

Bouncing forward to a One Planet Region: Could Covid-19 be a social tipping point?

Conversations for a One Planet Region

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Dr. Trevor Hancock

Retired Professor and Senior Scholar

School of Public Health and Social Policy

University of Victoria

Outline

- 1. Covid's unexpected environmental and health benefits**
- 2. It's not the only pandemic**
- 3. Roar forward, not back**
- 4. Social tipping points**
- 5. Towards a One Planet region**

1. Covid's unexpected environmental and health benefits

- **Air quality has improved greatly**
 - **People in India report they can see the Himalayas**
 - **Delhi**
 - **a reduction of up to 44 percent in particulate matter levels was recorded within the first day of the curfew's implementation**
 - **up to 51 percent reduction in NOx levels**
 - **32 percent reduction in CO levels**



- This was the view from our rooftop at home in Punjab India. For the first time in almost 30 years could clearly see the Himalayas due to India's lockdown clearing air pollution. Just amazing!

pic.twitter.com/WmWZYQ68IC

- Manjit K Kang #StayHomeSaveLives

- (@KangManjit) April 3, 2020



This is Dhauladhar mountain range of Himachal, visible after 30 yrs, from Jalandhar (Punjab) after pollution drops to its lowest level. This is approx. 200 km away straight.

**[#Lockdown21](#) [#MotherNature](#) [#Global](#) healing.
pic.twitter.com/cvZqbWd6MR**

- Soul of a Warrior (@Deewalia) [April 3, 2020](#)

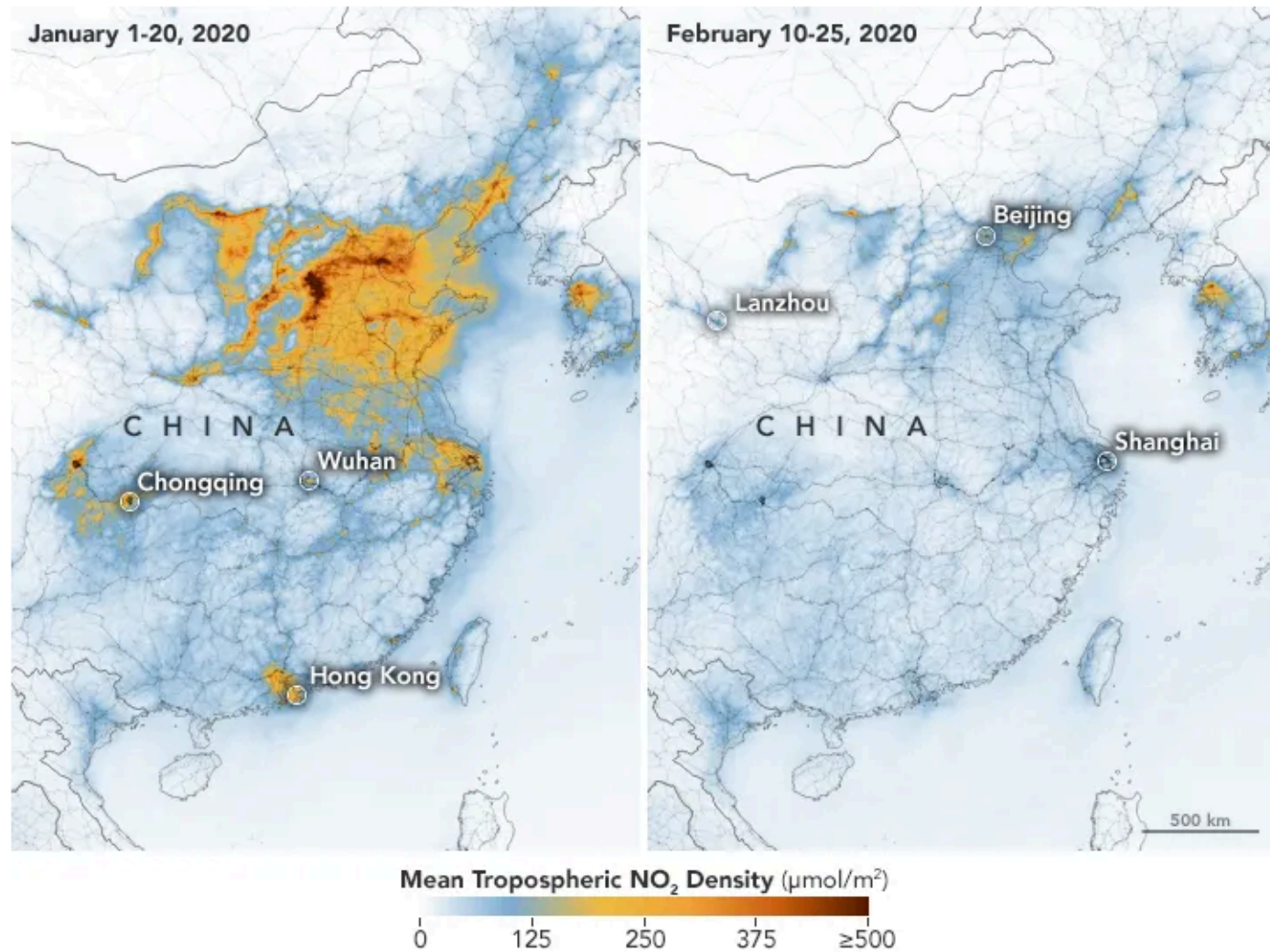
- **China**

- According to NASA, nitrogen dioxide levels across eastern and central China have been 10-30% lower than normal.
- Some estimates for China suggested Covid may save more lives than it takes
- But since early March, levels of nitrogen dioxide pollution have begun to inch back up as the country gets back to work

- **Italy**

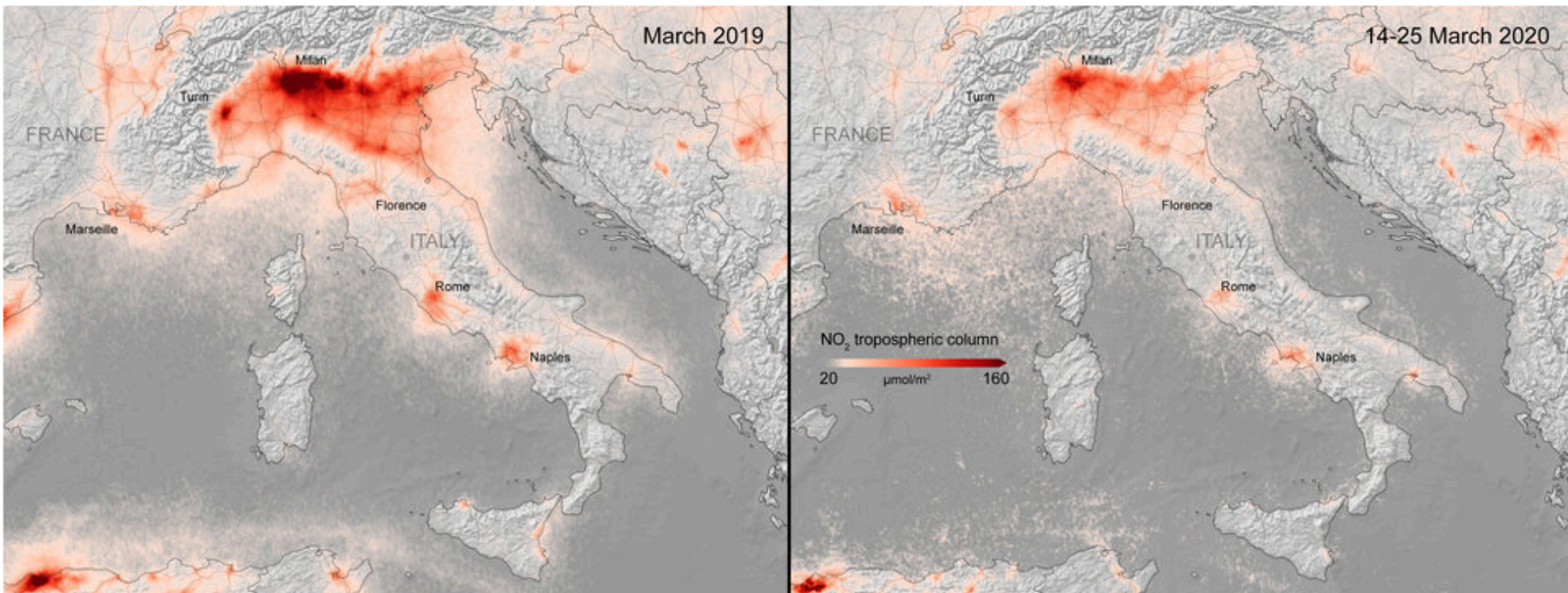
- Since the country went into lockdown on 9 March, NO₂ levels in Milan and other parts of northern Italy have fallen by about 40%.

NO₂, China, Jan – Feb 2020



Maps showing NO₂ values across China from January 1-20, 2020 (before the quarantine) and February 10-25 (during the quarantine). The data from the Tropospheric Monitoring Instrument (TROPOMI) on ESA's Sentinel-5 satellite. Source: NASA: [Airborne Nitrogen Dioxide Plummets Over China](#), 2020.

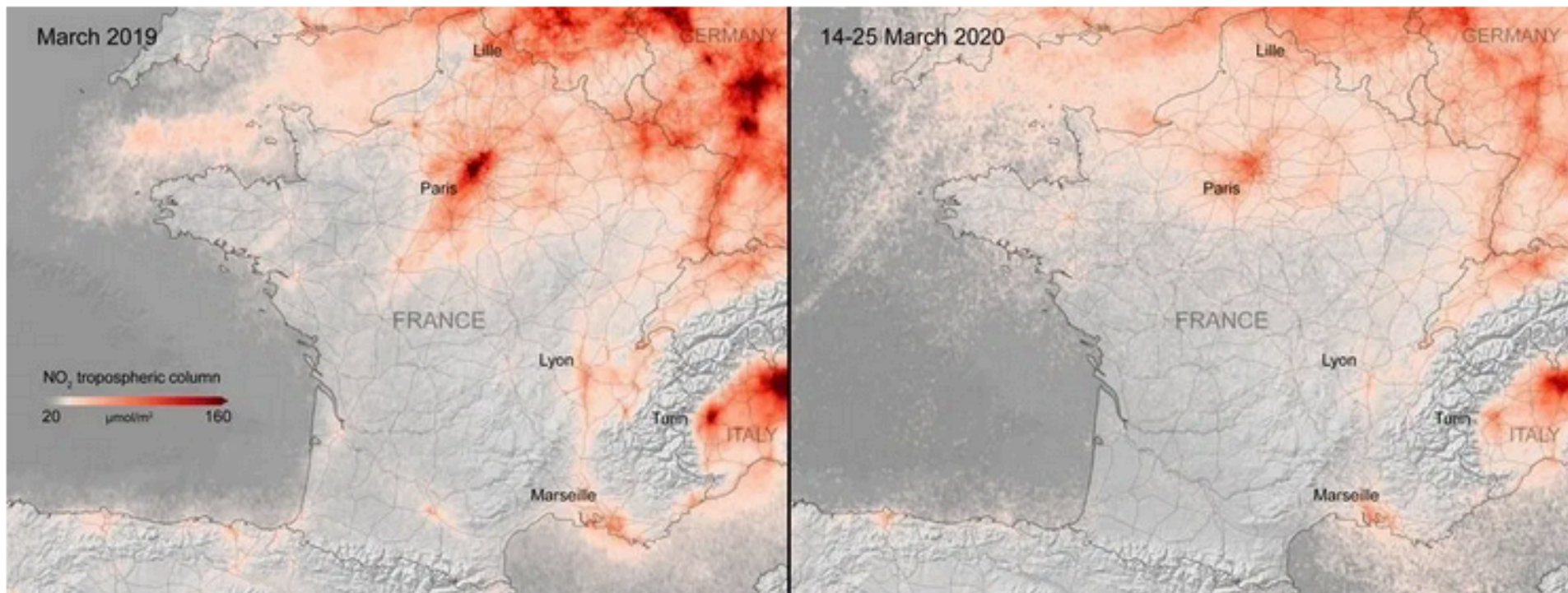
NO_2 , Italy, early and late March 2020



— Nitrogen dioxide concentrations over Italy

ESA, 27 March 2020

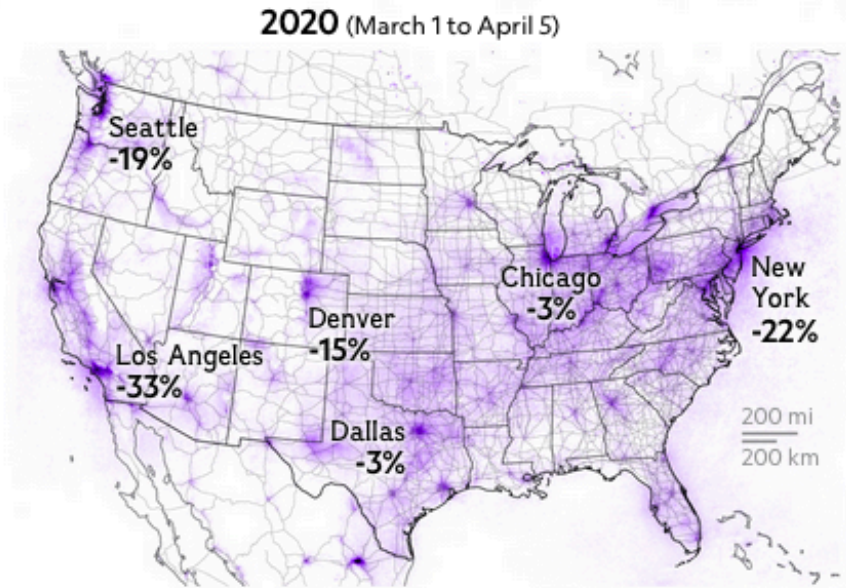
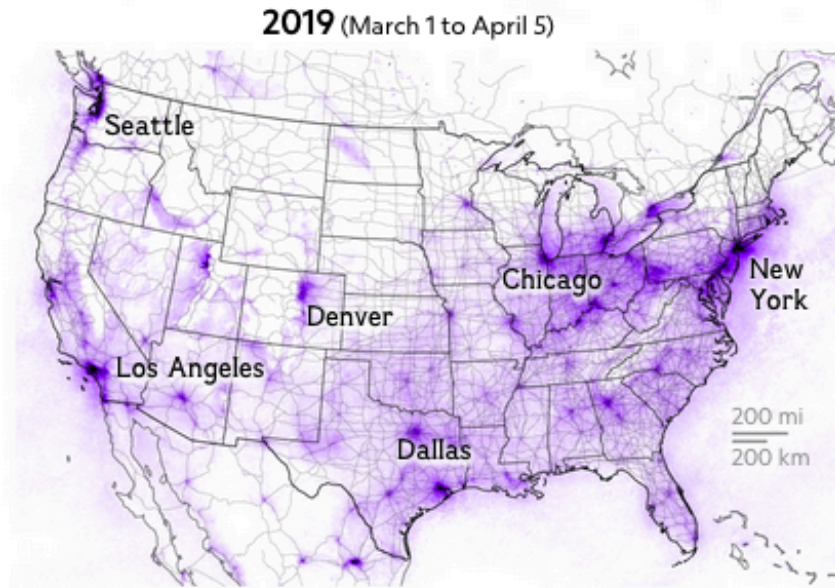
NO₂, France, early and late March 2020



Nitrogen dioxide concentrations over France. Maps: ESA – [Coronavirus lockdown leading to drop in pollution across Europe](#), 2020.

Mark Altaweel, April 1, 2020 GIS Lounge
(ESA's Sentinel-5 satellite)

NO₂, USA, March 1 – April 5 2019 and



RYAN MORRIS, NGM STAFF.
SOURCE: SENTINEL-5P SATELLITE DATA PROCESSED BY DESCARTES LABS

More NO₂ pollution →

National Geographic, 8 April 2020
From Sentinel-5P satellite data

“I really do quite enjoy clean air”

- **People so accustomed to pollution they hardly think about it may realize, “Actually, I really do quite enjoy clean air: Do you think we could get it, or keep it?”**
- **“There’s a chance to really get people to stop, take a deep breath,” and reflect on questions like ‘How was your asthma during this period?’”**

**Simon Birkett, founder and director of Clean Air in London
- In National Geographic, 8 April 2020**

Smell the roses, hear the birds!

- **“The air quality is SO much better here (it is usually the WORST!) and I can hear so many more songbirds in the morning. I'm loving it”.**

**Former RRU student, Kathmandu, Nepal
(courtesy Rick Kool, RRU)**

Motor vehicle crashes are down

- **France**
 - deaths from road accidents were down 39.6% across the country in March compared to last year.
 - The number of accidents was also down 43%
- **USA**
 - California's traffic accidents have fallen by half since March 19
 - Washington state, March 16-20
 - Accidents declined by 67%
 - Serious injuries declined by 78% — from 32 to 7
 - Fatal accidents from 12 to 0

Global GDP is shrinking

- **CASSE's GDP Meter was re-set on March 1, 2020 to reflect the COVID-caused recession. Until further notice, it will run in reverse at a rate of 20% per annum.**
- **Why is this reversal of GDP growth a good thing? See**

**The Silver Lining of the COVID-Caused
Recession is Supra-Economic**
**By Brian Czech, *The Steady State Herald*,
March 24, 2020**

- **“Biodiversity loss is as solid of an indicator of economic activity as GDP itself. Given the fundamental conflict between economic growth and wildlife conservation, wildlife wins when the economy slows.”**

Brian Czech,
The Steady State Herald,
March 24, 2020

2. It's not the only pandemic

Covid-19 will kill

- **Canada (PHAC, 9 April)**
 - Best case – 11,000 – 22,000 deaths
 - Worst case – between 300,000 and 350,000
- **Global (Imperial College, 26 March)**
 - Best case - suppression – 1.85 - 9.3 million deaths
 - Medium case – Mitigation – 20 million
 - Worst case – 40 million

The good news is . . .

- . . . it will probably do it just once
- . . . unless it becomes endemic, like flu

The other infectious disease pandemics

- **Vaccine-preventable disease**
 - 1.5 million deaths annually
- **TB**
 - 1.5 million people died from TB in 2018 (WHO)
- **Malaria**
 - 405,000 deaths in 2018 (WHO)
- **Diarrhoea kills around 525,000 children under five (WHO, 2017)**
- **HIV/AIDS**
 - estimated 770,000 deaths in 2018 (WHO)

EVERY YEAR

The poverty pandemic

**“Social injustice is killing
people on a grand scale.”**

WHO CSDH, 2008

EVERY YEAR

The industrial society pandemics

- “The world faces an **air pollution ‘pandemic’**”.
 - outdoor human-made air pollution, mainly from fossil fuel use, caused **an extra 8.8 million premature deaths a year in 2015**
 - “five and a half million deaths worldwide a year are potentially avoidable” - European Society of Cardiology
- The **global road death toll** has already reached **1.35 million per year** and is on course to triple to **3.6 million per year by 2030**.
 - In the developing world, where **this pandemic** has hit hardest, it will become the fifth leading cause of death

The industrial society pandemics/2

- “diseases caused by **pollution** were responsible for **an estimated 9 million premature deaths in 2015** - **16%** of all deaths worldwide”
 - Much of it due to air and water pollution
- But we have not quantified the health impacts of many significant chemical pollutants
 - Emerging, but still unquantified, health effects of known pollutants
 - Inadequately characterised health effects of emerging pollutants.
- So **9 million deaths “could thus be the tip of a much larger iceberg”**.

It is a bad idea . . .

- To address the consequence of one pandemic by worsening the impact of other pandemics

3. Roar forward, not back

**“Our country will
come roaring back”**

**Justin Trudeau
9 April 2020**

**Resilience means
bouncing forward,
not back to the way
we were before**

The health problem is not recession, its expansion

- “population health did not decline and indeed improved during the Great Depression of 1930–1933”
- death rates “decreased for almost all ages, and gains of several years in life expectancy were observed for males, females, whites and non-whites—with the latter group being the group that most benefited.”
- “years of strong economic growth are associated with either worsening health or with a slowing of secular improvements in health”

Tapia Granados and Diez Roux, 2009

- **“The fact that population health tends to evolve better in recessions than in expansions was first noted decades ago, but was largely ignored until recently, when several studies reported this relationship using data from the latter half of the twentieth century.”**

Tapia Granados and Diez Roux, 2009

Why does economic expansion harm health?

- **Increases in smoking and alcohol consumption**
- **Reductions in sleep**
- **Increases in work stress related to overtime and faster and more strenuous labor**
- **Increases in traffic injuries**
- **Increases in industrial injuries**
- **Increases in atmospheric pollution**

Tapia Granados and Diez Roux, 2009

Perhaps also

- **increases in social isolation,**
- **lack of home care**
- **decreases in social support**

as a result of

- **greater employment,**
- **increased work demands**
- **work-related migration**

Tapia Granados and Diez Roux, 2009

This model predicts

- **A decline in life expectancy of 0.12 years with 5% GDP growth**
- **An annual increase of 0.88 years in life expectancy in years of zero economic growth**
- **An annual increase of 1.88 years in life expectancy in years of 5% economic decline**

Tapia Granados and Diez Roux, 2009



Do we really want to roar back to

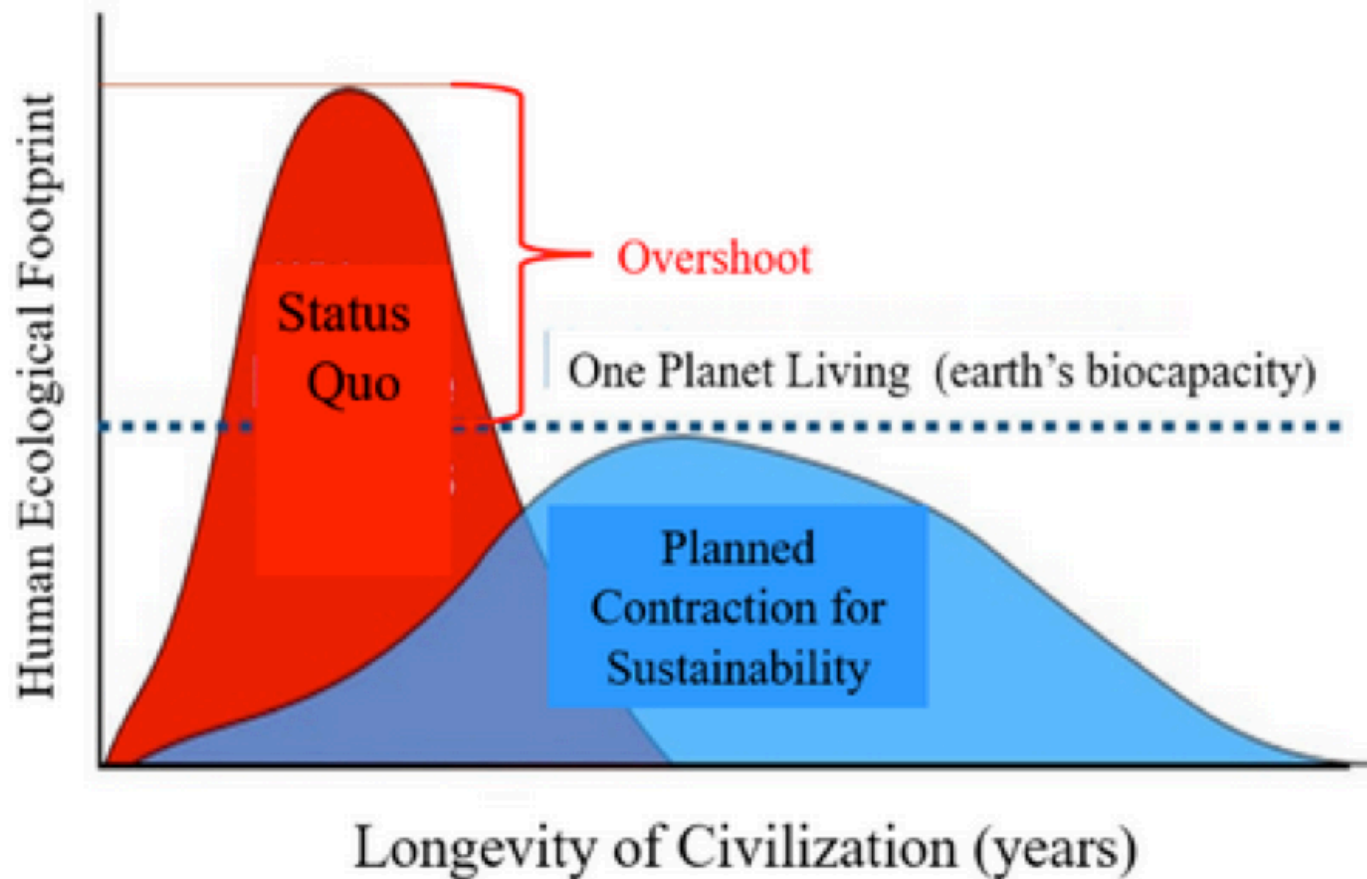
- Expanding fossil fuel use and rising CO₂ levels
- Poor air quality that kills and sickens millions and impairs the quality of life
- Motor vehicle crashes that kill and injure millions
- Pollution that kills and sickens millions
- Busy, stressful lives
- Hastening resource depletion
- Accelerating species extinctions.

“Normal is the pathology”

William Rees,
6 April 2020,
The Tyee

A curve that *really* needs flattening

Managing the Plague



William
Rees,
2020

4. Social tipping points

“we need to reach a social tipping point, before we reach a planetary one.”

Will Steffen, 5 Dec 2019

8 possible social tipping points

1. Our quality of life can be better, having less and being less busy is not so bad
2. We pay a huge price for our way of life –
 1. and many people far away pay a much greater price for our way of life.
3. Exponential growth is a really bad idea – Whether its viruses or CO₂ molecules

- 4. Social solidarity matters and the neoliberal cult of individualism, the notion that ‘you are on your own’, is toxic**
- 5. Government matters, and the Canadian notion of ‘peace, order and good government’ completely out-performs the US model, which some are likening to a failed state**

- 6. Local matters a lot – local stores and businesses, neighbours, local parks etc.**
- 7. If we can act swiftly and massively on Covid-19, we could act just as massively, but with a bit more time for thought and planning, to the even greater but slower crisis of human-induced global ecological change, including climate change.**

- 8. Nature bats last, we should not rely upon
outwitting and out-performing nature**
- “We learn anew that in nature we’re but
temporary components of perpetual systems
much bigger than ourselves”. (Chicago Tribune
Editorial Board, reprinted in TC)**

Creating a virtuous cascade

- We know from climate change science we face the possibility of a tipping point triggering a cascade of further tipping points
- How do we trigger a cascade of positive changes in society?

Interventions for Rapid Global Change

The Cascade Institute is a Canadian research centre addressing the full range of humanity's converging environmental, economic, political, and technological crises. Using advanced methods for mapping and modeling complex global systems, Institute researchers will identify, and where possible help implement, high-leverage interventions that could rapidly shift humanity's course towards fair and sustainable prosperity.

The Institute is located at **Royal Roads University** in British Columbia, a leader in training professionals to apply creative solutions to entrenched problems. Its director is **Thomas Homer-Dixon**, an award-winning scholar and author with deep experience in using complexity science to anticipate, analyze, and respond to global threats.

[Learn More about the Institute](#)

- **In today's complex, hyper-connected global system, a series of precisely targeted and timed interventions could plausibly produce a “virtuous cascade” of change that helps flip humanity onto a far more positive path.**

The Cascade Institute

<https://cascadeinstitute.org/about/scientific-foundations/>


5. Towards a One Planet region

The emerging 'new normal'?

- **Telecommuting**
- **Buy local, grow local**
- **Consume less**
- **Social solidarity**
- **Time outdoors**
- **GAIN?**

Radical reforms are needed

“Radical reforms — reversing the prevailing policy direction of the last four decades — will need to be put on the table. Governments will have to accept a more active role in the economy. They must see public services as investments rather than liabilities, and look for ways to make labour markets less insecure. . . .



“Redistribution will again be on the agenda; the privileges of the elderly and wealthy in question. Policies until recently considered eccentric, such as basic income and wealth taxes, will have to be in the mix.”

- **Which radical red rag wrote such dangerous piffle?**
- **The Editorial Board of The Financial Times, 3 April 2020**

Speed up clean energy transitions

- “We have an opportunity to put, at the heart of stimulus packages, measures to speed up clean energy transitions and to boost energy resilience, so countries and industries come out of this crisis in a better position than they were before,” says **Faith Birol, executive director of the International Energy Agency.**

National Geographic, 3 April 2020

Towards a different economy

- **“We simply cannot return to where we were before Covid-19 struck, with societies unnecessarily vulnerable to crisis. . . . Now is the time to redouble our efforts to build more inclusive and sustainable economies and societies that are more resilient in the face of pandemics, climate change and other global challenges. The recovery must lead to a different economy.”**

Antonio Guterres, UN Secretary General,
The Guardian, 1 April 2020,

**“if we can change
everything for one kind
of emergency, why not
do it for another?”**

Eric Doherty

**We need smart
resilience,
not stupid resilience**

Possible discussion questions

- What are the positive changes you have seen that we need to build on?
- What are the negative changes you have seen we need to counteract?
- How do we move the One Planet agenda forward?

Contact

Dr. Trevor Hancock

Thancock@uvic.ca

Website:

<https://trevorhancock.org>