

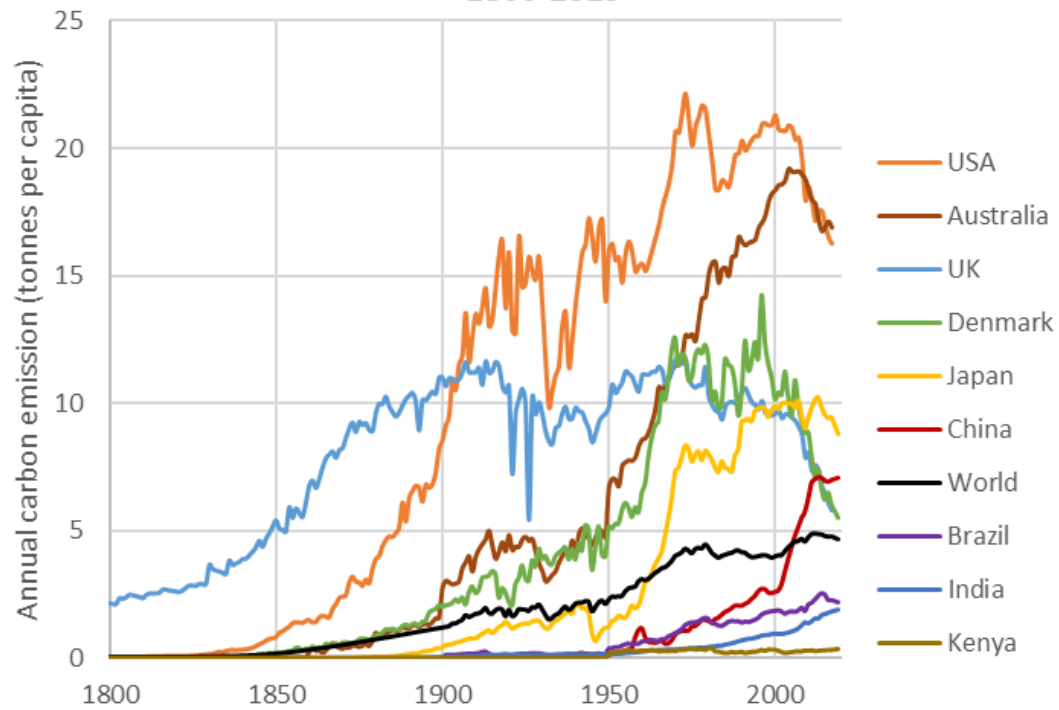
Cutting and Capturing Our Carbon

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Carbon emissions per capita by country and world,
1800-2019

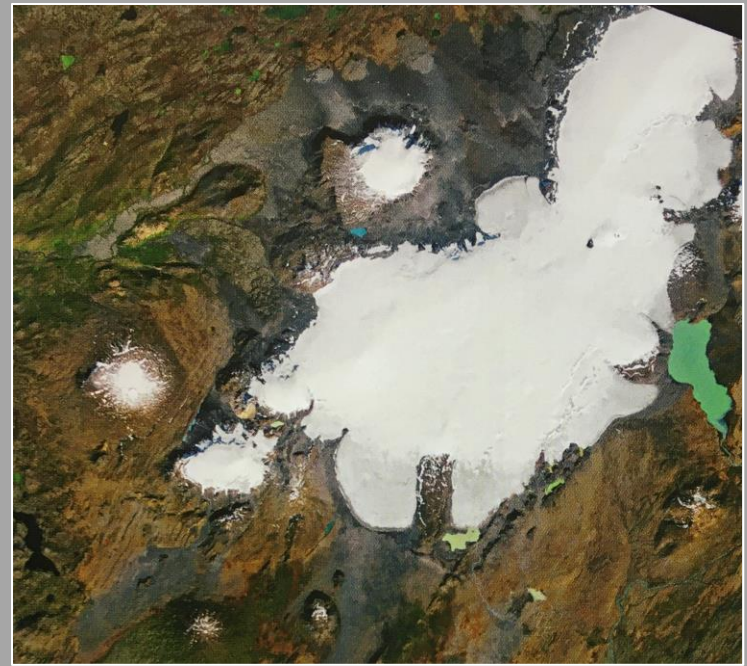


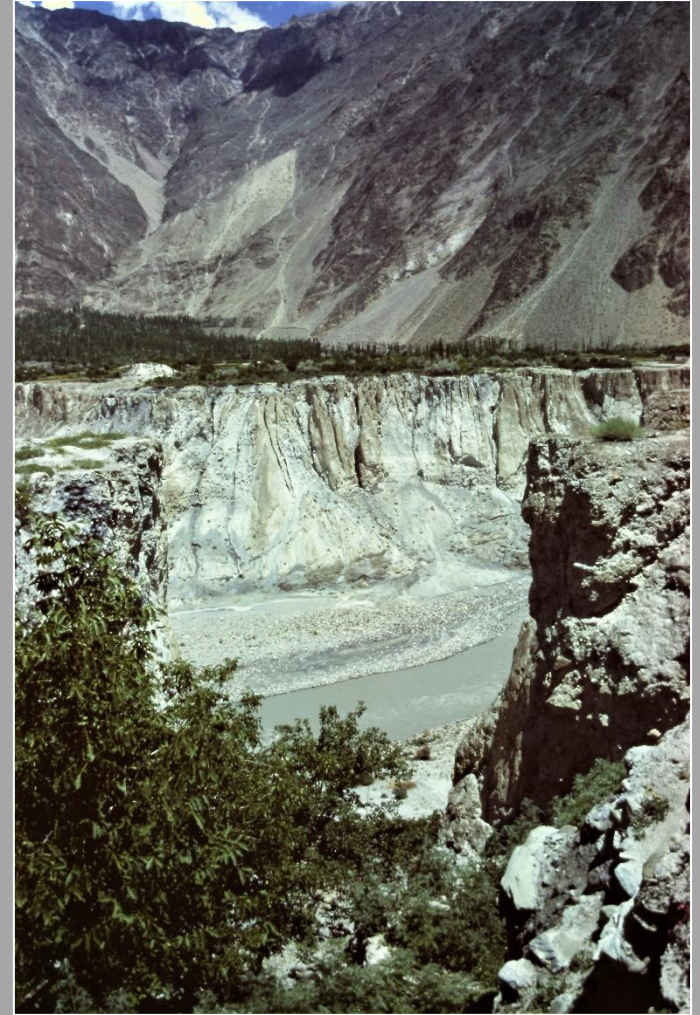


COP26 and IPCC

- World in 2021 was at +1.2°C
 - Pre-industrial 280 ppm CO₂
 - 1990: 350 ppm CO₂
 - 2022: 417+ ppm CO₂
- Trying to limit increase between +1.5° to +2°C
- At COP – NDC (commitments) will lead to at least +2.4°C
- Good outcomes
 - Methane, electric vehicles, stopping deforestation, planting trees, green finance
- But
 - No agreement to leave coal & fossil fuels in the ground
- Need 50% net emissions cut this decade: “to keep 1.5 alive”











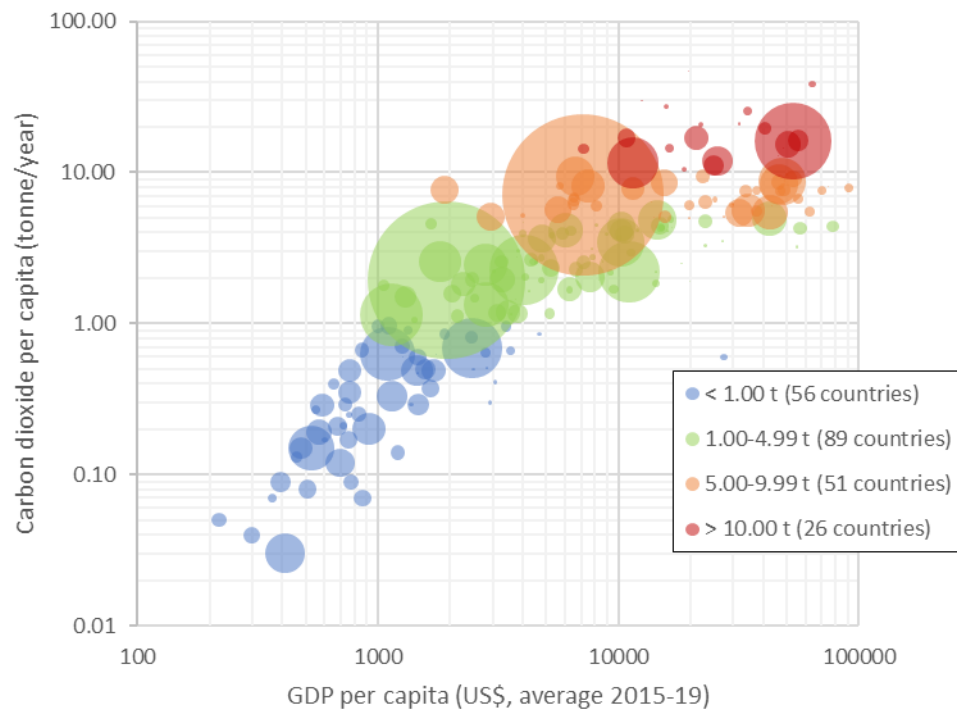


The Climate Crisis: some numbers

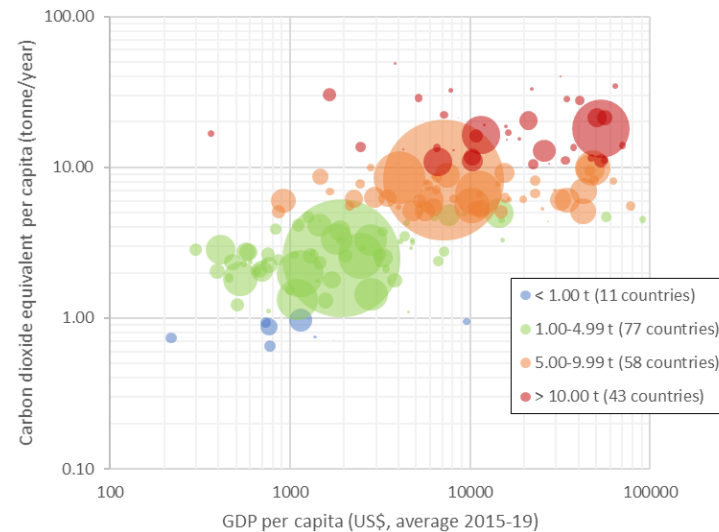
- World emits 53 Gt CO₂e per year
 - Equivalent to approx. 7 tonnes per person
- Carbon can be measured:
 - as C or CO₂e (to include methane, nitrous oxide and other GHGs)
 - As domestically-produced carbon and other GHGs
 - By including all emissions from supply chain (e.g forests cut for livestock feed)
- What matters:
 - The one system of the world and 7.8 billion people
 - If we reduce CO₂e per person to 1 tonne, then atmospheric C will returns to safe place of 350 ppm



Per capita carbon dioxide emissions (carbon only) by per capita GDP (countries = 222, populations by bubble size; world average 4.72 t/person)



Per capita carbon dioxide equivalent emissions (all greenhouse gases) by per capita GDP (countries = 189, populations by bubble size; world average 6.89 t/person)



Summary of features of four categories of 222 countries by per capita carbon emissions

Category (number of countries and population, 2019)	Title	Descriptor of current status	Average per capita carbon dioxide emissions within category	GDP range (per capita), US \$ (2018)	Ten example countries in each category
Category 1 56 countries 1.34 billion people	Poor	Lacking basics, in poverty, need to increase consumption	Less than 1.0 tonnes	Less than \$1000	Bangladesh, Burundi, Cambodia, Chad, Haiti, Kenya, Mali, Nepal, Samoa, Tanzania,
Category 2 89 countries 3.35 billion people	Rising	Some escaped poverty recently, creative, more aware of enough, need to substitute with green consumption	1.0-4.9 tonnes	\$1-10k	Algeria, Botswana, Brazil, Colombia, India, Mexico, Romania, Sweden, Thailand
Category 3 51 countries 2.32 billion people	Affluent	Already locked into material consumption, wanting more, restoration possible with cuts	5.0-10 tonnes	\$10-20k	Bahamas, China, Denmark, Germany, Italy, Japan, South Africa, Spain, UK
Category 4 26 countries 0.70 billion people	Excess	Excess consumption, not happier, redesign of economies required	10-50 tonnes	More than \$20k	Australia, Bahrain, Canada, Kazakhstan, Kuwait, Qatar, Russia, Saudi Arabia, UAE, USA

The climate crisis: inequality and social justice

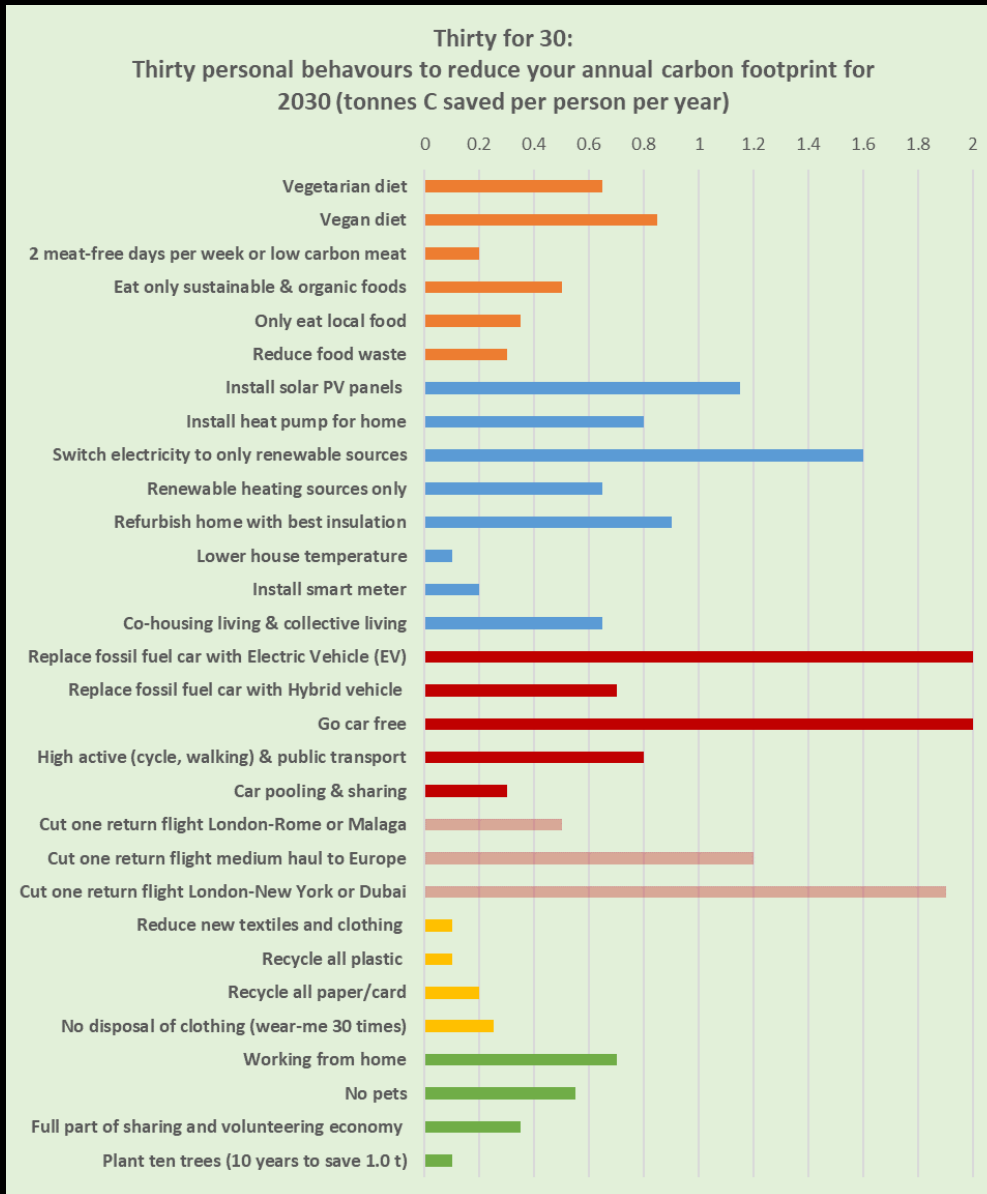
- Poorest countries
 - Less than 1 tonne per person
- Richest countries
 - More than 50 tonnes per person
- 80% of the world population need to reduce C emissions to 1 tonne
- 20% in 56 countries needs to increase consumption to escape poverty
- UK carbon
 - 5% (less than £12k income) 2.3 t
 - 85% (£12k to £54k income) 4.5 to 9.0 t
 - 9% (£54k to £170k income) 21.6 t
 - 1% (more than £170k income) 40.2 t to 55.0t



An analogy

- Temperature change:
 - Think not of weather
 - Think of the body temperature
 - Earth and bodies are homeostatic
- +1°C: fever.
- +2°C: fever is serious
- +3°C: organ & structural damage - hospital
- +4°C: high fever, death
- Some still talking calmly: Earth increases of +2°C to +4°C this century
- But predicted: cascades and crashes





- Need to cut from 7.7 to 1 tonne this decade (2020s)
- Two approaches:
 - Cut carbon
 - Increase good life choices
- Choose one new behaviour per year
- Start where you feel comfortable
- After one year, select another
- Tell someone else

A Good Life



- What is the good life, and how might it prevent the climate and biodiversity crises, and at the same time make us happier?
 - the term *good life* widely used,
 - suggests contentment and well-being,
 - a life with meaning and a sense of purpose,
 - a life good for us as individuals as well as for others,
 - implies obligations for people and nature,
 - key component of happiness
- *Buen vivir* (Bolivia, Ecuador & Colombia), *hygge* (Denmark), *ikigai* (Japan), *haoshenghuo* (China), *felicidad* (Spain), *bonheur* (France), *het goede leven* (Netherlands), *koselig* (Norway), *Gemütlichkeit* & *das gute Leben* (Germany)

The good life

- Seven common features daily
 - Healthy food
 - Togetherness
 - Connected to nature
 - Physical activity/mobility
 - Personal growth & learning
 - Ethical/spiritual framework
 - Sustainable consumption
- All of these are low carbon
- Japan & S Korea: exemplars















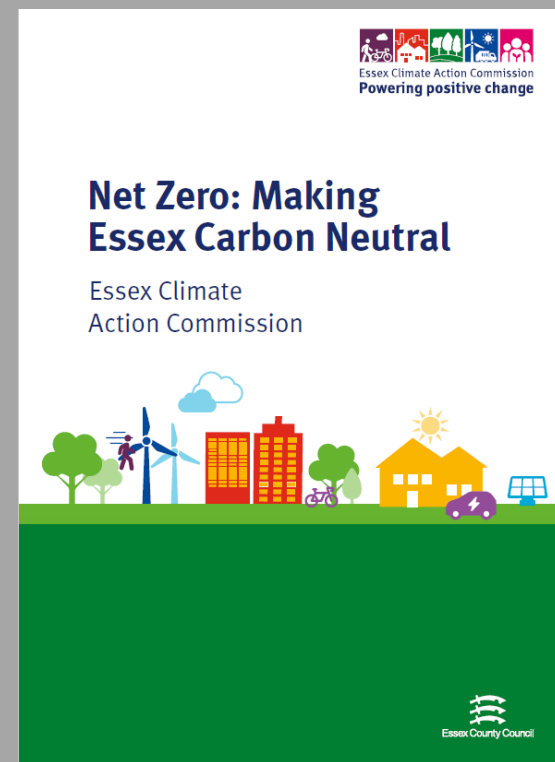
United Nations
Climate Change



- UN Race to Zero campaign
 - Committed to net-zero by 2050
 - Net cut of 50% by 2030
 - “Real economy actors”
 - Coalition: 1,049 cities, 67 regions, 5,235 businesses, 441 investors, 1,039 Higher Education institutions
 - 80% from cutting emissions
 - 20% max from carbon capture

Essex Climate Action Commission

- Report published mid-2021
 - Committed to net-zero county by 2050
 - Chair: Jules Pretty
- 100+ recommendations
 - Land use and farming
 - Green infrastructure (nature)
 - Energy
 - Transport
 - Housing design and guidelines
 - Dec 2021: Unanimous cross-party support in ECC
- Change required across whole of (every) county
 - 1.6 million people
 - 226,000 businesses
 - 275 parish and town councils; 450 schools



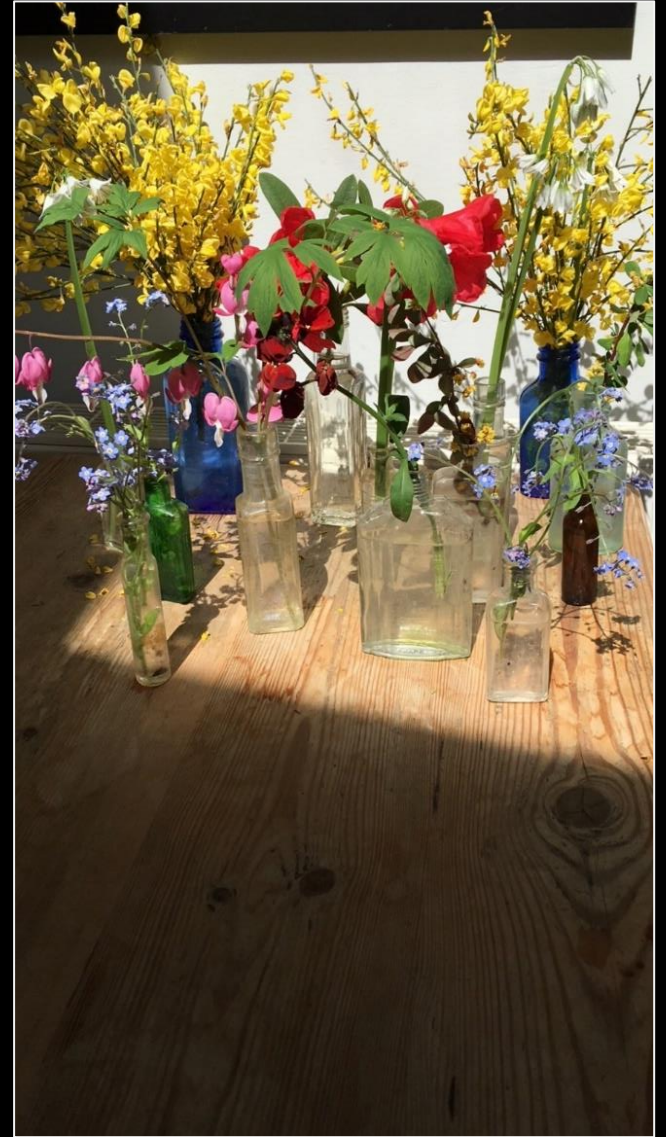
Regional action

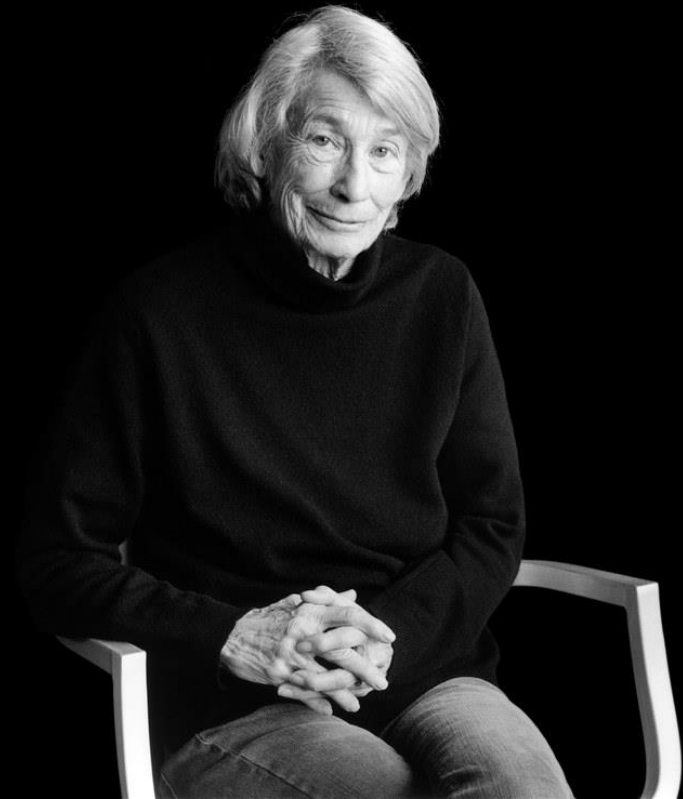
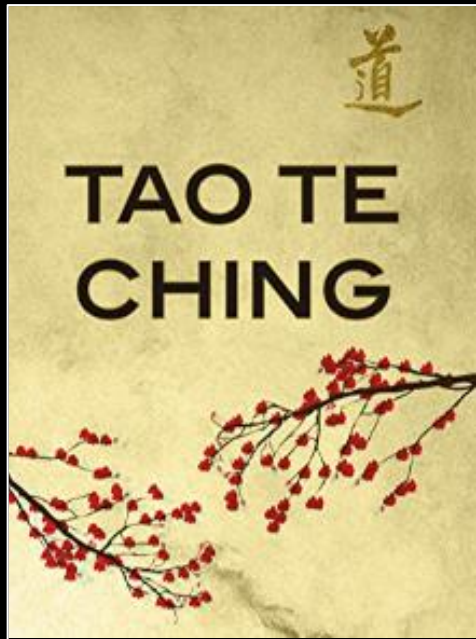
- UK Environmental Bill 2021
 - First for 30 years (looking out 25 years)
 - Office for Environmental Protection
 - Nature recovery strategies
- Place-Based Climate Action Commissions (PCAN)
 - Edinburgh, Aberdeen, Belfast, Yorkshire & Humber, Leeds, Lincoln, Surrey, Croydon, Kirklees, Essex
 - Partnerships bringing together people from the public, private and civic sectors
- Local action
 - Town Councils: Canvey Island, Wivenhoe, Saffron Waldon, Maldon
 - Parishes: Woodham Walter, Tollesbury

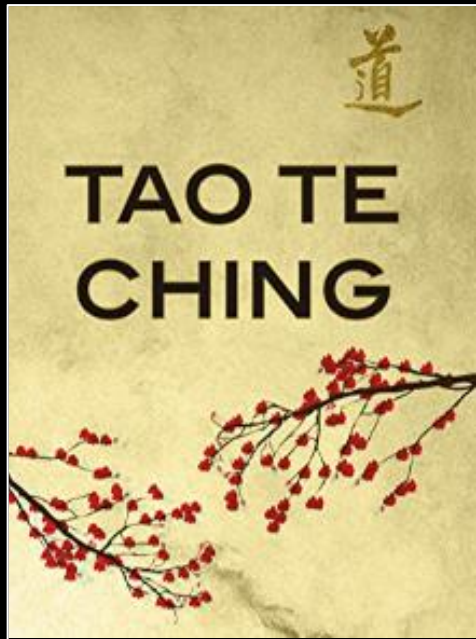


Journeys lie ahead

- They always do
- Good life:
 - Low carbon, high happiness
 - High nature, high happiness
 - Personal growth, high happiness
 - Build social, natural and human capital
- Towards slowness and sustainability





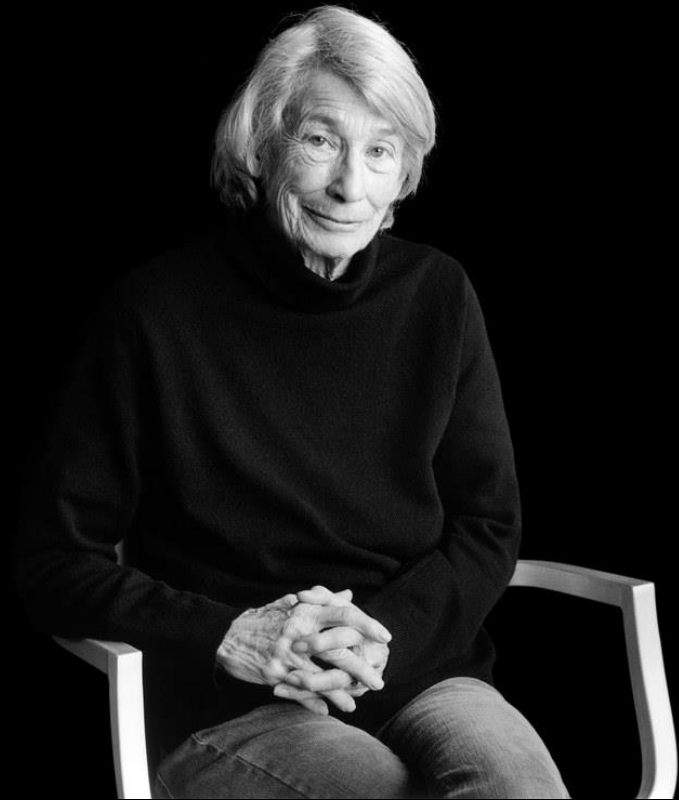


"The best things in life...
are not things"

Chapter 33

Instructions for Living a Life

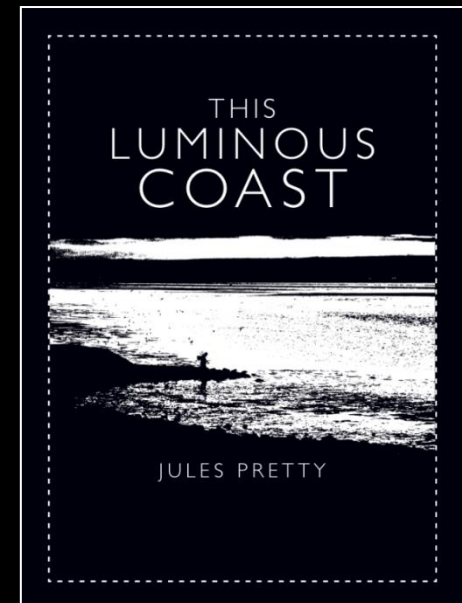
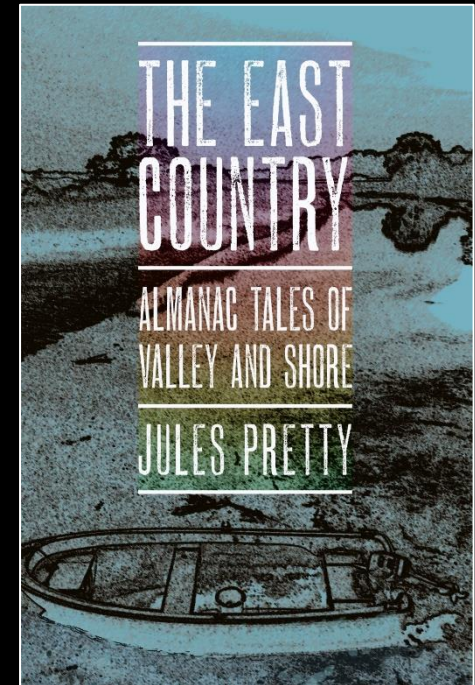
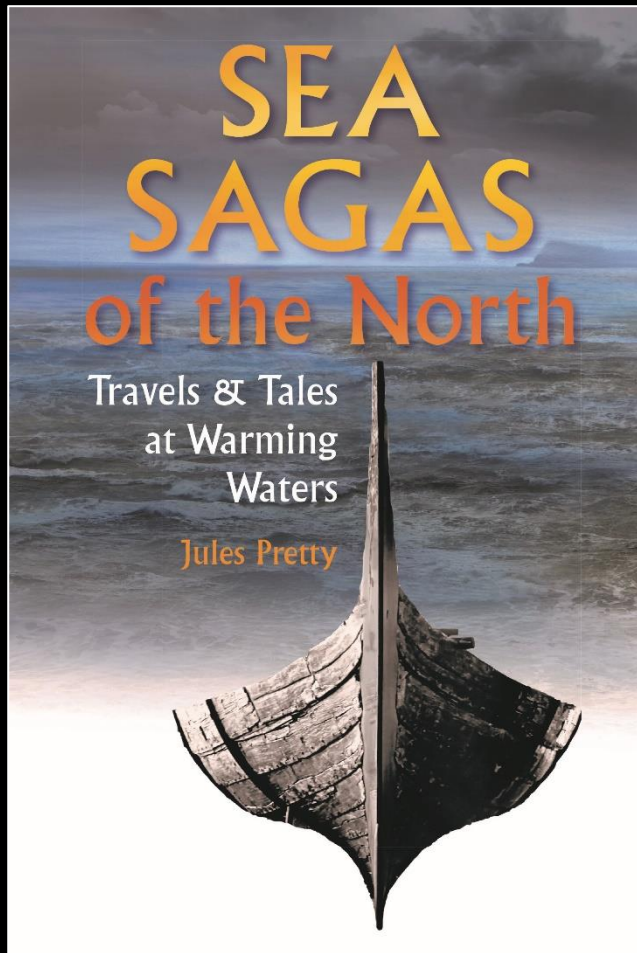
“Pay attention
Be astonished
Tell about it”



- Emily Dickinson

“Tell it slant”





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