSTRY says coal is a necessity
- society cannot do without it

- to stop would wreck the economy
- to stop would lead to loss of jobs



So INDUSTRY proposed a solution:

- leave it to the market
- self regulation
- limit numbers (cap)
- tradable permits
- pay fines if exceed

200 years ago, industry's proposals were laughed at - human slavery was outlawed.

But,

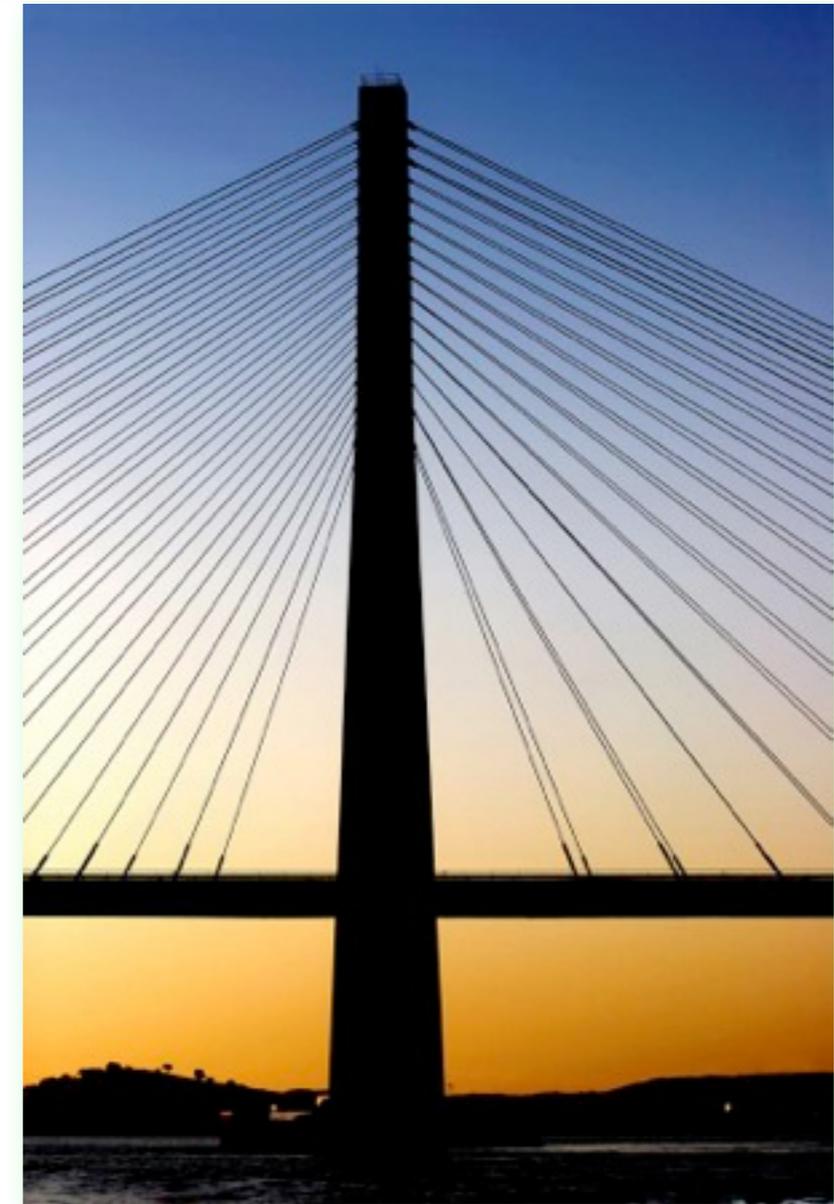
Today, industry's proposals are being implemented - planet slavery continues.

A CHANGE IS INDICATED.....

Welcome to the
Australian Green Infrastructure Council



www.agic.net.au



AGIC Board & Staff



Mark Rogers
Director



David Hood
Chairman



Scott Lambert
Director



Anne Davis
Director



Penny Townley
Director



Nick Apostolidis
Director



Doug Harland



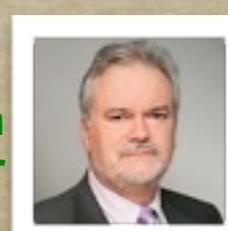
Glenn Hedges
Director



Peter Olsen
Director



Rick Walters
Technical



David Singleton
Director



Scott Losee
Director



Denis Cook
Director

AGIC Foundation Members



ARUP



Mamidis Roberts



CLAYTON UTZ



AECOM



AGIC Foundation Members



ARUP



Mamidis Roberts



CLAYTON UTZ



AECOM



Research Partner



AGIC Organisational Members



TOOL PRINCIPLES

- Cover **environmental, social and economic** dimensions
- Consist of **seven or eight themes** (easy for people to remember)
- Embody/reflect the **National ESD principles**
- Be useful across **all project phases** (design, construct, operate, maintain and decommission or further adapt)
- Names that would be **meaningful within the industry**
- Consider **linkages between themes**
- Able to interface with other processes such as **GRI, Treasury rules, etc**
- **Not too lumpy** – similar level of content within themes
- Categories should **relate to actual outcomes**

Scheme Coverage



Master Planning

Environmental
Impact Assessment

Project Approval

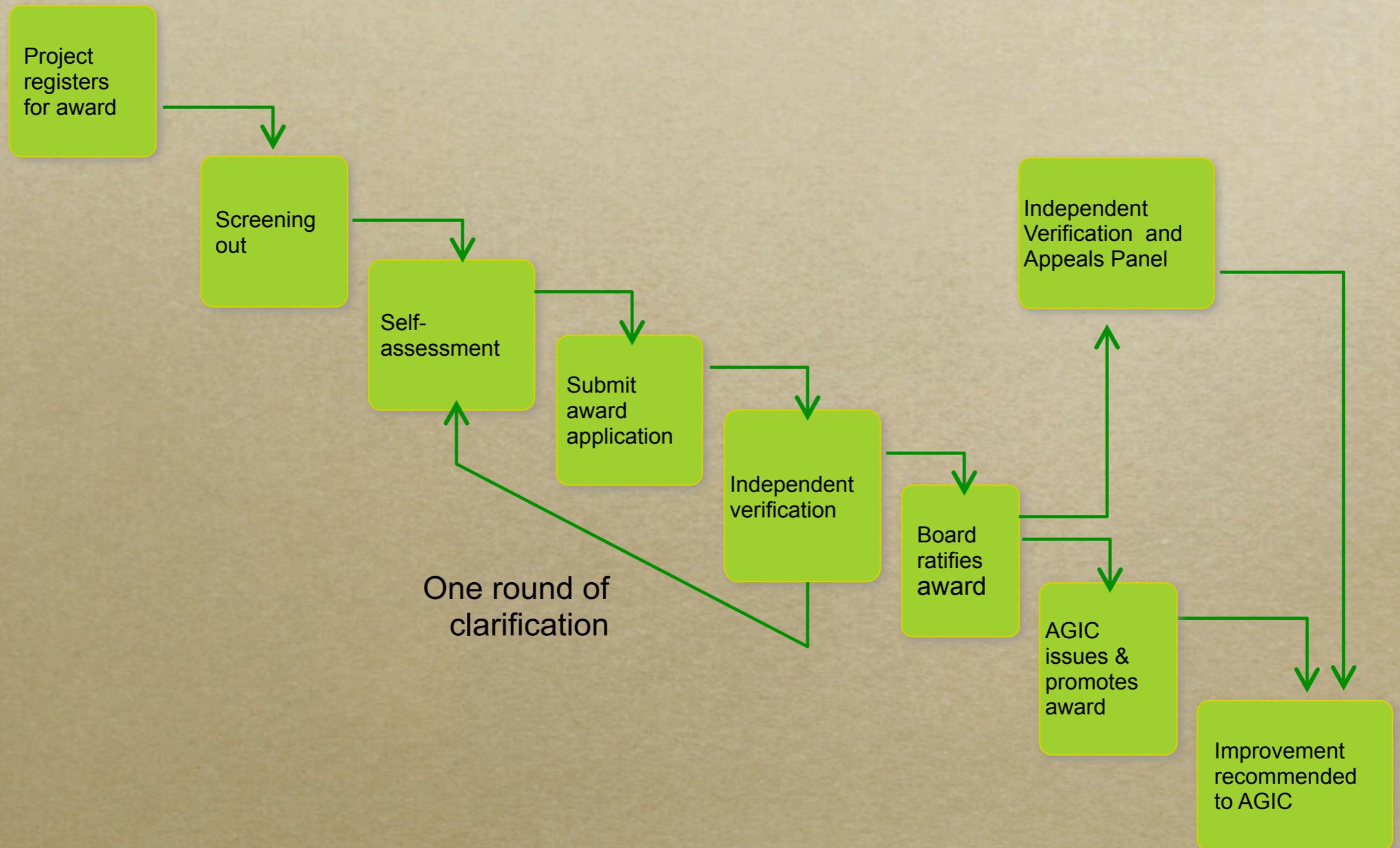
Planning & Design

**Construction &
Commissioning**

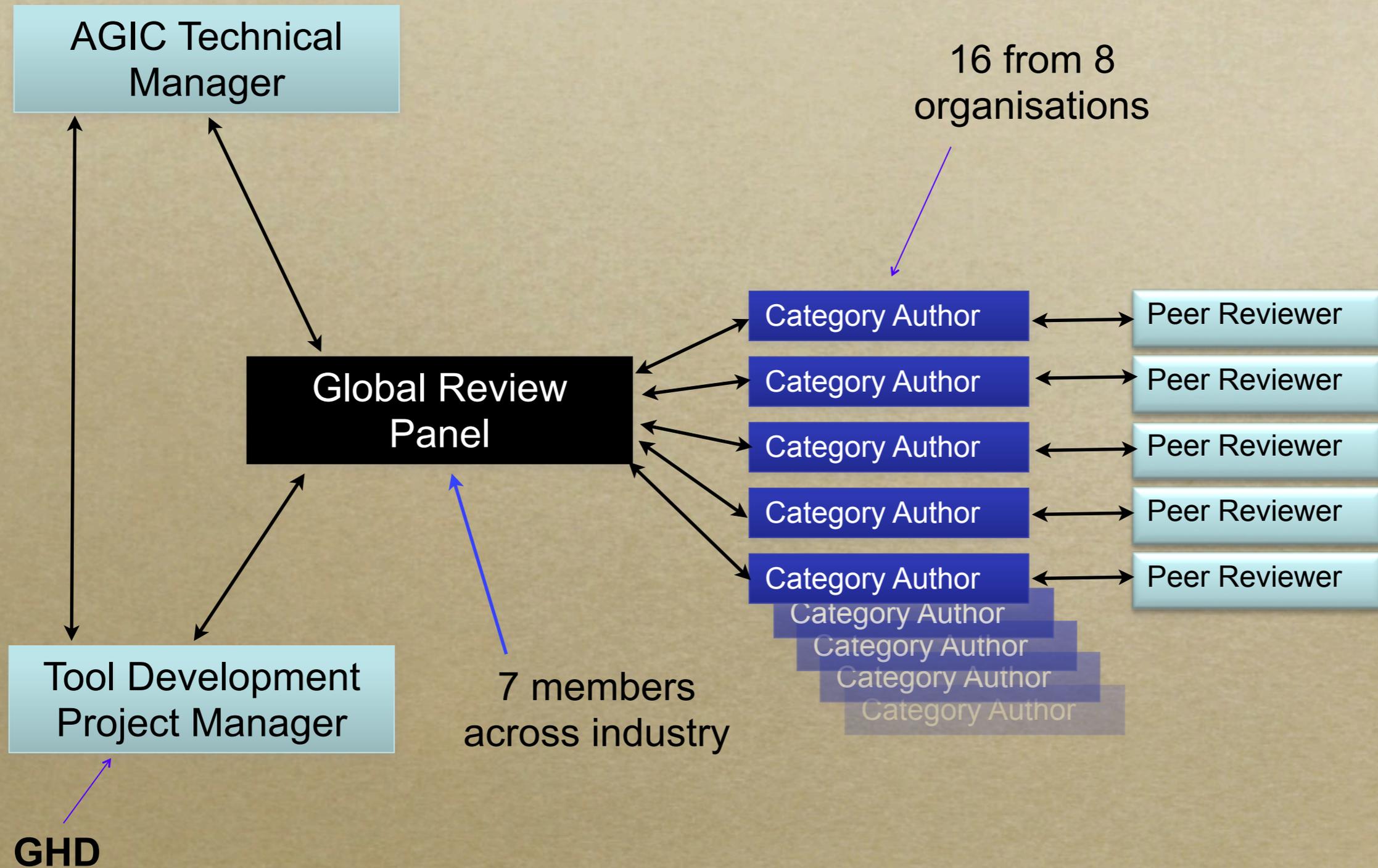
**Operation &
Decommissioning**

**AGIC Rating
Scheme**

Assessment



Scheme Development Team



Benefits of the AGIC Scheme to Infrastructure businesses

BENEFITS

AGIC THEMES	Cost savings	Reputation	Employee engagement	Revenue increase	Risk reduction
PM & governance		✓	✓		
Economic	✓			✓	✓
Resource use	✓				
Emissions	✓				✓
Biodiversity		✓			
People & place		✓	✓		
Workforce	✓		✓	✓	

Note: ✓ indicative only

Giving back WELLNESS



Giving back WELLNESS



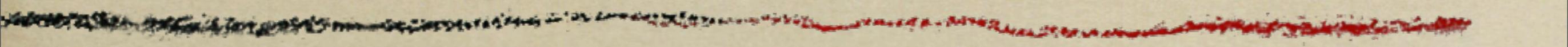
Giving back WELLNESS



Giving back WELLNESS



Does ASIC allow this thinking?



Does ASIC allow this thinking?



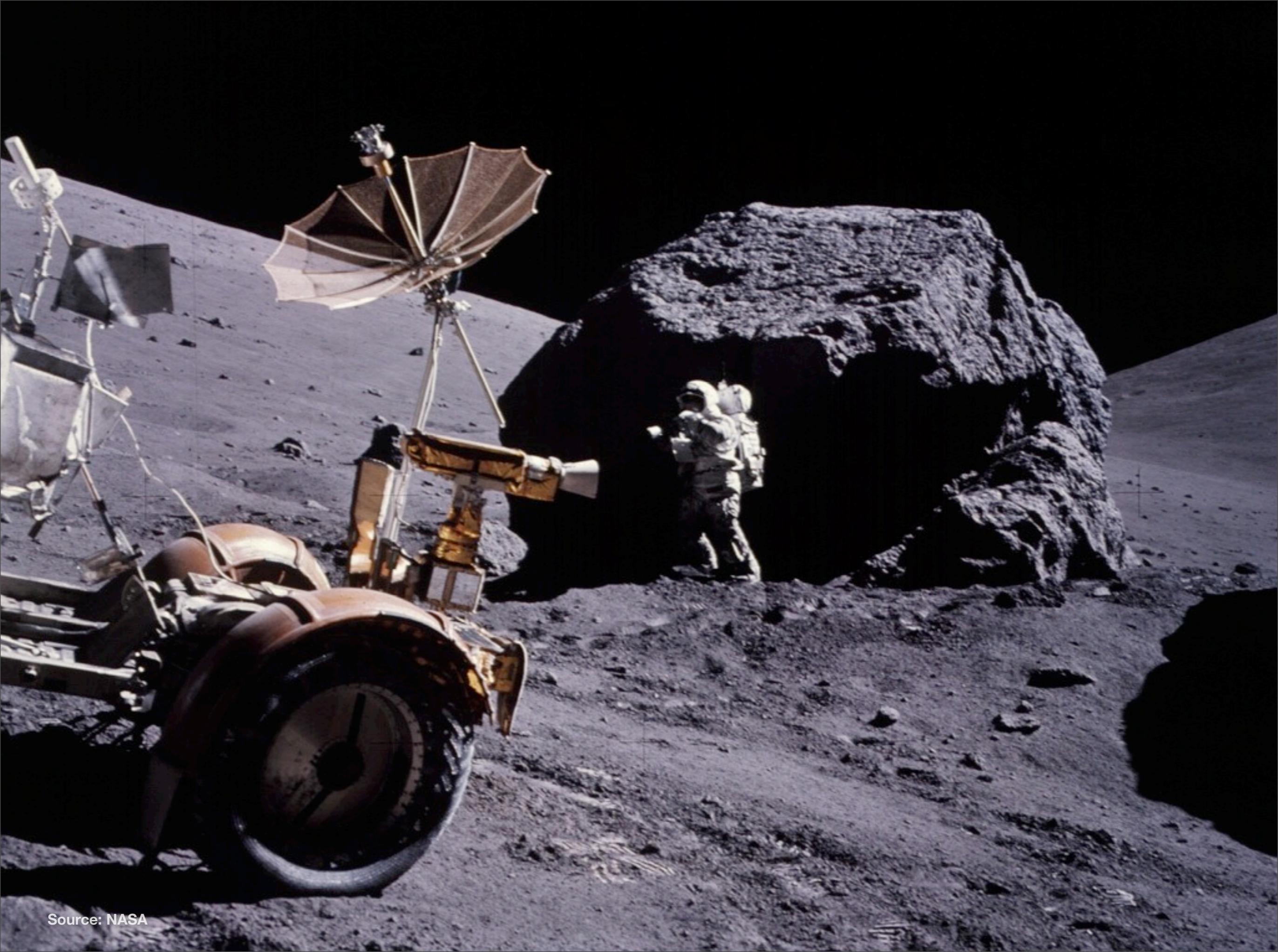
The law says it is the duty of a Board of Directors to maximise shareholder return.....

Does ASIC allow this thinking?

- *The law says it is the duty of a Board of Directors to maximise shareholder return.....*
- *But it does not say when?*

Does ASIC allow this thinking?

- *The law says it is the duty of a Board of Directors to maximise shareholder return.....*
- *But it does not say when?*
- *We must convince shareholders that longer term survival and returns on investment depend on continuing healthy eco-system services, and societal wellbeing.*







**THERE
IS NO
PLANET B**

tck
tck
tck
fair
meeting
ambitious
cuts
binding
treaty

RICH COUNTRIES
PAY YOUR DEBT
TO THE POOR

