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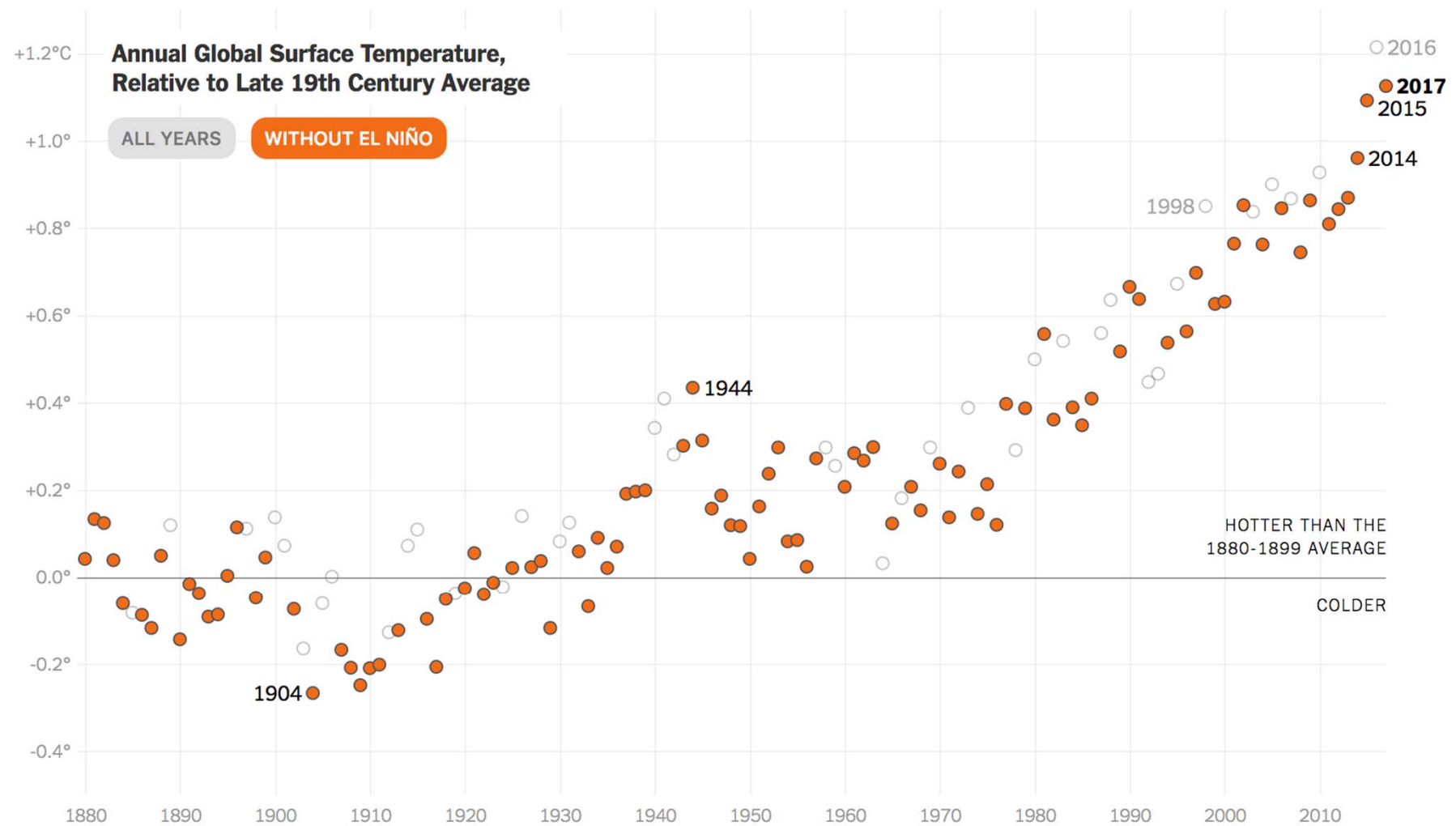
Australasian Faculty of
Public Health Medicine

William Redfern Oration

Climate change – disruption, risk, and opportunity

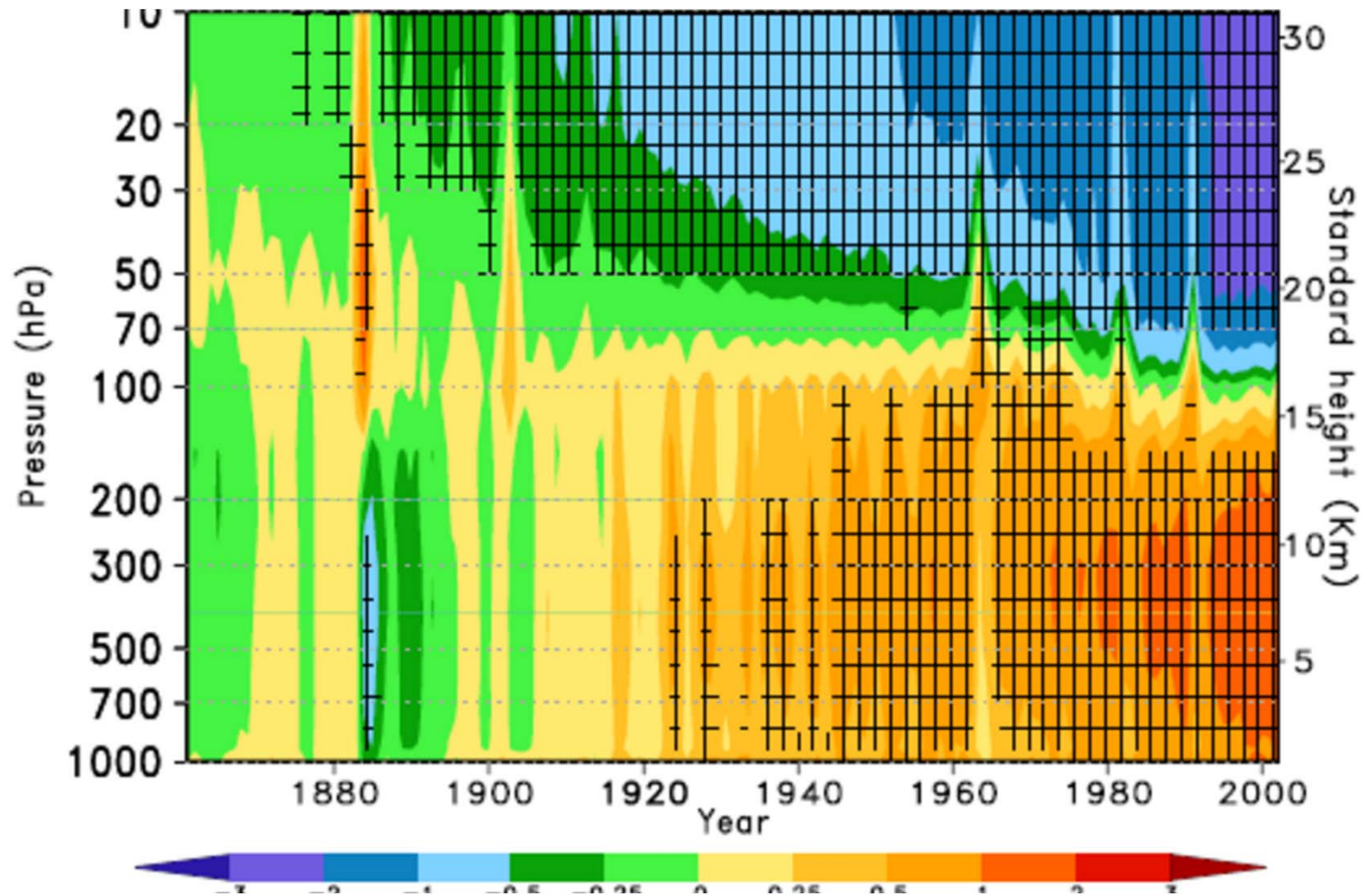
Alistair Woodward
Epidemiology and Biostatistics
University of Auckland



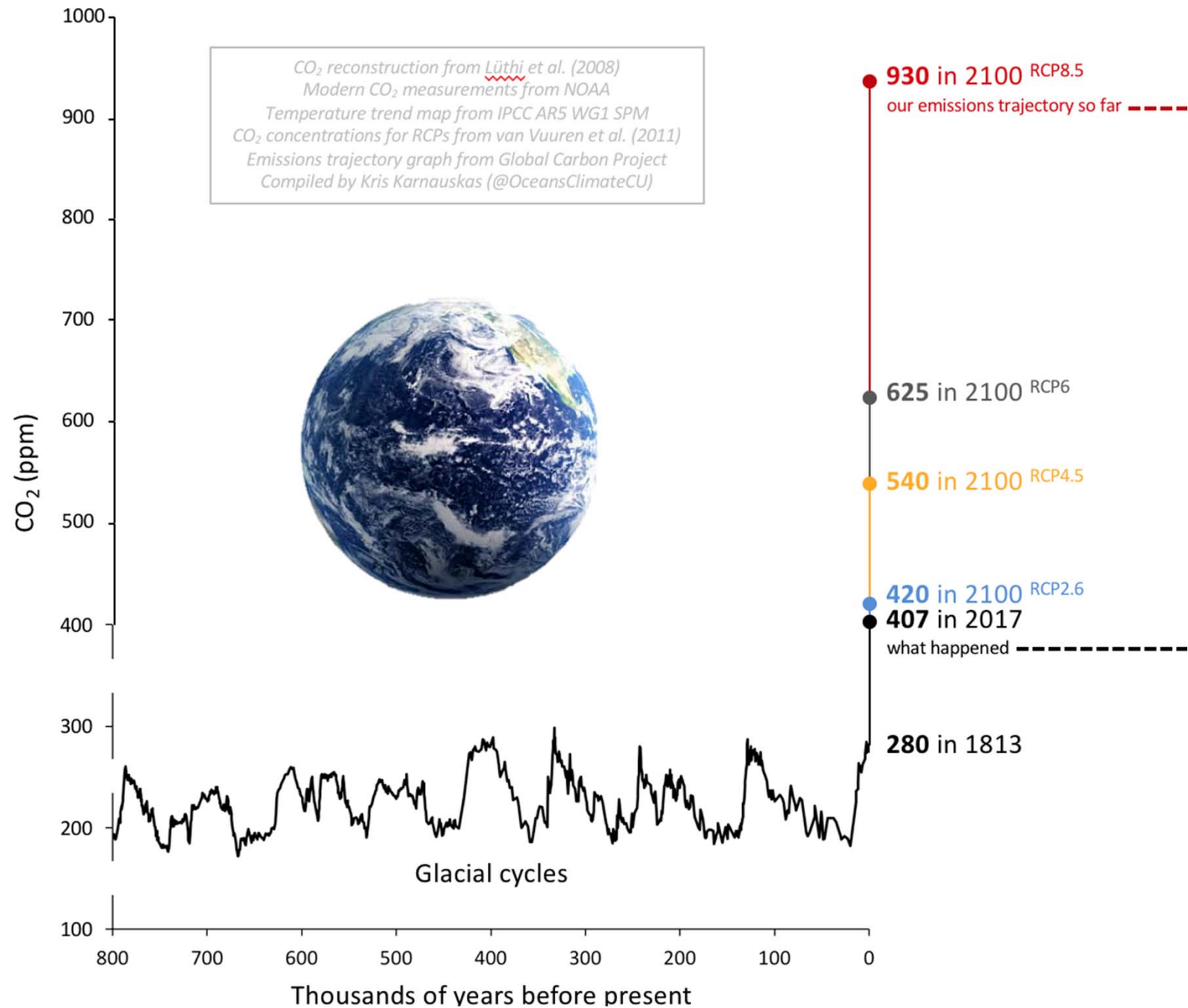


Source: NASA

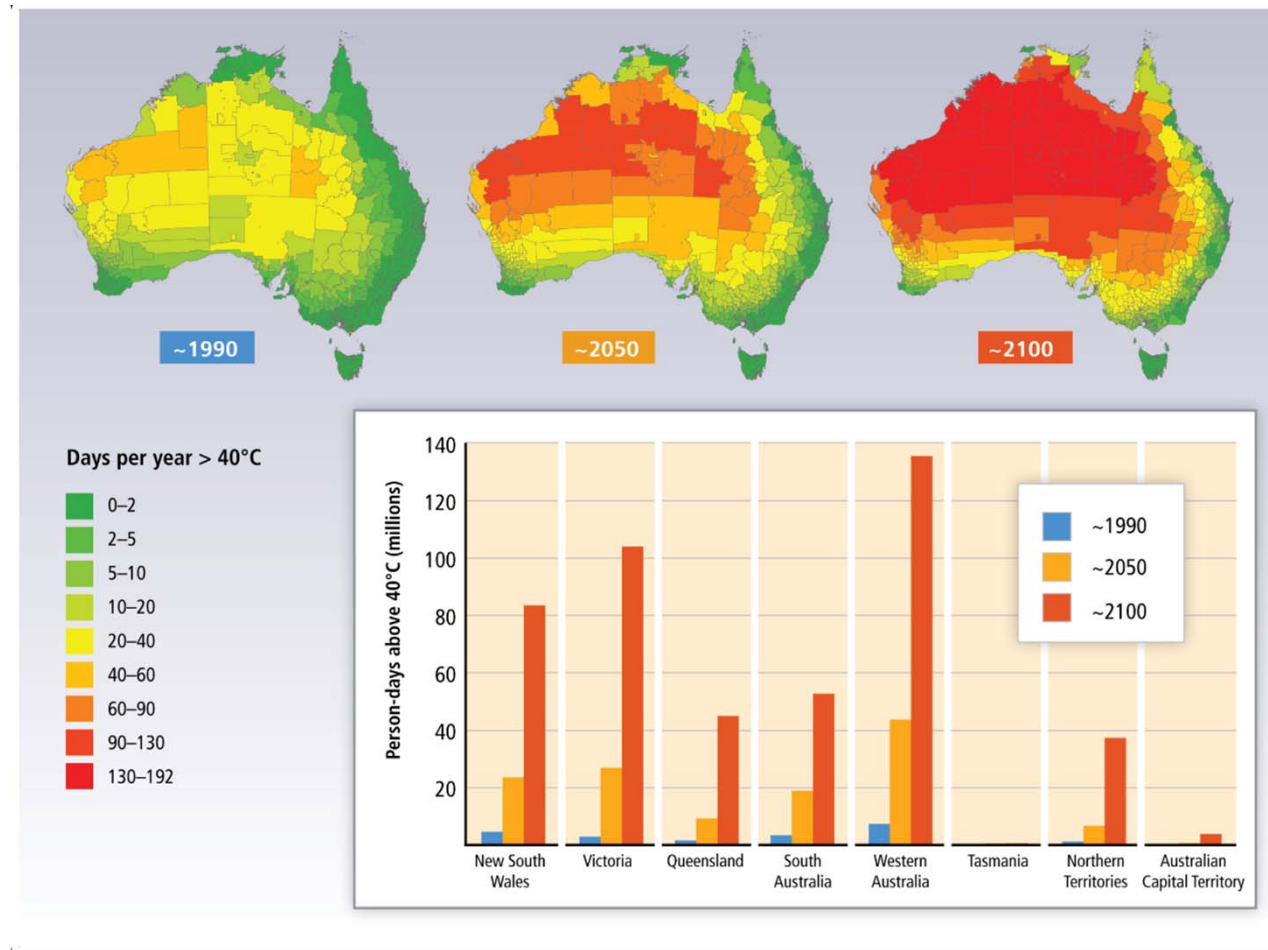
Temperature by distance above Earth relative to 1861



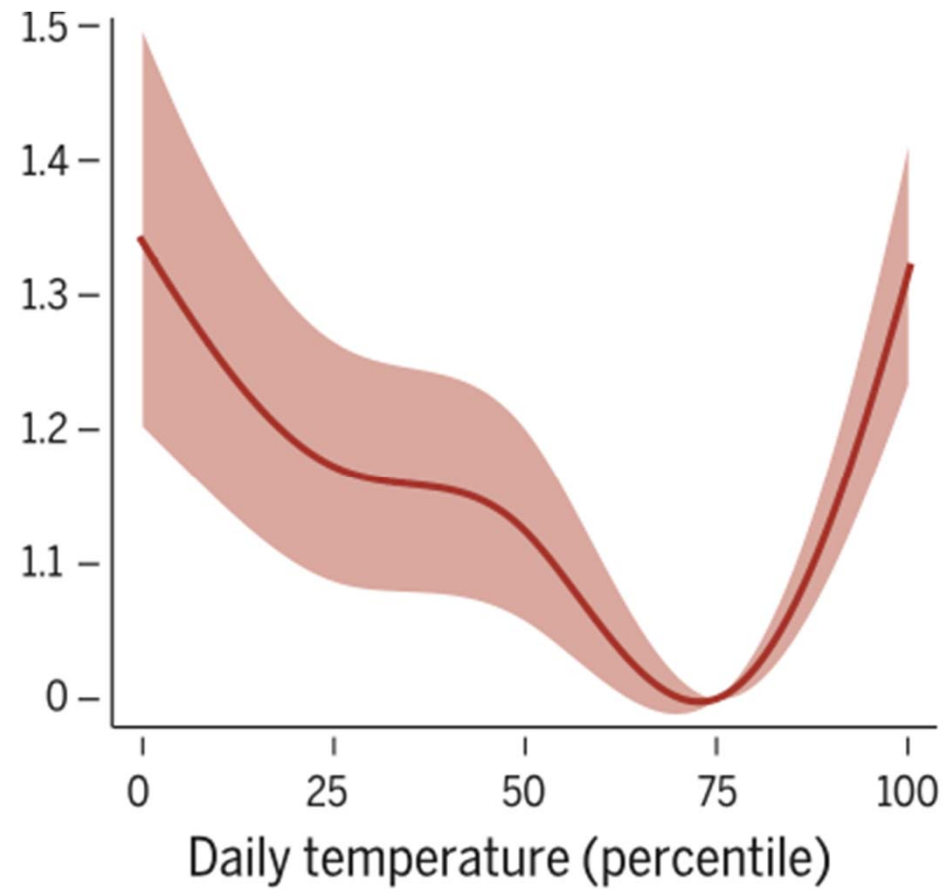
http://www2.sunysuffolk.edu/mandias/global_warming/greenhouse_gases.html#stratospheric_cooling



Projected changes in exposure to heat under a high emissions scenario



The Goldilocks zone

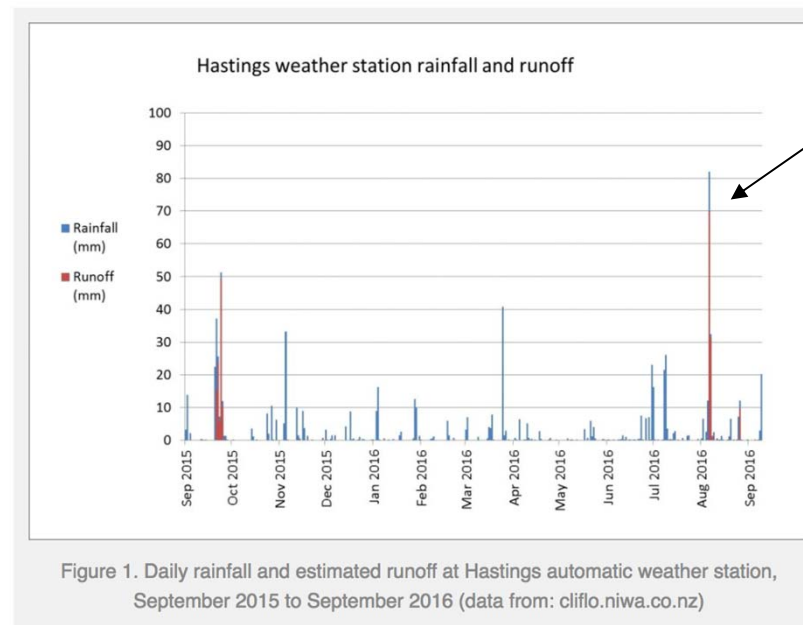


Social and economic impacts of climate. Carleton & Hsiang. Science 2016;353:1112

How climate and climate change affect health

- Direct effects
- Impacts mediated by natural systems
- The results of social disruption
- Transition risks

New Zealand's largest outbreak of water-borne disease preceded by heaviest daily rainfall in more than 10 years



Havelock North – more than 5000 people ill due to *Campylobacter* in the town water supply

4 fold increase in extreme precipitation projected in most parts of NZ by 2050

<https://blogs.otago.ac.nz/pubhealthexpert/2016/09/26/note-to-the-havelock-north-inquiry-think-big/>

Which city is finding it more difficult to control dengue?



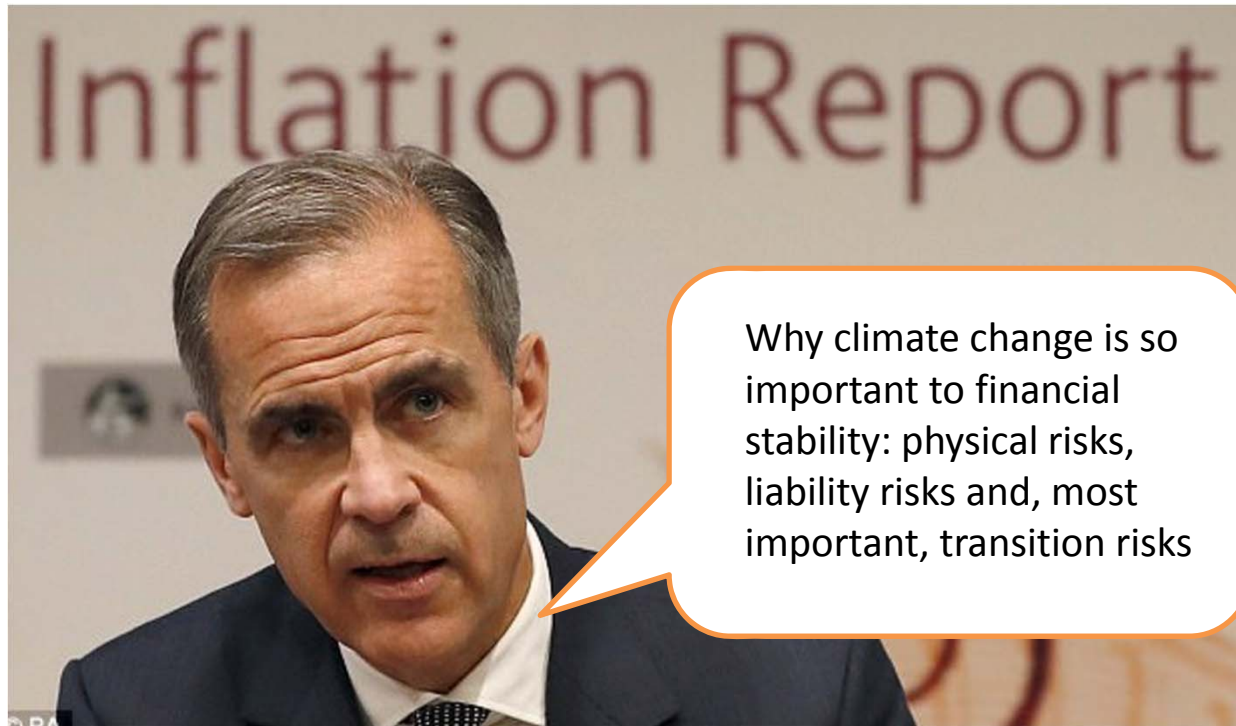
<https://www.startupbootcamp.org/events/fintech-hong-kong-pitch-day-2440/>



<https://vinepair.com/wp-content/uploads/2016/01/singapore-header.jpg>



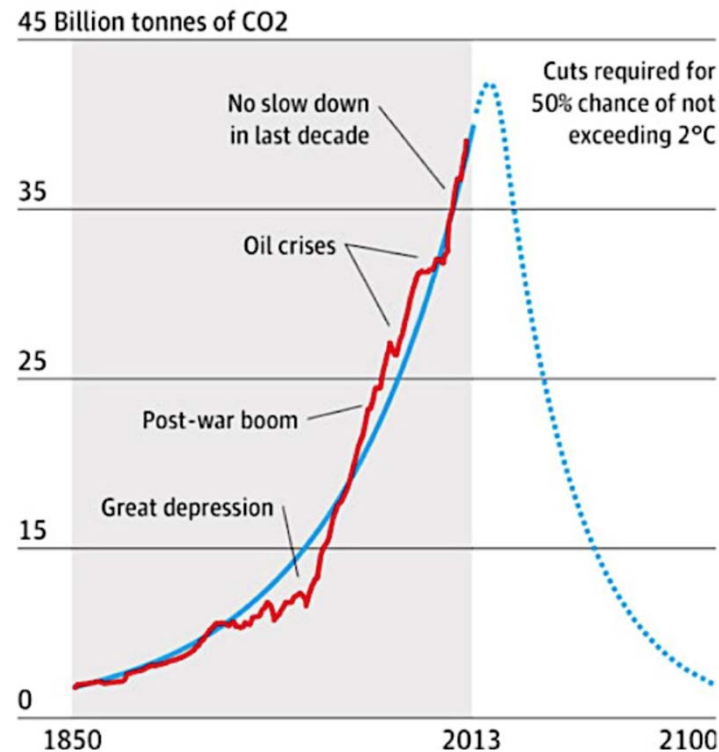
Losses amount to 2/3 national GDP.
Tropical Cyclone Pam – Vanuatu 2015.



Why climate change is so important to financial stability: physical risks, liability risks and, most important, transition risks

Mark Carney, Governor of the Bank of England

An effective response to climate change will require radical changes



\$200 a ton of Carbon would impose a cost on the UK National Health Service equivalent to about 20% of its total spend on medicines

<http://www.theguardian.com/environment/2013/apr/17/why-cant-we-give-up-fossil-fuels>





Community trials of insulation and
clean heating – higher
temperatures, lower disease rates,
lower power consumption

Howden-Chapman et al, 2007

Multiple satisfier?



Health, mobility, efficiency,
emission reduction



Springmann et al 2016

A carbon tax on food to encourage local plant-based diets could reduce global emissions by as much as a GtCO₂e and avoid up to 500,000 deaths per year.

A caution

- Climate agenda and health agenda may align, but they may not
- Co-benefits may spur climate action, or not

Electric cars may be an energy solution; they are not a transport solution; and the health gains are slight



Co-benefits may spur climate action, or they may not



“Southern Ward residents had the cycleway forced on them. I talk about it being done with the delicacy of the Soviet occupation of Berlin after 1945”
Nicola Young. Local resident of Island Bay, Wellington

Action

- Lessons from the history of public health
- Importance of
 - Central direction
 - Local agency
 - Accountability



First-ever
consensus
Model of
environmental
diplomacy
Solid science
basis

But

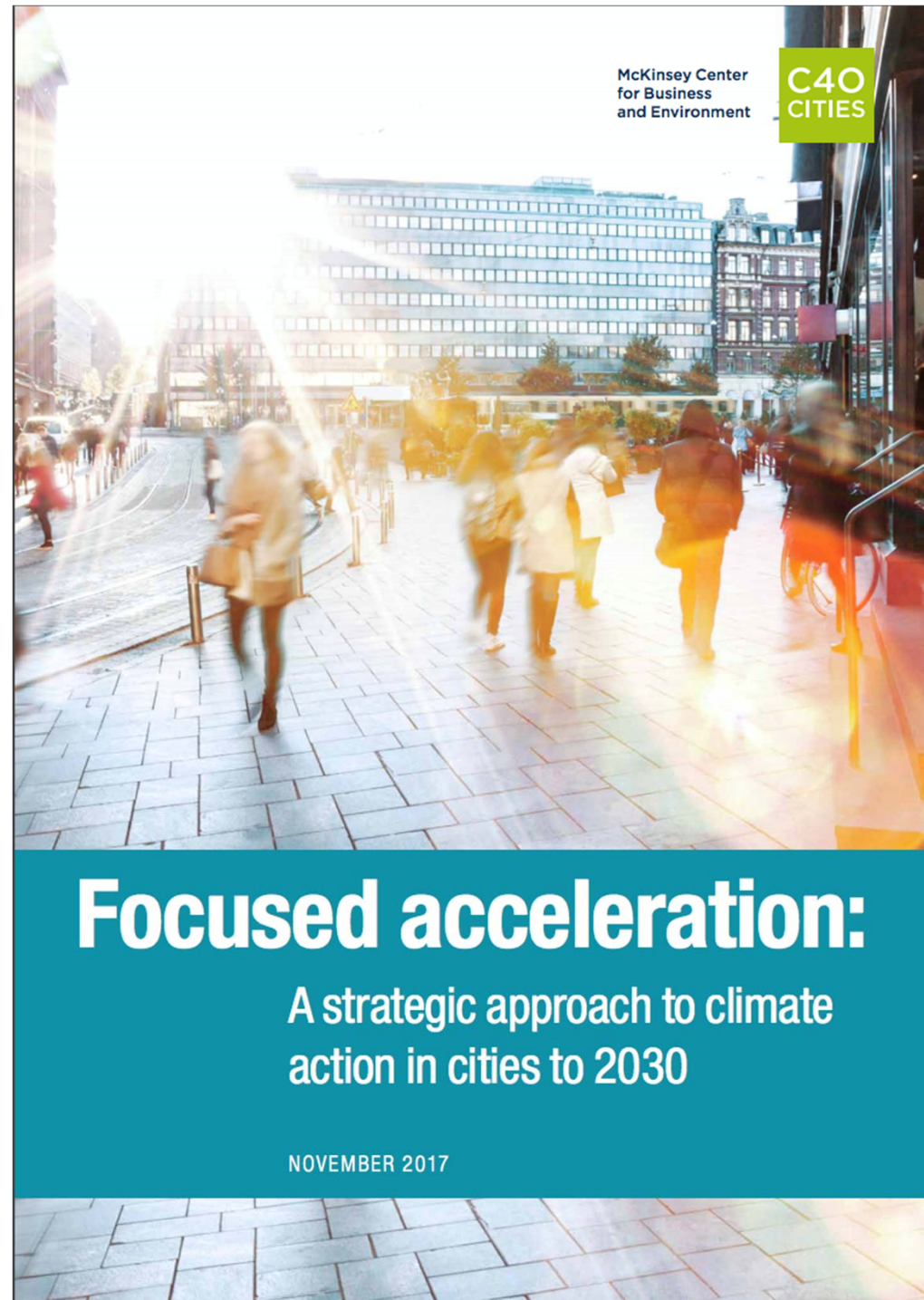
Non-binding
Insufficient

Energy reforms

Low-carbon
buildings

Mobility policies

Waste
management





A Zero Carbon Act for New Zealand

Mr Upton's first report as Commissioner contains detailed advice to Parliament on plans for a UK-style Zero Carbon Act and independent Climate Commission.





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