Connecting the Public Sector on Climate

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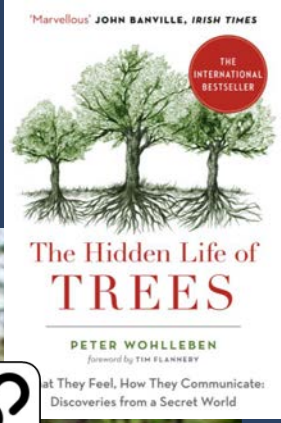
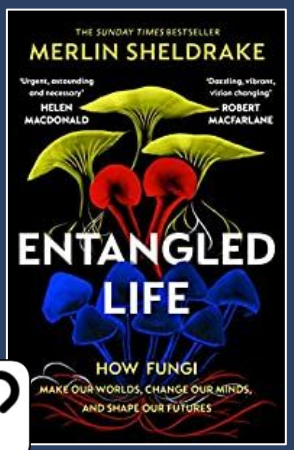
Network Like Nature





More on mushrooms

We need to Network Like Nature

- Tree stump
- Peter Wohlleben: Hidden life of Trees
  - 400 year old tree stump still alive
  - Roots and fungal mycelium create a network for sharing sugars (from plants) and nutrients (from fungi)
  - Clear cut forest and this is lost within 2 years
  - Take 20 yearsto recover
- Connectivity builds resilience in society *and* in nature
- Imagine not having the internet

- Nature is always in communication with itself
  - When we damage it and when we restore it, Nature notices
  - If nature is strong then: copes with climate better
  - We are part of Nature
  - That means we can cope better too
  - Like a tree on its own we are vulnerable and weak when we work alone
  - Together, like a healthy forest
    - All different animals, plants and fungi, even bacteria and viruses work together to make the forest strong
- We are reliant on it for everything in some way

We are still like this

But We need to connect

Volunteer

CGCH

Cross Government Climate Hub

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- 18 or over
- Students
- School leavers
- Public or private sector
- Great way to get experience with professionals working in climate / Sustainability

Collective for Climate Action

- Connect
  - Drs, Nurses
  - Environmental protection
  - Councils
  - Crown Commercial
  - UK Space agency

Met Office

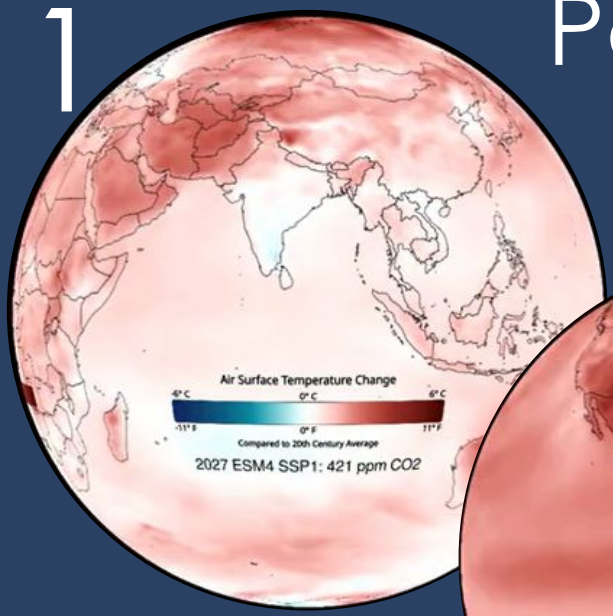
ipcc
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

Environment Agency

Shared socioeconomic Pathways

1



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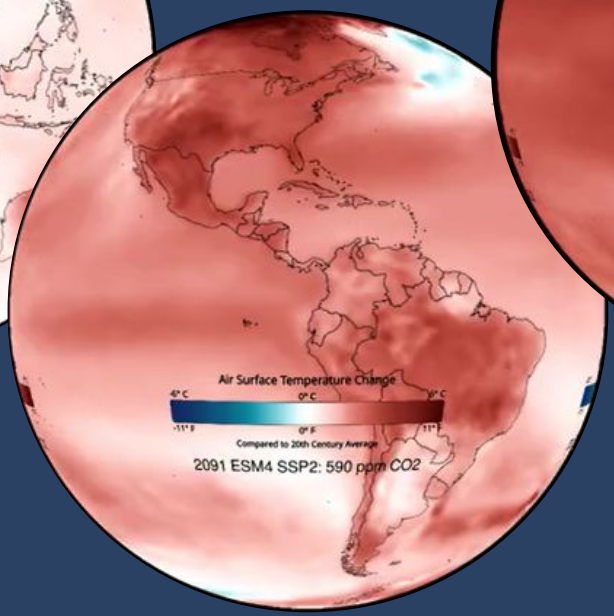

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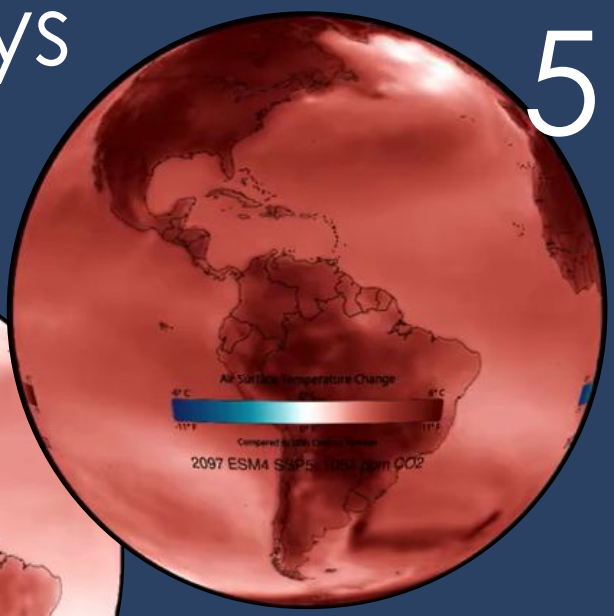

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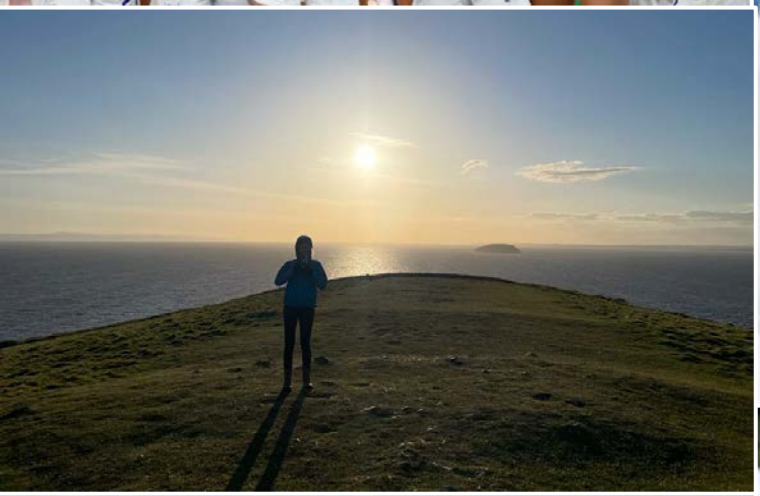
What are these showing?

- Do you know what climate change is?
- IAMs
- Outputs of climate models
- These try to simulate warming based on what we do:
- Can you think of things scientists will have included?
- Take weeks to run
- Some from Met Office
- SSP1, 2 and 5
- Climate scientists volunteer to write reports for the United Nations
  - Help government decide what to do on climate change
  - Show what happens depending on what action they take on climate
  - Government will only do what they think we are happy with

Favourite activities?



Best things in life?

- What are your favourite things to do?
  - How are they affected by climate and nature loss?
  - How do they affect climate and nature loss?

What is happening?

Wildfires in Texas

Thames drying up

Cricket at risk

Heavy Rain / Flooding American Midwest

Heatwaves increase rockfalls

Climate forests burn

Lyton still struggling

Record Breaking July

Half the USA in Drought

Yosemite Floods destroy roads

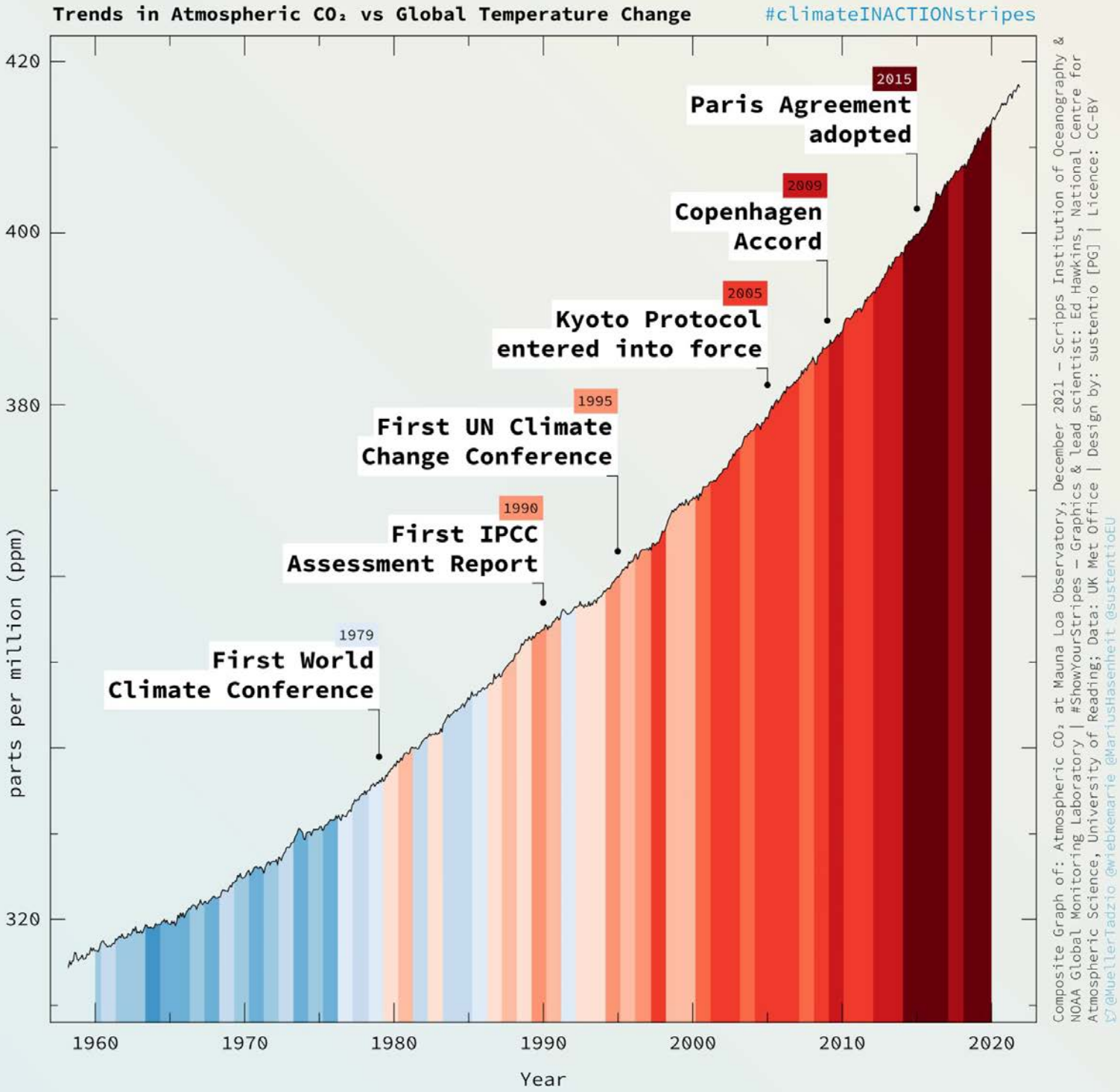
Nuclear Power

Different Sections

What is happening to climate?

How warm is theuk?

BERKELEY EARTH™



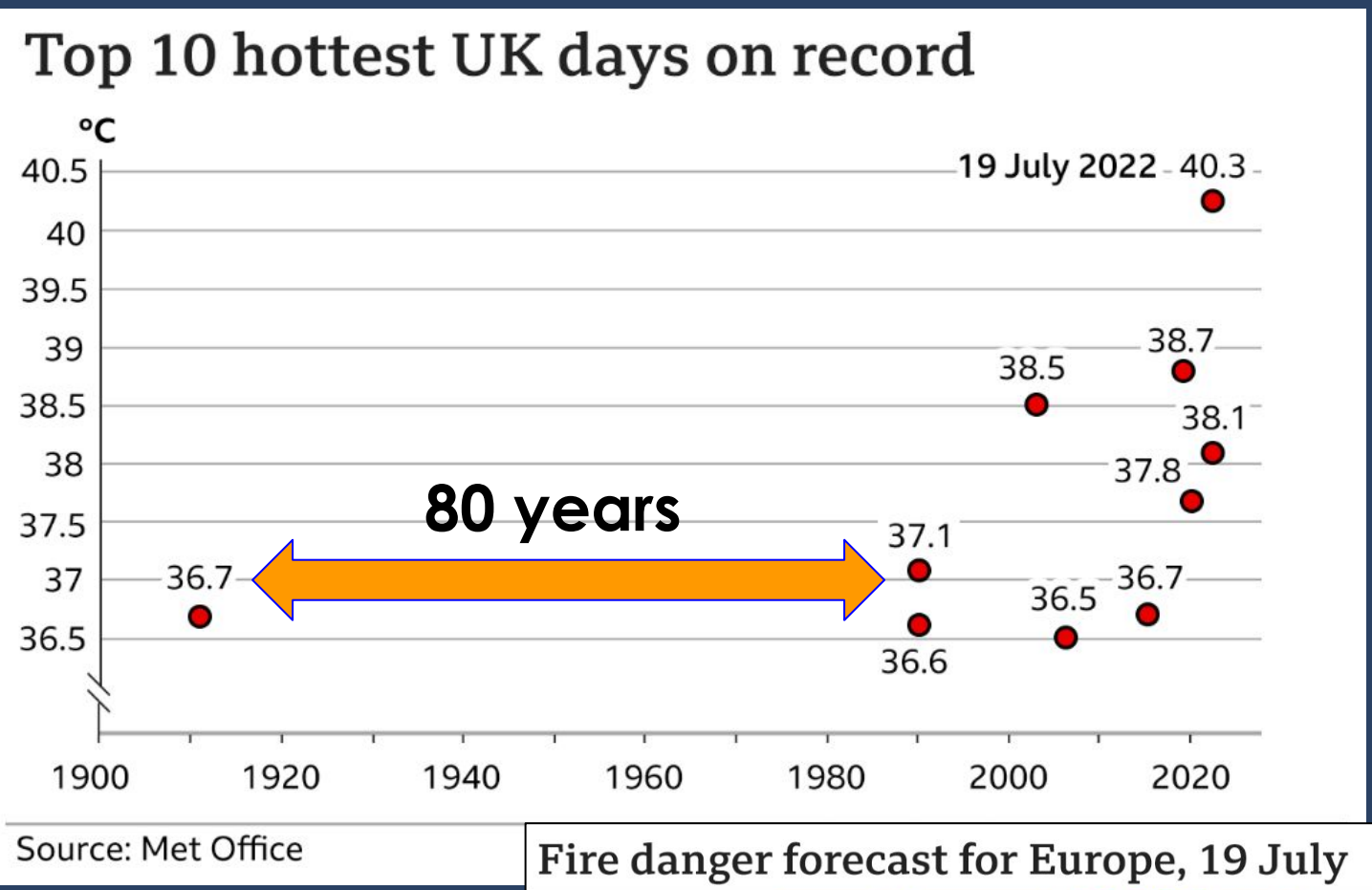
What is happening to climate?

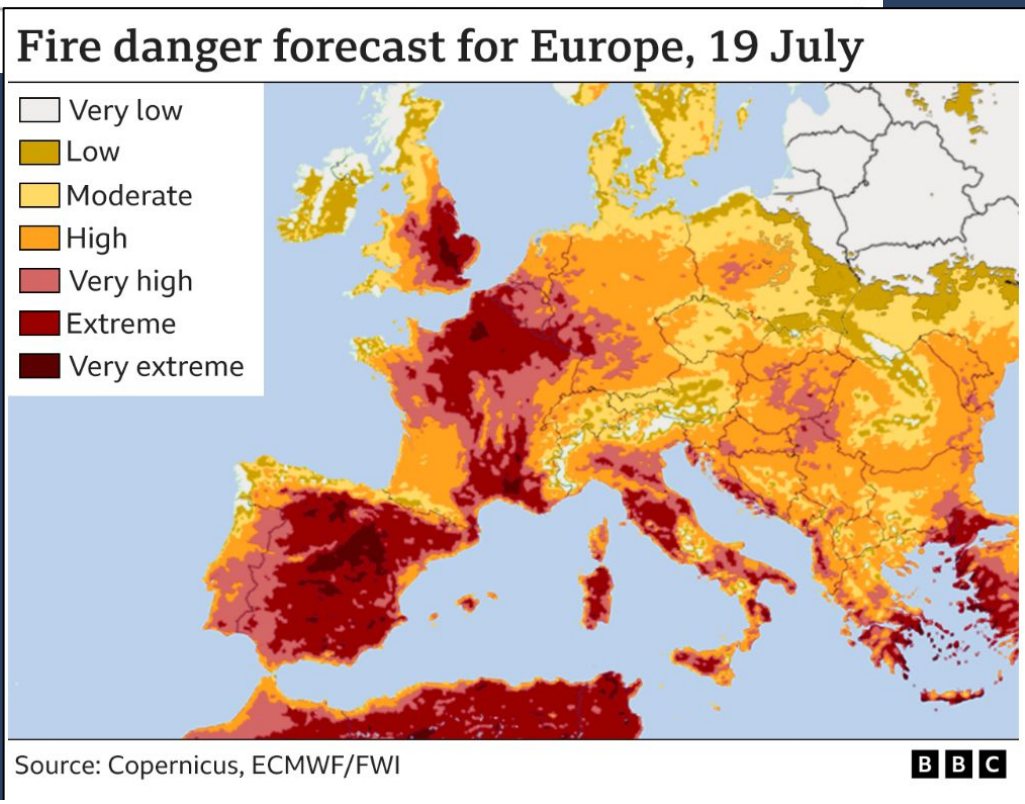
- Globally we are at 1.2-3 degrees
- Not the same around the world
  - Land warms more than the ocean
- Have a look on Berkeley Earth and a couple of different countries
- See how much they have warmed?

What about the UK?

- But we have had record breaking heat waves twice in 5 years

What about Us in the UK?



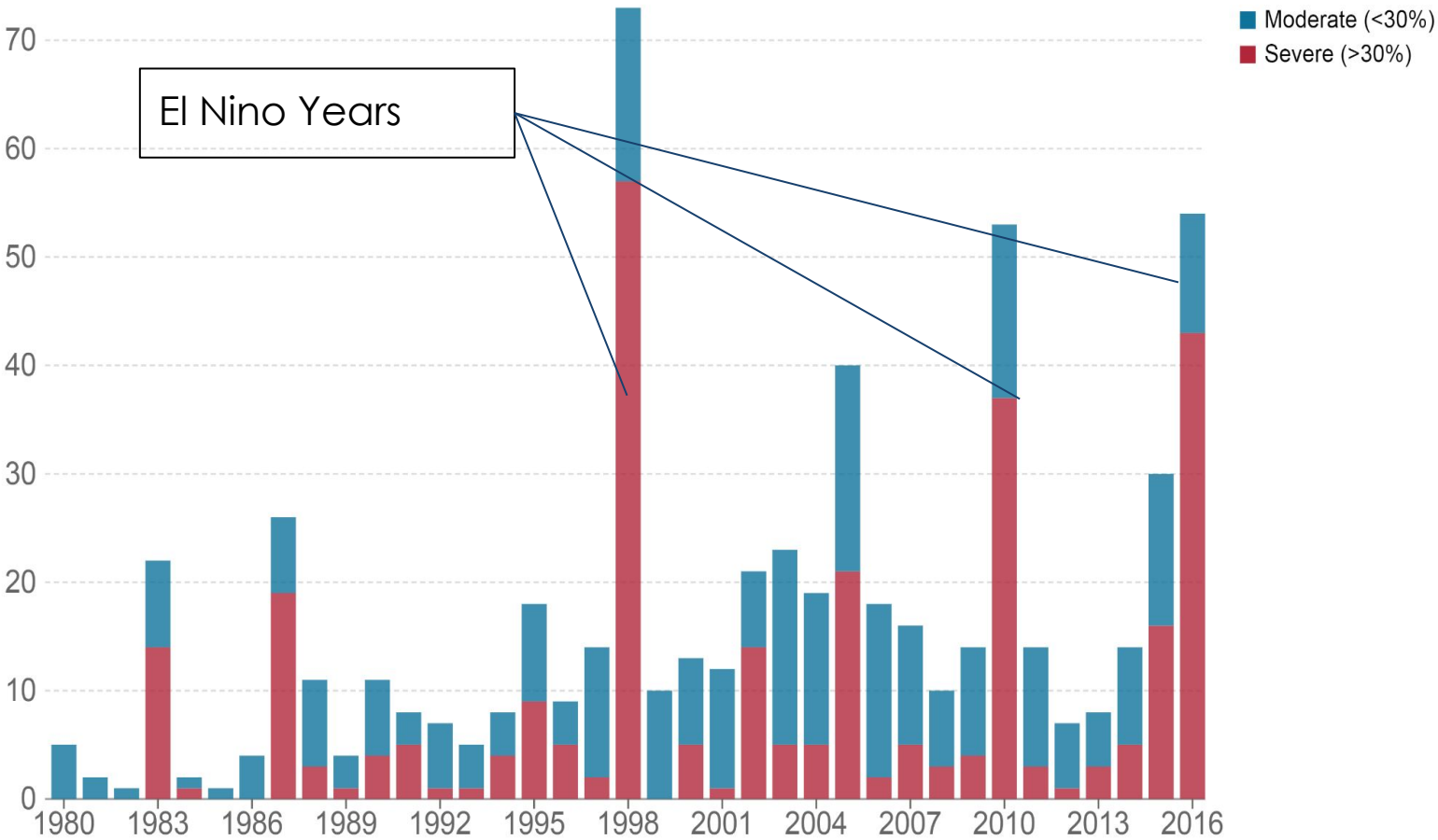


Climate Extremes

- We feel extremes earlier than many expect

Number of coral bleaching events, World

The number of moderate (up to 30% of corals affected) and severe bleaching events (more than 30% corals) measured at 100 fixed global locations. Bleaching occurs when stressful conditions cause corals to expel their algal symbionts.



Source: Hughes, T. P., et al. (2018). Spatial and temporal patterns of mass bleaching of corals in the Anthropocene. Science.
OurWorldInData.org/biodiversity • CC BY

Extreme Weather events: Climate Extremes

- Nature is declining fast: 6th mass extinction
  - Great Barrier Reef lost 50% of corals in last few years
  - Bleaching events are happening twice as often Spatial and temporal patterns of mass bleaching of corals in the Anthropocene (science.org)
  - Continue to extract huge amounts of food from the oceans
  - Oceans = major protein source for 37% of world's population

Where is this desert?

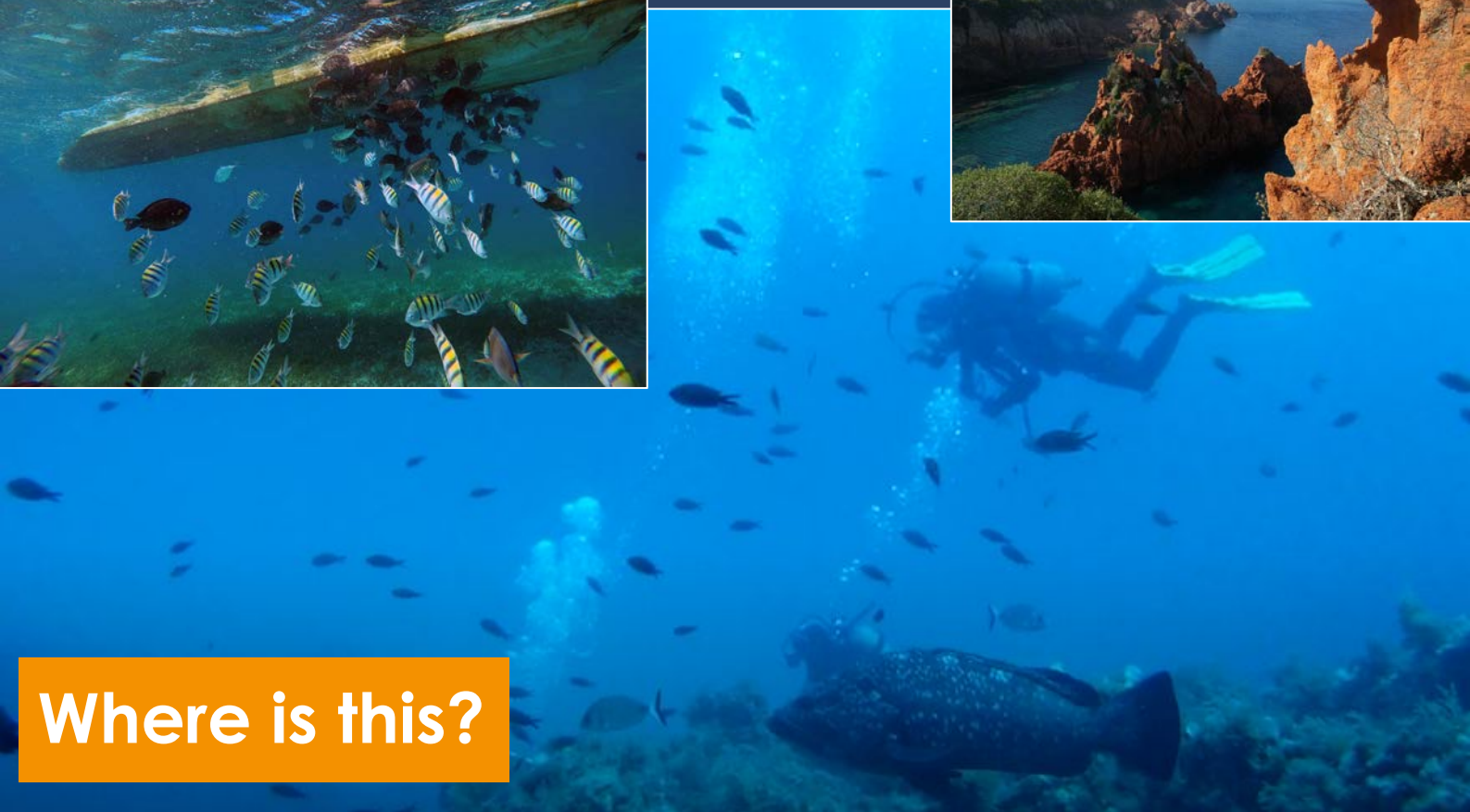
What should be happening?

- We should be getting cooler again
- Holocene is about 11,000 years and should be ending but not by heating up! We should be going into the next ice age
- https://twitter.com/khayhoe/status/1555714323258941444?s=21&t=AultFLVfGObDXWIXXnO--g
- East Antarctica
- Why is there no snow around all that ice?

Beavers vs Wildfires?

Sprague River, Oregon, USA

Preserving Nature Keeps it Strong



Where is this?

Established Ecosystems are stronger

- Saving healthy ecosystems is far better than rebuilding old ones
- But it can regenerate really quickly
  - Builds resilience
  - Sprague River, Oregon, USA
  - Scandola Nature reserve Corsica

What is happening to Nature?

What are they mining for?

Batagaika crater, Eastern Siberia

What is happening to the land?

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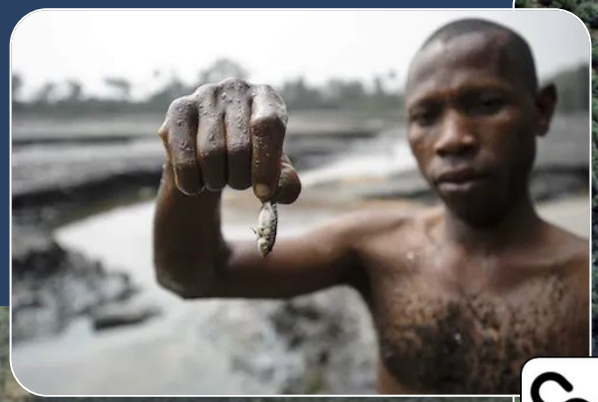
What is happening to Nature?

- We are still destroying it
- Perfect accountant
- Global reach: misses no rules being broken
  - Not like an understanding teacher
  - Doesn't accept excuses
- Delayed consequences:
  - We use the whole world to produce what we need
  - Can do masses of damage in far off places before feeling consequences in UK
  - But Nature notices everything immediately **BUT WE DON'T**
  - Makes consequences more severe
- Strip away forest for oil in Canada: replanted forest are:
  - less resilient forest
  - more likely to burn
  - Less able to adapt to climate

Pollution



Niger Delta, Nigeria

Oil

Oil

Oil

Oil

Oil

Oil

BBC NEWS

Where did all this oil come from?

What is happening to Nature?

Niger Delta:

- Badly managed
- Local people not benefitting
  - Conflict
  - Pipelines destroyed
  - Oil stolen
- Less productive rainforest and delta:
  - feeds less people and
  - sustains a poorer forest and ocean
  - Capture and store less carbon/more likely to release it

What about the UK?

- One of the most degraded lands in the world

Deforestation? Where is it worst?

What country? 60% forest

What country? 13% forest

Whatever we do badly, climate makes it worse

How much forest have we cut down?

Forests and Water

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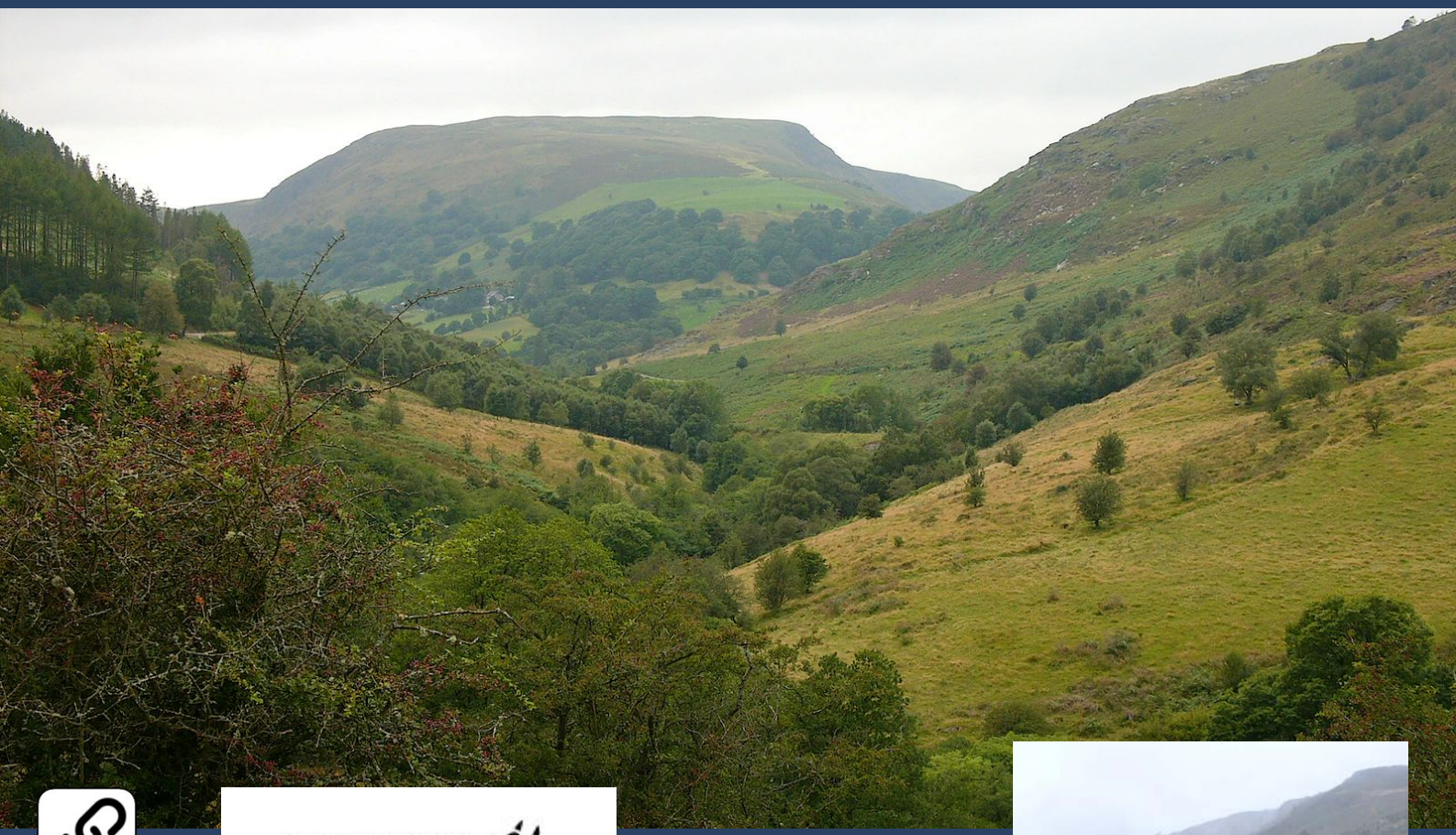
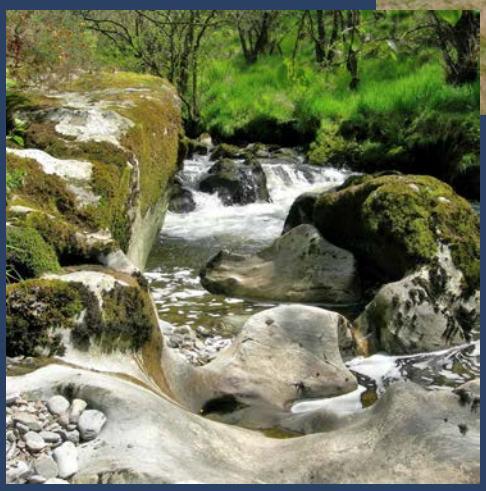
What is happening to Nature?

- We are also restoring it



REWILDING BRITAIN



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Whatever we do badly, climate makes it worse

Where are these?

- UK Some of the most degraded land in the world

How we manage our:

- Building
- Water
- Land use:
  - Agriculture
- Travel
- Cities
- What we buy
- Politics
- Preparation for emergencies
  - Pandemics
  - Heatwaves
  - Floods

Going to be hard:

- But addressing climate and nature loss can have massive benefits

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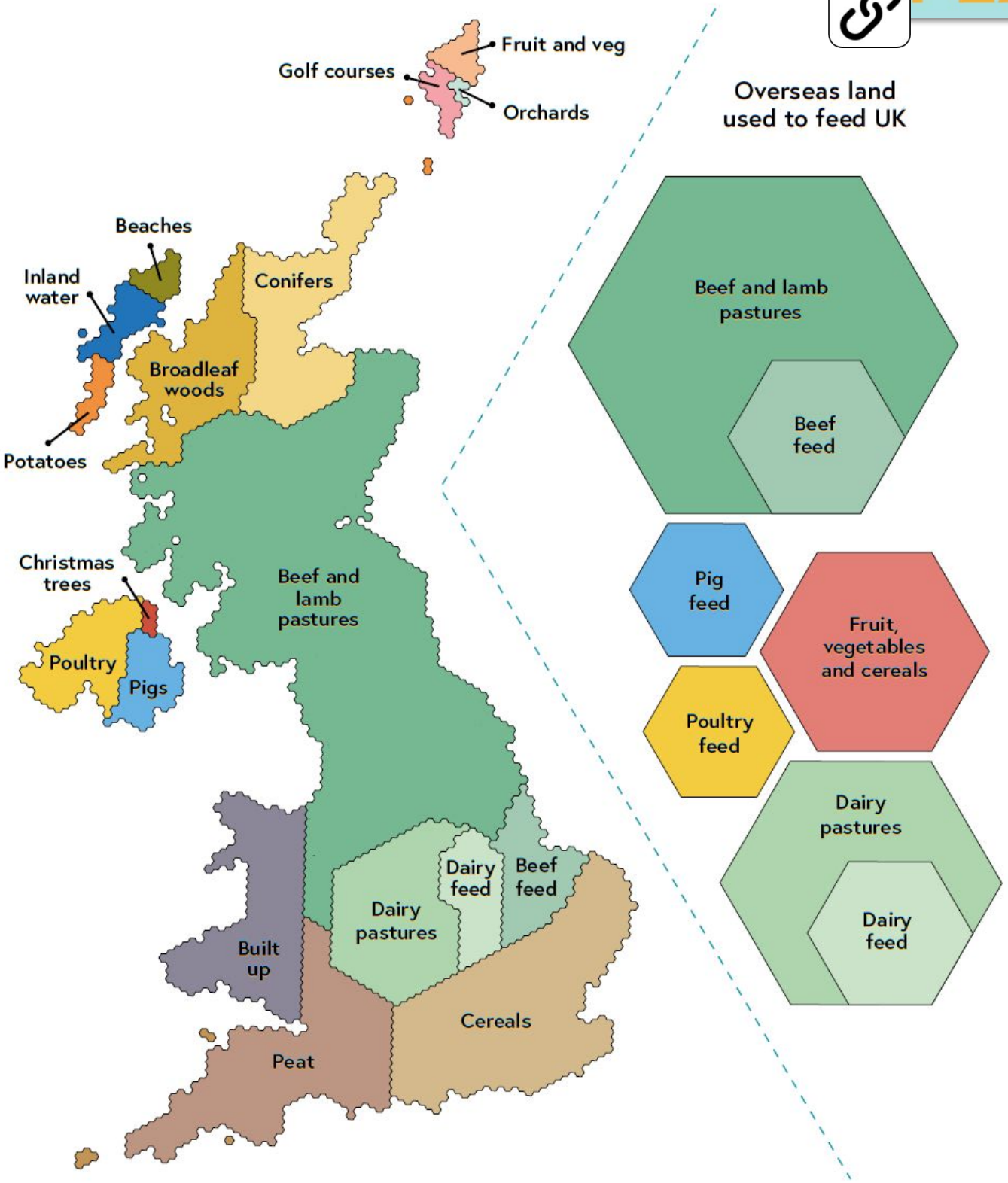
Food: land and ocean use

National Food Strategy
Independent Review

THE PLAN.

Figure 9.3

We use our land for a great diversity of purposes, but rearing lamb, beef and dairy cattle predominates[12]



Note: this analysis draws on de Ruiter et al. (which uses a top-down methodology) and Poore and Nemecek (which uses a bottom-up methodology). These have a high degree of agreement other than for total land footprint and share of land footprint overseas. The overall size area of land associated with UK diets is estimated to be between 24 and 38 million hectares, and the relative share of this land that is in the UK versus overseas is around 50% (43–54%).

The UK has some the most degraded land in Europe

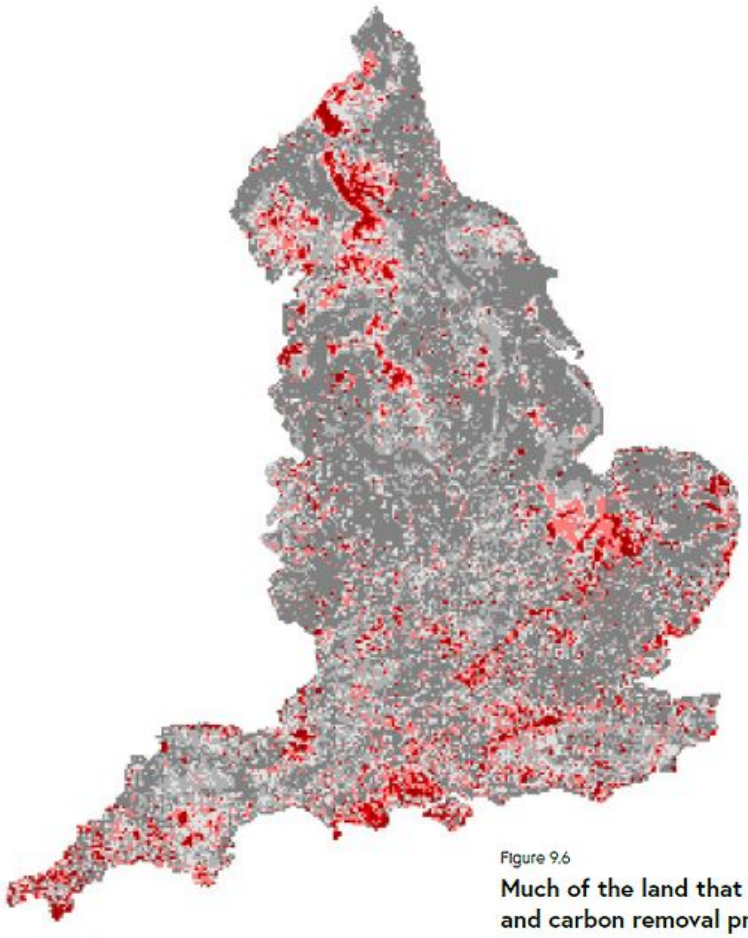
COLLECTIVE FOR CLIMATE ACTION

Food and Land use

- Food is important
- Changes how we use land
- Many ways to produce food
- We need to do it better
- Grow the best foods
- Use the best techniques
- Use the best land

Figure 9.2

A significant area of land (red) is well suited simultaneously to sequester carbon and protect nature[11]



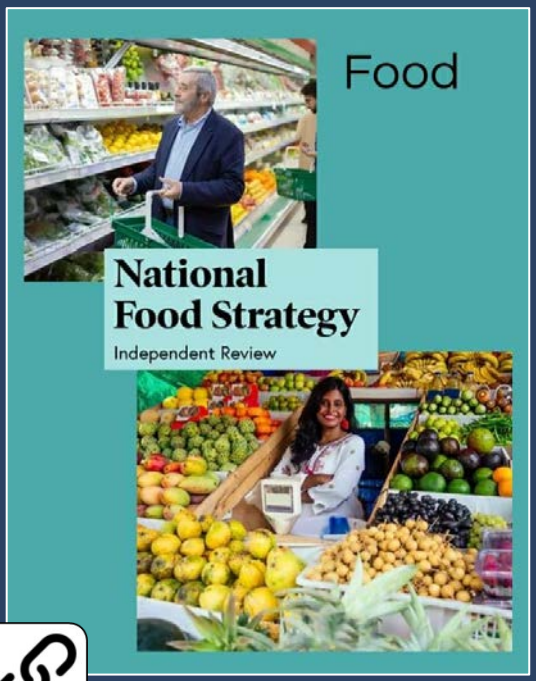
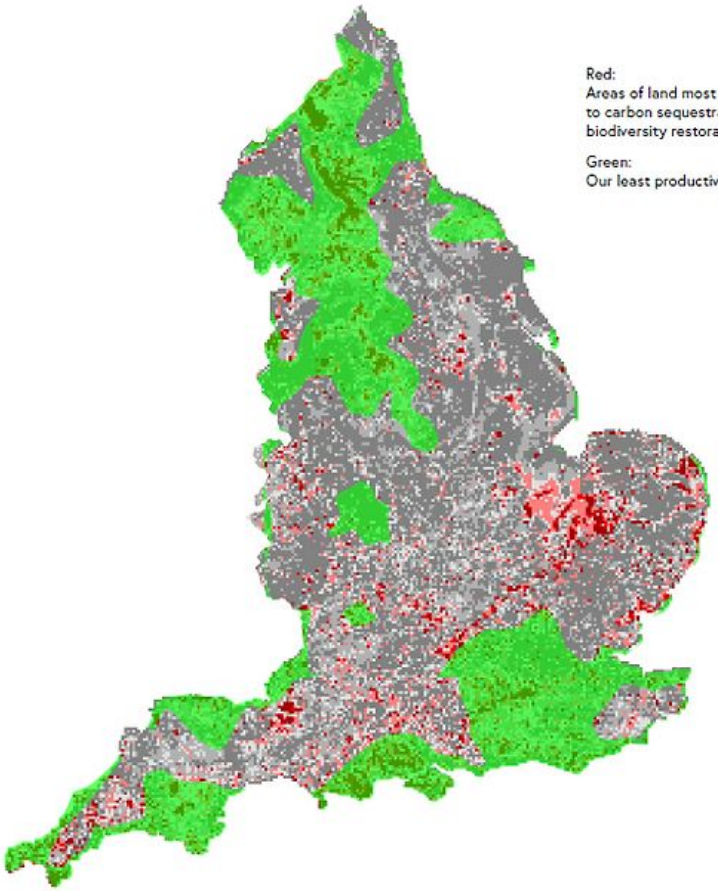


Figure 9.6

Much of the land that is best suited to nature restoration and carbon removal produces little food[16]



Regenerate our landscapes

Food: Land use/Ocean Use?

What is creating shade here?

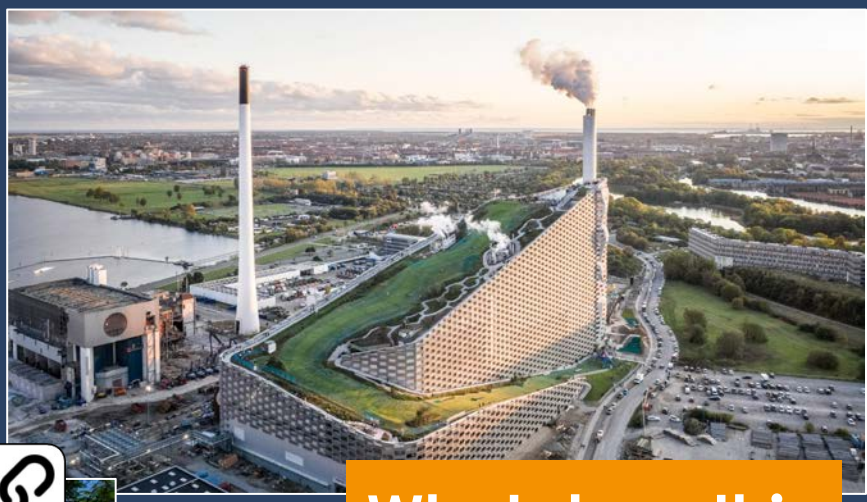
What can you see growing?

Food: land and ocean use

- Agrivoltaics:
  - Provide energy and shade to help crops
  - Reduce evaporation/transpiration
- Solar over canals/ Lakes
  - Reduce evaporation /transpiration
  - Solar on pastures
- Wind at sea with kelp forests and algae create artificial reefs

Man Made Solutions

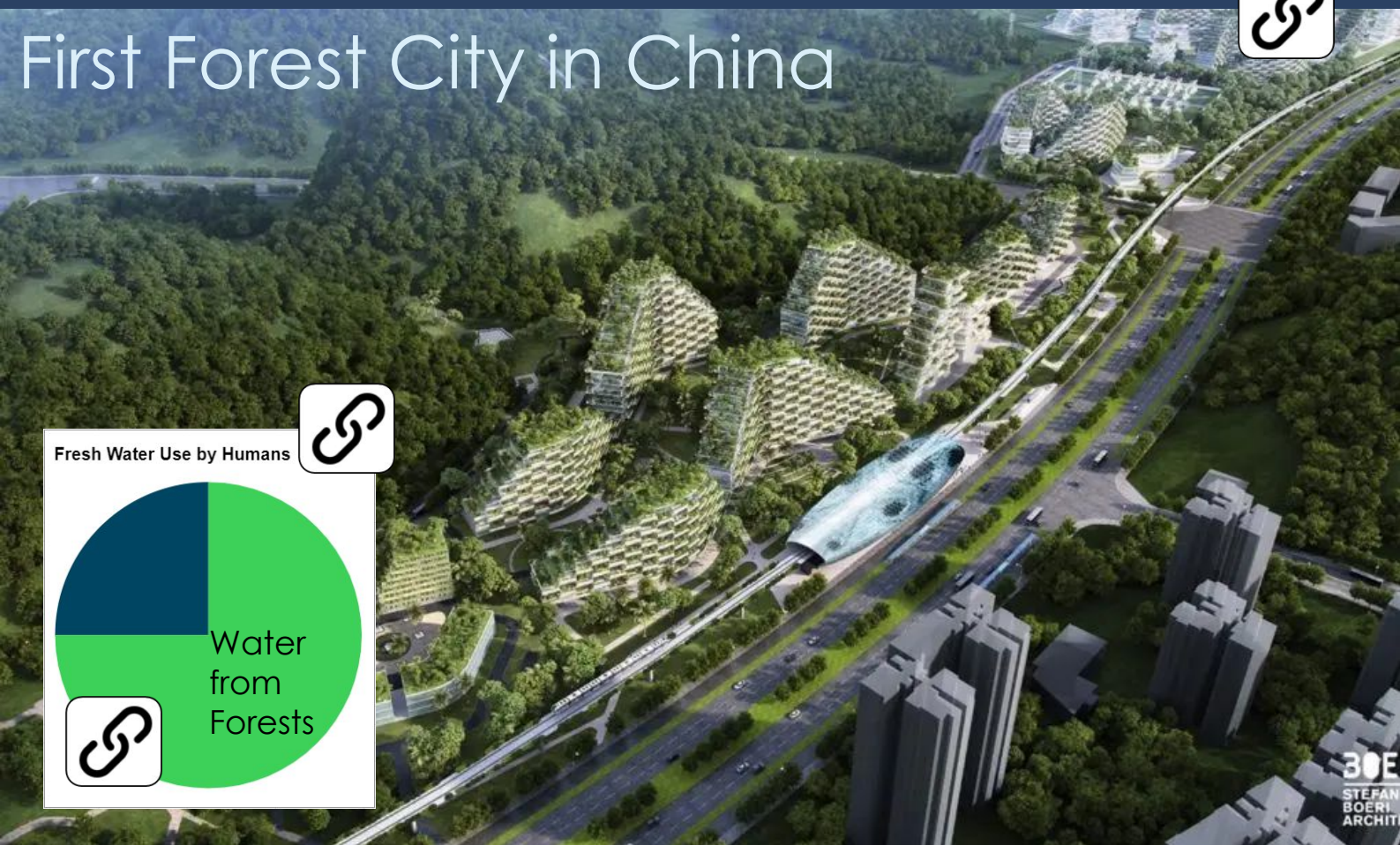
Copenhagen



What does this building do?

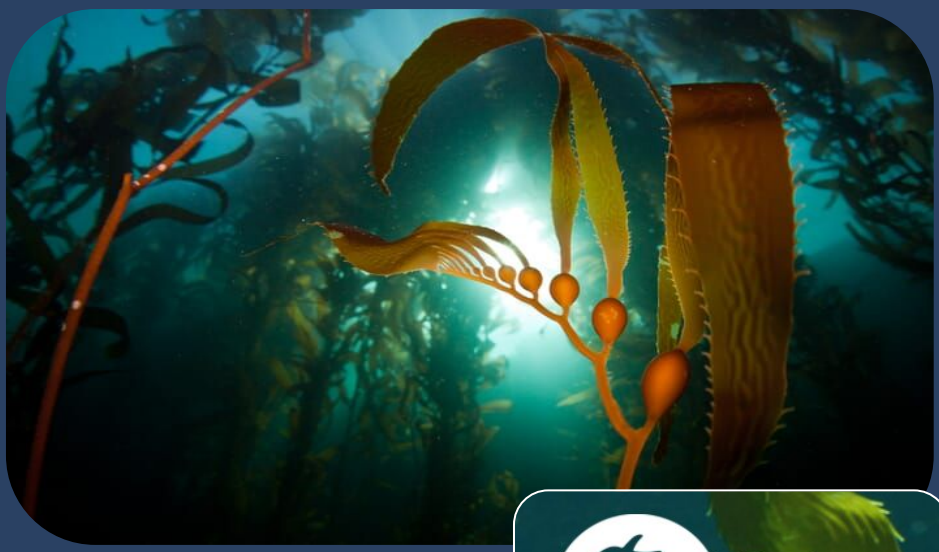
Singapore

First Forest City in China



Carbon Capture

Catch CO2 from air or water and store for 1000s of years



£200/tn

Carbon Kapture

Carbfix

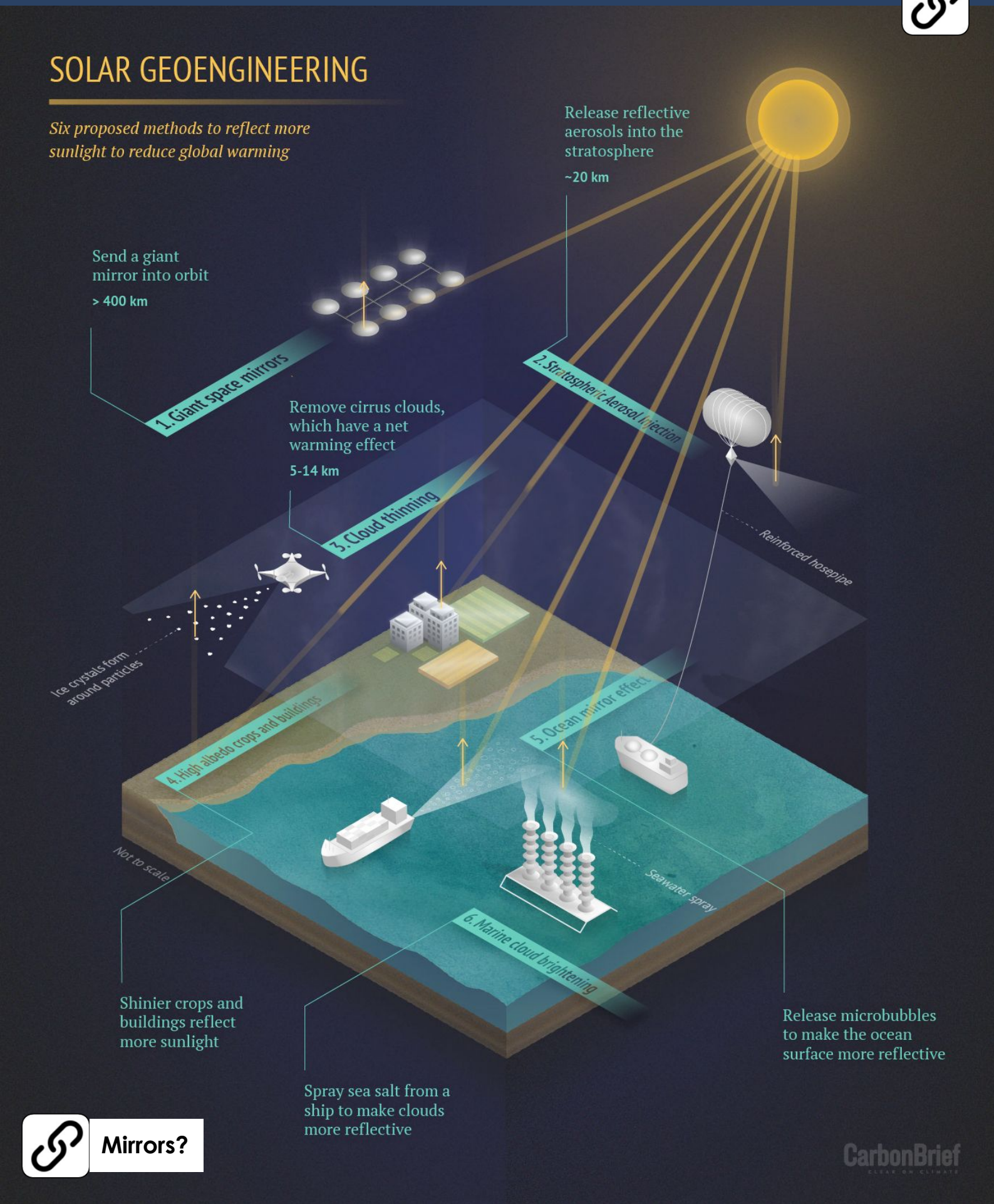
climeworks

Capture CO2 and react with Basalt or pump into geology to store

£1,000/tn

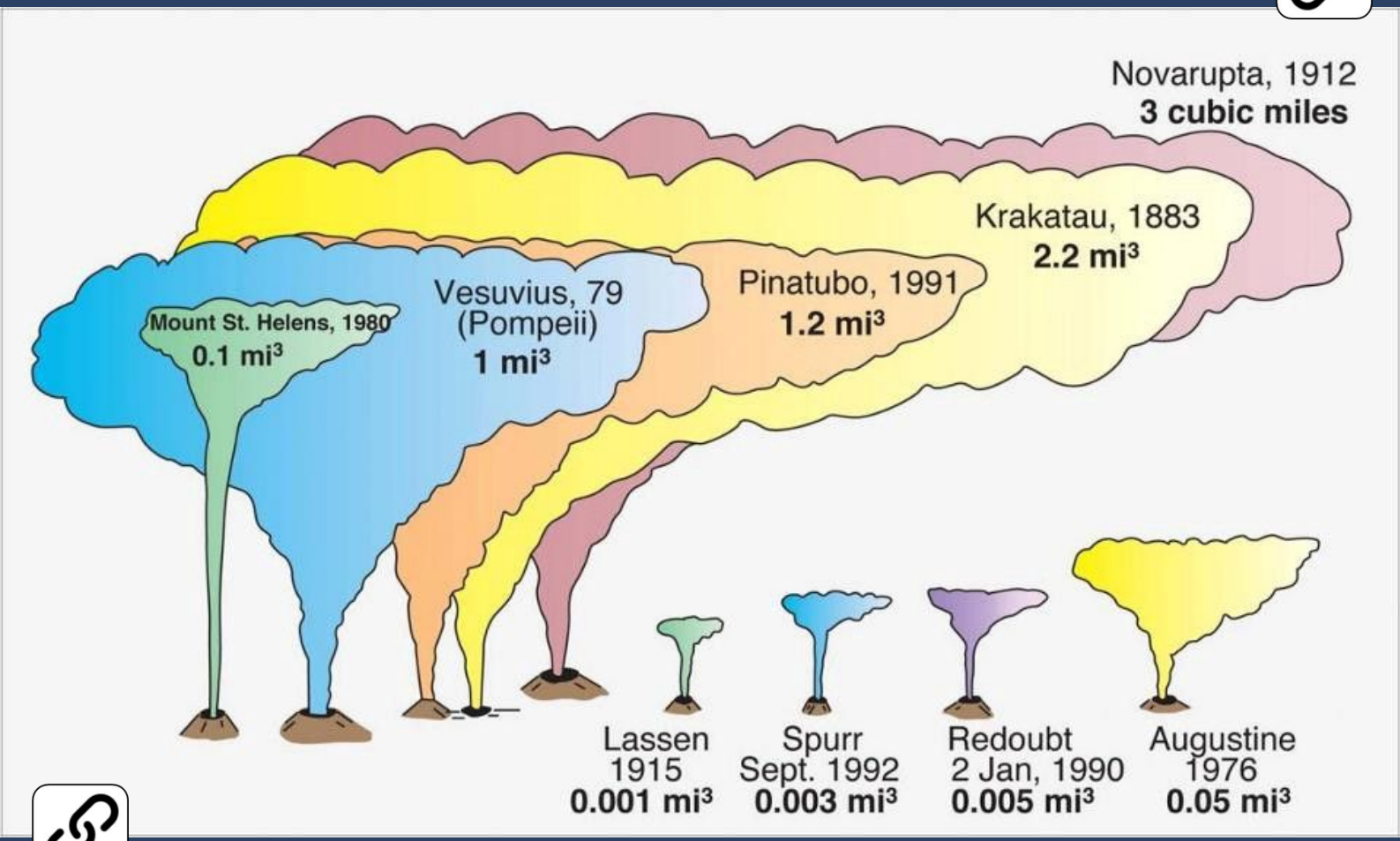
COLLECTIVE FOR CLIMATE ACTION

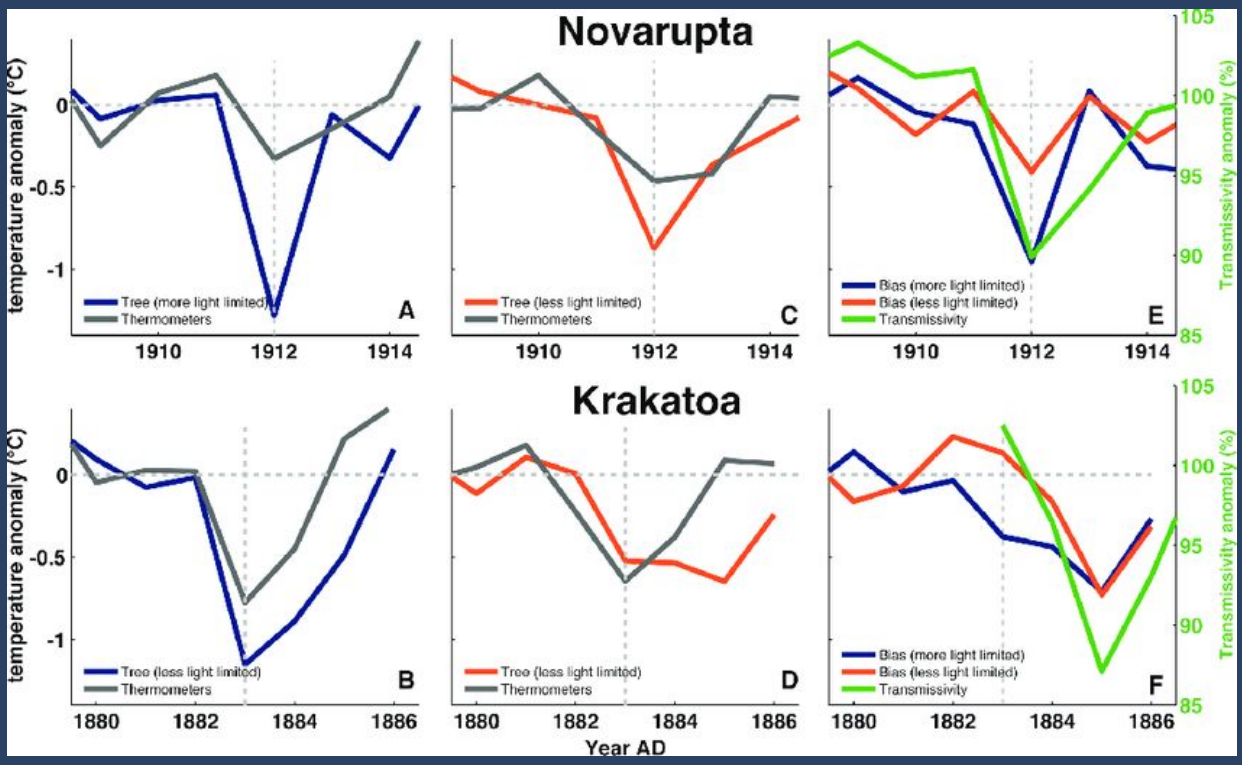
Geoengineering: stopping warming



Mirrors?

Geoengineering: How do we know it works?





Electric Cars vs Fossil Fuel Cars: What's the difference?

What's the difference?

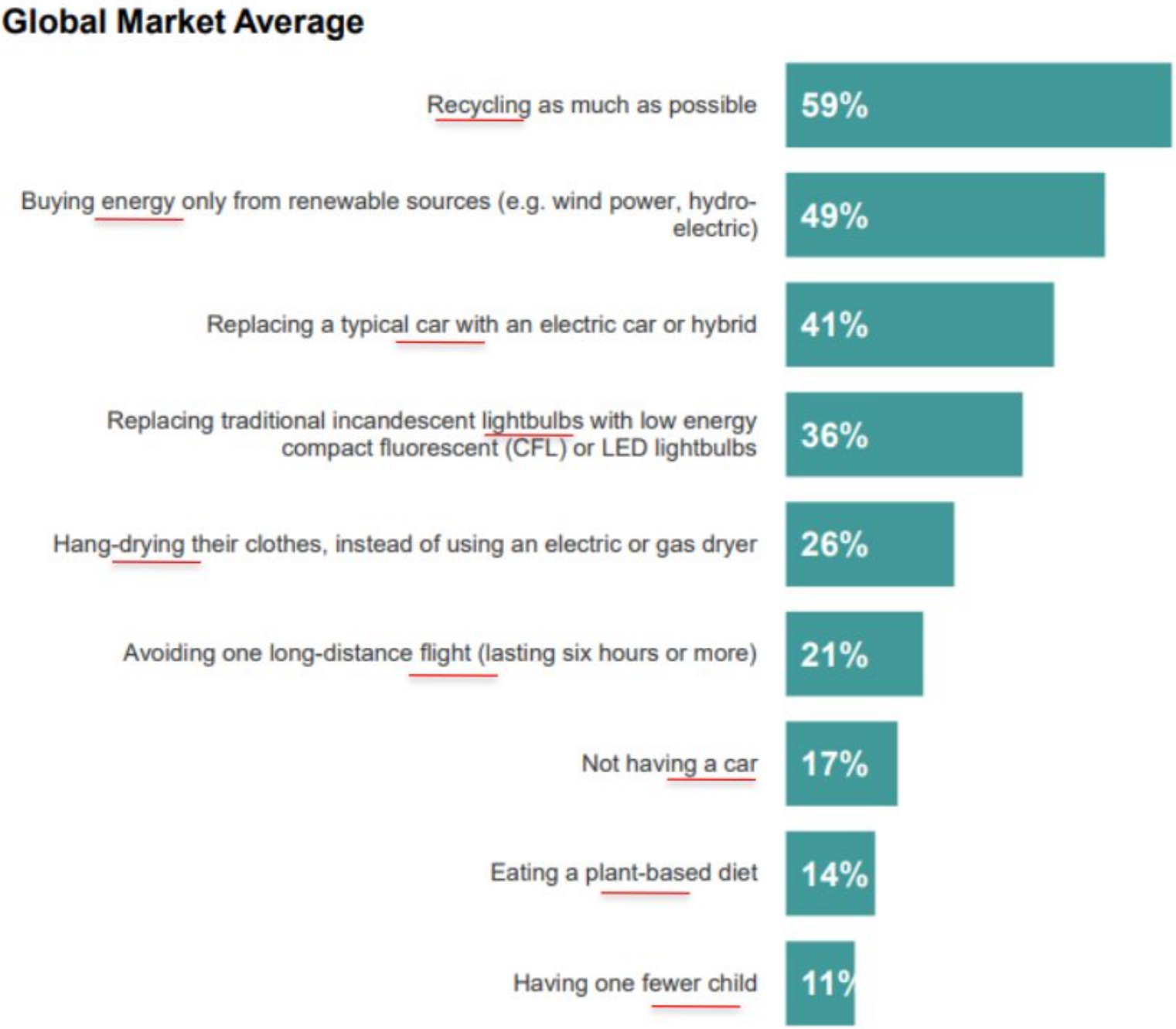
- Fuel Cost
- Charge itself
  - No fuel:
  - Russia / energy crisis
- Doesn't matter how much fuel costs
- Energy Storage
- How do they store their energy?
- What can you do with that energy?
- Your own private moving power station: use that electricity for anything you want
- Use it:
  - Car
  - Anything in your house House
- Sell it
  - To the Energy grid
  - Charge other cars
  - Sunny counties: No charging station needed!

- Simpler
  - Lasts Longer
  - About 15 moving parts vs 200
  - Less to go wrong
  - Do up to 8-9 times as many miles in its lifetime
  - You would never need another car

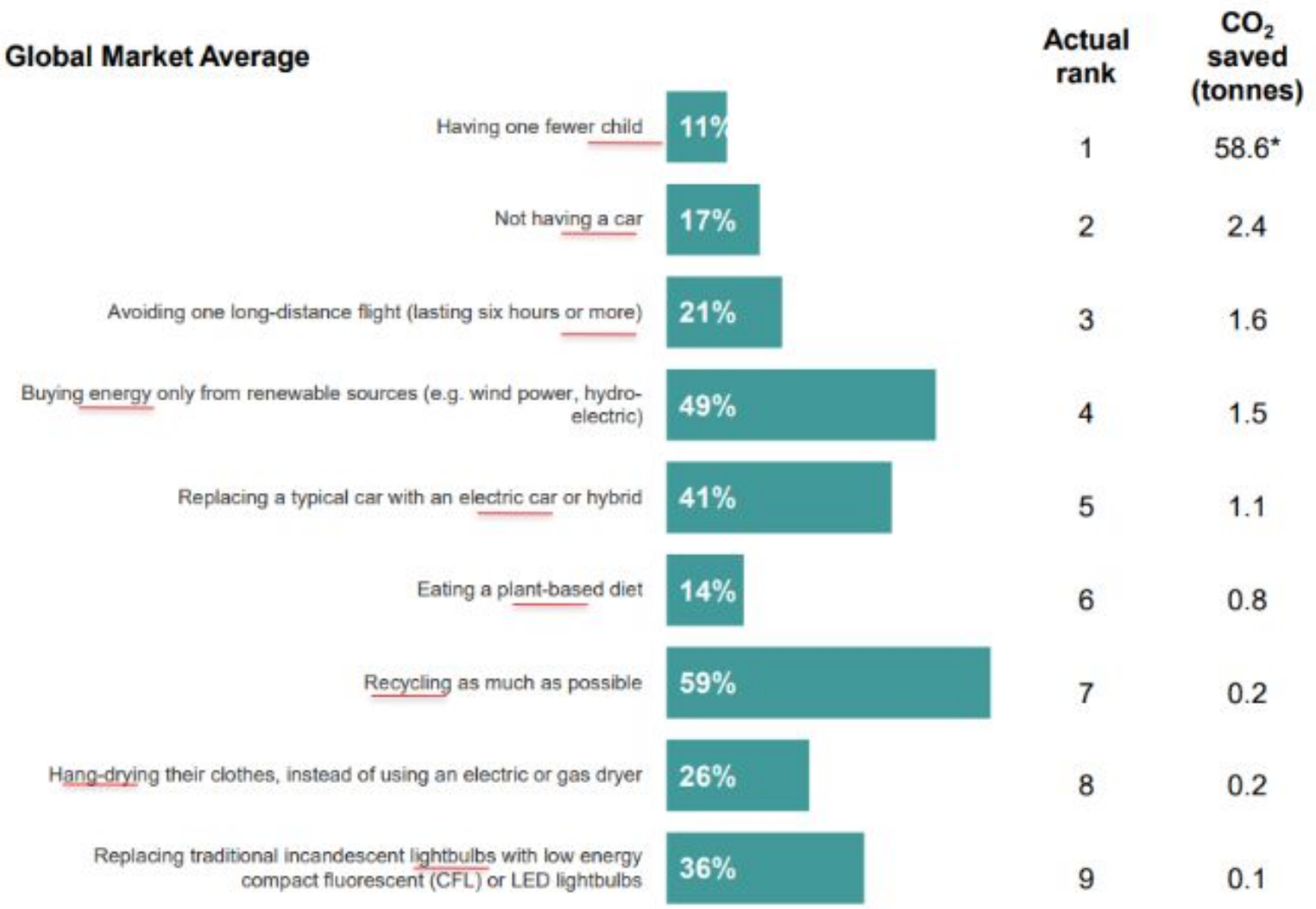
Anything electric uses less than half the

Climate Actions: What makes the most difference?

What people thought



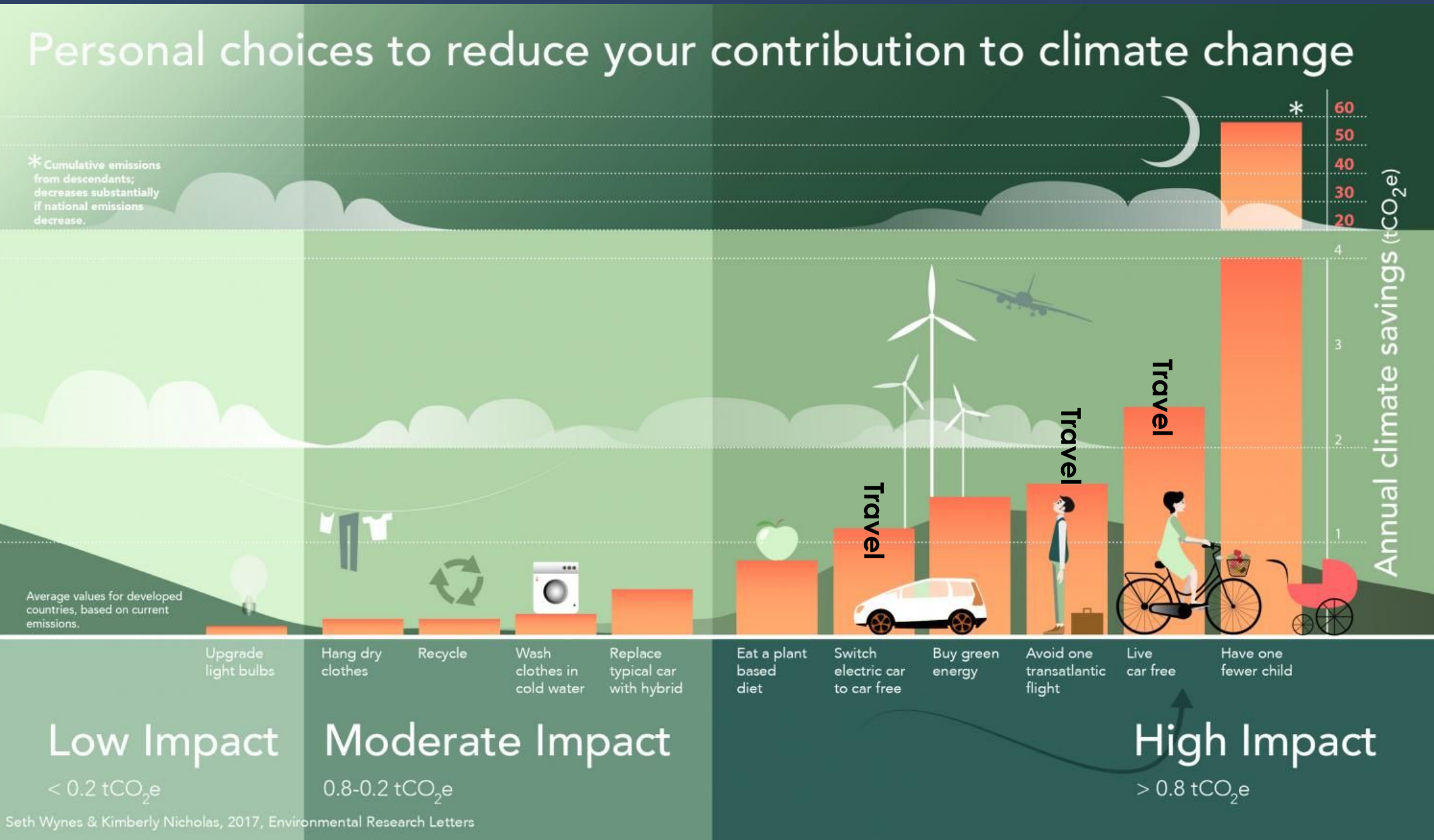
Climate Actions: What makes the most difference? Answers



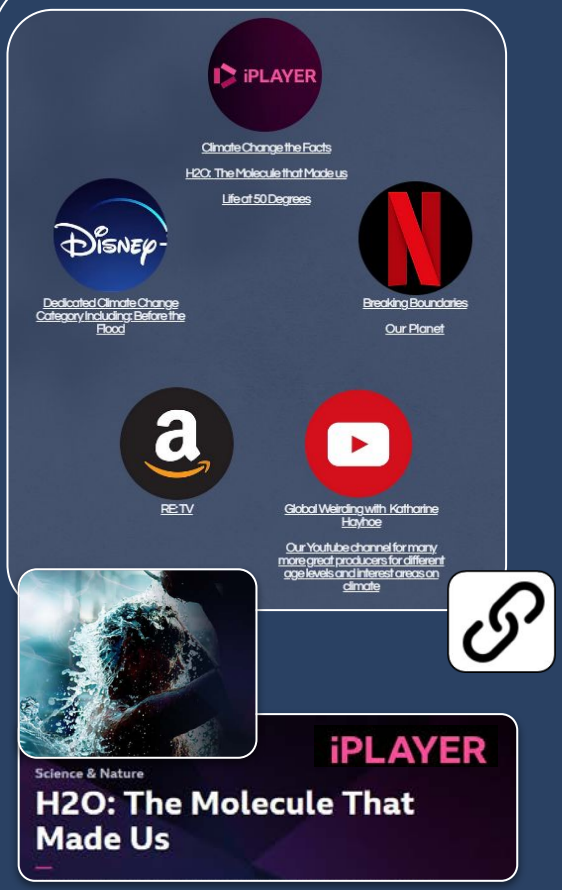
- Don't forget your pension!
- Climate actions, you will not have thought of some of these!

The impact of different actions?

The four lifestyle choices that most reduce your carbon footprint | Lund University



- Ask yourself: “Do I need it?”
- Join a group
- Act now



Learn about climate

Teachers and Students Join UKSSN

Take Action

Find our resources, share and join us: You can volunteer with us when you are 18!

Finally

- Join a group: UKSSN
- This will be hard but we can do it
- Never been more you can do
- Will never be a time to have more impact
- Parents:
  - Climate Actions Page
  - Charities
  - Local action
  - Pension
  - Vote, Politics is the greatest barrier:
    - Government needs your help
    - Climate Change Act 2008
      - Failing
      - It will break the law by failing to address climate as much as they are legally bound to under the act
      - They will only do what they think we want