

A Gift For Conversation: References. For Published Version 1.4, 1-Oct-2021

Chapter	Page #	Section	Ref #	Reference Word	Reference / Note
Pre-Intro	1	What is this book?	1	this one	Hello! Welcome to the references and footnotes.
Pre-Intro	2	Why do we need this book?	1	different story	"We've had information campaigns on Brexit and Covid. What about the climate?", Climate Outreach. https://climateoutreach.org/information-campaigns-brexit-covid-climate-crisis-cop26/
Pre-Intro	3	Why do we need this book?	2	1992	1992 Rio Convention on Climate Change, Page 6: https://unfccc.int/resource/docs/convkp/conveng.pdf
Pre-Intro	3	Why do we need this book?	3	2015	2015 Paris Climate Agreement: https://unfccc.int/sites/default/files/english_paris_agreement.pdf
Pre-Intro	3	Why do we need this book?	4	this promise	"Will 2021 be the year governments commit to quality climate education? A growing call for action ahead of the G-20", Brookings. https://www.brookings.edu/blog/education-plus-development/2021/06/02/will-2021-be-the-year-governments-commit-to-quality-climate-education-a-growing-call-for-action-ahead-of-the-g-20/
Chapter 1: All you need to know	5	What future do we want to see	1	clean and fresh	Much of this narrative is inspired by the book "The Future We Choose" by former UN Executive Secretary for Climate Change, Christiana Figueres, and Tom Rivett-Carnac, senior political strategist for the 2015 Paris Climate Agreement. https://www.waterstones.com/book/the-future-we-choose/christiana-figueres/tom-rivett-carnac/9781786580375
Chapter 1: All you need to know	6	What future do we want to see	2	than ever too	For an insightful exploration of the research surrounding the true causes of depression and anxiety, see "Lost Connections" by Johann Hari. Reading this, and comparing its recommendations to descriptions of the world in which we've acted on Climate Change, there are massive and obvious parallels. This gives me hope. https://www.waterstones.com/book/lost-connections/lohann-hari/9781408878729
Chapter 1: All you need to know	8	What exactly do we mean by Climate Change?	1	change	"Our warming world: How much difference will half a degree really make?", WWF. https://www.wwf.org.uk/updates/our-warming-world-how-much-difference-will-half-degree-really-make
Chapter 1: All you need to know	9	Do we know Climate Change is happening?	1	here, now	Several independent factors are explored by NASA in their "Climate Change: How do we know?" webpage: https://climate.nasa.gov/evidence/ However, the most comprehensive overview I've found of the effects of Climate Change to date can be found in "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, 'Chapter 1: 1'.
Chapter 1: All you need to know	9	Do we know Climate Change is happening?	2	bottom line	"Insurance and Climate Change", Ecologist. https://theecologist.org/2019/jan/11/insurance-and-climate-change
Chapter 1: All you need to know	9	Do we know Climate Change is happening?	3	far, far worse	"How insurance companies can prepare for risk from climate change", Deloitte. https://www2.deloitte.com/us/en/pages/financial-services/articles/insurance-companies-climate-change-risk.html
Chapter 1: All you need to know	11	How does Climate Change actually happen?	1	of years	"Greenhouse gas effect consistent over 420 million years", Phys.org. https://phys.org/news/2007-03-greenhouse-gas-effect-million-years.html
Chapter 1: All you need to know	11	How does Climate Change actually happen?	2	un-burned	Methane has a shorter lifetime in the atmosphere, but is 72 times more warming in its first 20 years. "Methane vs. Carbon Dioxide: A Greenhouse Gas Showdown", One Green Planet. https://www.onegreenplanet.org/animalsandnature/methane-vs-carbon-dioxide-a-greenhouse-gas-showdown/
Chapter 1: All you need to know	11	How does Climate Change actually happen?	3	release it	"Methane from new coal mines could cause greater warming than US coal plants", Institute of Engineering and Technology. https://eandt.theiet.org/content/articles/2021/03/methane-from-new-coal-mines-could-cause-greater-warming-than-us-coal-plants/
Chapter 1: All you need to know	11	How does Climate Change actually happen?	4	vast quantities	"Methane isn't just cow farts; it's also cow burps (and other weird facts you didn't know about this potent greenhouse gas)", TED. https://ideas.ted.com/methane-isnt-just-cow-farts-its-also-cow-burps-and-other-weird-facts-you-didnt-know-about-this-potent-greenhouse-gas/
Chapter 1: All you need to know	11	How does Climate Change actually happen?	5	in the world	Food and Agriculture Organisation of the UN: data on cow & sheep stocks from 2019, worldwide. http://www.fao.org/faostat/en/#data/QCL
Chapter 1: All you need to know	12	Do we know Climate Change is caused by us?	1	different ways	A search for "Proof for Climate Change" will return dozens of articles and papers exploring different and independent ways that evidence shows humans have changed our climate. I would recommend this sceptical examination of the data and how reliable it (YouTube video, [24:08]) https://www.youtube.com/watch?v=R7FAAfK78M
Chapter 1: All you need to know	12	Do we know Climate Change is caused by us?	2	their wealth	Divestment, the selling of investments into Fossil Fuel industries to mitigate climate change, is cited as a major concern to the profits of Fossil Fuel companies. "At last, divestment is hitting the fossil fuel industry where it hurts", Guardian. https://www.theguardian.com/commentisfree/2018/dec/16/divestment-fossil-fuel-industry-trillions-dollars-investments-carbon
Chapter 1: All you need to know	12	Do we know Climate Change is caused by us?	3	of dollars	"Not Just the Koch Brothers: New Drexel Study Reveals Funders Behind the Climate Change Denial Effort", Drexel University. https://drexel.edu/now/archive/2013/December/Climate-Change/
Chapter 1: All you need to know	12	Do we know Climate Change is caused by us?	4	campaigns	Fossil Fuel companies' knowledge of their role in Climate Change and its damaging effects as long ago as the 1960s has been extensively documented. One site compiling some of the evidence is https://exxonknew.org/ .
Chapter 1: All you need to know	12	Do we know Climate Change is caused by us?	5	closed doors	"In Video, Exxon Lobbyist Describes Efforts to Undercut Climate Action", New York Times https://www.nytimes.com/2021/06/30/climate/exxon-greenpeace-lobbyist-video.html
Chapter 1: All you need to know	13	Do we know Climate Change is caused by us?	6	the facts	"Fossil Fuels and Climate Change: The Facts", Client Earth. https://www.clientearth.org/latest/latest-updates/stories/fossil-fuels-and-climate-change-the-facts/
Chapter 1: All you need to know	16	Who can we trust about the climate?	1	facts was	Scientists Reach 100% Consensus on Anthropogenic Global Warming, J Powell, Bulletin of Science, Technology & Society, 2019 https://journals.sagepub.com/doi/abs/10.1177/0270467619886266

Chapter 1: All you need to know	17	Do we know Climate Change is bad? How bad?	1	more extreme	Carbon Brief's map of extreme weather events that have specific scientific studies into whether climate change provably made them more severe or more likely to have happened: https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world For heatwaves, see this scientific publication: Raymond, C. et al., Science Advances, 2020: 'The emergence of heat and humidity too severe for human tolerance'. https://advances.sciencemag.org/content/6/19/eaaw1838 .
Chapter 1: All you need to know	17	Do we know Climate Change is bad? How bad?	2	are deadly	Deadly Hurricanes: "How Climate Change is making hurricanes more dangerous", Yale Climate Connection, https://yaleclimateconnections.org/2019/07/how-climate-change-is-making-hurricanes-more-dangerous/ Increase of droughts: "Causes of Drought: What's the Climate Connection?", Union of Concerned Scientists. https://www.ucsusa.org/resources/drought-and-climate-change
Chapter 1: All you need to know	18	Do we know Climate Change is bad? How bad?	3	under attack	"Climate Change and Health", World Health Organisation. https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health See later sections of the book (What would the world be like at 4°C of warming?). One example is deadly heatwaves, just one of the many factors contributing to this danger: "Global heating pushes tropical regions towards limits of human livability", Guardian, https://www.theguardian.com/science/2021/mar/08/global-heating-tropical-regions-human-livability
Chapter 1: All you need to know	18	Do we know Climate Change is bad? How bad?	4	uninhabitable	The following references (and their titles) may sound alarming. But remember, the collapse of civilisation is only the most likely outcome should we not act on Climate Change now. Open letter signed by over 250 leading scientists and academics: "A warning on climate and the risk of societal collapse", Guardian. https://www.theguardian.com/environment/2020/dec/06/a-warning-on-climate-and-the-risk-of-societal-collapse
Chapter 1: All you need to know	18	Do we know Climate Change is bad? How bad?	5	civilisation	"'Collapse of Civilisation is the Most Likely Outcome': Top Climate Scientists", Resilience. https://www.resilience.org/stories/2020-06-08/collapse-of-civilisation-is-the-most-likely-outcome-top-climate-scientists/ "Yep, it's bleak, says expert who tested 1970s end-of-the-world prediction", Guardian, https://www.theguardian.com/environment/2021/jul/25/gaya-herrington-mit-study-the-limits-to-growth
Chapter 1: All you need to know	18	Do we know Climate Change is bad? How bad?	6	ever faced	"Climate Change 'Biggest Threat Modern Humans Have Ever Faced', World-Renowned Naturalist Tells Security Council, Calls for Greater Global Cooperation", United Nations. https://www.un.org/press/en/2021/sc14445.doc.htm
Chapter 1: All you need to know	19	How does a little heating cause so much disruption?	1	single day	Energy imbalance (energy in - energy out, per day) from scientific publication: Loeb, N. et al., Geophysical Research Letters, 2021: 'Satellite and Ocean Data Reveal Marked Increase in Earth's Heating Rate'. https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021GL093047 Hiroshima bomb energy from https://www.justintools.com/unit-conversion/energy.php?k1=hiroshima-bomb-explosion
Chapter 1: All you need to know	19	How does a little heating cause so much disruption?	2	our world	"The Global Conveyor Belt", US National Ocean Service. https://oceanservice.noaa.gov/education/tutorial_currents/05conveyor2.html
Chapter 1: All you need to know	20	How does a little heating cause so much disruption?	3	any heating	A thorough article with extensive references to scientific research papers: "The Vicious Climate-Wildfire Cycle", Union of Concerned Scientists. https://blog.ucsusa.org/carly-phillips/the-vicious-climate-wildfire-cycle/
Chapter 1: All you need to know	20	How does a little heating cause so much disruption?	4	to -19°C	"Hundreds of thousands remain without power as more snow is headed to Dallas-Fort Worth on heels of record cold", Dallas News, https://www.dallasnews.com/news/weather/2021/02/16/thousands-still-without-power-as-north-texas-reaches-record-low-temperature/
Chapter 1: All you need to know	20	How does a little heating cause so much disruption?	5	by 5°C	"North American heatwave broke records – and the climate models", Climate Change News. https://www.climatechangenews.com/2021/07/07/north-american-heatwave-broke-records-climate-models/
Chapter 1: All you need to know	20	How does a little heating cause so much disruption?	6	Climate Change	"3 things to know about the record-smashing heat wave baking the Pacific Northwest", Science News. https://www.sciencenews.org/article/pacific-northwest-heat-wave-climate-change-things-to-know "Heating Arctic may be to blame for snowstorms in Texas, scientists argue", Guardian. https://www.theguardian.com/science/2021/feb/17/arctic-heating-winter-storms-climate-change "Jet stream: Is climate change causing more 'blocking' weather events?", Carbon Brief. https://www.carbonbrief.org/jet-stream-is-climate-change-causing-more-blocking-weather-events
Chapter 1: All you need to know	21	Do we know Climate Change is fixable? What would it take?	1	uninhabitable	See Reference 4 of "Do we know Climate Change is bad? How bad" above.
Chapter 1: All you need to know	21	Do we know Climate Change is fixable? What would it take?	2	may be scarce	"Turn Down the Heat : Climate Extremes, Regional Impacts, and the Case for Resilience", Report for the World Bank by the Potsdam Institute for Climate Impact Research and Analytics. https://openknowledge.worldbank.org/handle/10986/14000 Summary of the report provided by GreenFacts.org: https://www.greenfacts.org/en/impacts-global-warming/1-2/index.htm#0
Chapter 1: All you need to know	24	Setting the scene with Sir David Attenborough 1: "Why aren't we acting then? If this threat is so urgent, why don't our actions show it?"	1	February 2021	"Sir David Attenborough on Climate and Security - Security Council Open VTC", YouTube video, [8:04]. https://www.youtube.com/watch?v=u715A1a6KYc
Chapter 2: Troubleshooting	27	Do we know Climate Change is fixable? What would it take?	1	PAIN'	Book: "Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change" by George Marshall. Published 2015. Page 47. https://www.waterstones.com/book/dont-even-think-about-it/george-marshall/9781632861023

Chapter 2: Troubleshooting	28	1: "Why aren't we acting then? If this threat is so urgent, why don't our actions show it?"	2	global inequality	"Britain Talks Climate" report by Climate Outreach, 2020. https://climateoutreach.org/reports/britain-talks-climate/
Chapter 2: Troubleshooting	31	4: "Sure it'd be nice to fix the environment and save the planet."	1	generation	For example, coastal flood damage alone in an optimistic "keeping global warming below 2°C" scenario is expected to reach \$11.7 Trillion by 2100 – 1/7th of the world's current economic output. This is just one factor of many. Reference for flooding cost: https://interactive.carbonbrief.org/impacts-climate-change-one-point-five-degrees-two-degrees/#
Chapter 2: Troubleshooting	32	5: "We have more pressing things to deal with first, like the economy, jobs and the NHS."	1	other issues	Report: "Co-benefits of climate change mitigation in the UK: What issues are the UK public concerned about and how can action on climate change help to address them?", Grantham Institute, Imperial College London, 2019. https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Co-benefits-of-climate-change-mitigation-in-the-UK.pdf
Chapter 2: Troubleshooting	32	5: "We have more pressing things to deal with first, like the economy, jobs and the NHS."	2	COVID-19	"Coronavirus and Air Pollution", Harvard School of Public Health. https://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-pollution/
Chapter 2: Troubleshooting	33	5: "We have more pressing things to deal with first, like the economy, jobs and the NHS."	3	companies	"Fossil fuel subsidies need global reform, say experts", Phys.org. https://phys.org/news/2020-10-fossil-fuel-subsidies-global-reform.html
Chapter 2: Troubleshooting	34	6: "It might be a big deal for some countries, but it won't affect us here in Britain."	1	times normal	"Record Breaking Rainfall", UK Met Office. https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2020/2020-winter-february-stats
Chapter 2: Troubleshooting	34	6: "It might be a big deal for some countries, but it won't affect us here in Britain."	2	40 years	"How extreme weather is affecting UK wheat crop - and what it means for bread prices", Independent. https://www.independent.co.uk/news/uk/home-news/bread-price-wheat-crop-uk-weather-climate-change-farmers-a9691596.html
Chapter 2: Troubleshooting	34	6: "It might be a big deal for some countries, but it won't affect us here in Britain."	3	countries	"How much flooding is in the UK's future? A look at the IPCC report", Carbon Brief. https://www.carbonbrief.org/how-much-flooding-is-in-the-uks-future-a-look-at-the-ipcc-report
Chapter 2: Troubleshooting	35	7: "But what about China's emissions? What about India? And the USA?"	1	don't act	Kang, S. & Eltahir, E., Nature Communications, 2018: 'North China Plain threatened by deadly heatwaves due to climate change and irrigation'. https://www.nature.com/articles/s41467-018-05252-y . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 173.
Chapter 2: Troubleshooting	35	7: "But what about China's emissions? What about India? And the USA?"	2	Climate Change	Wang, B. and Zhou, Q., WIRE Climate Change, 2020: 'Climate change in the Chinese mind: An overview of public perceptions at macro and micro levels'. https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wcc.639
Chapter 2: Troubleshooting	36	8: "Overpopulation is the real issue, there's simply too many of us."	1	of writing	https://www.worldometers.info/world-population/ , measured July 2021.
Chapter 2: Troubleshooting	36	8: "Overpopulation is the real issue, there's simply too many of us."	2	Nigerian	Report: "Fossil CO2 and GHG emissions of all world countries", Publications Office of the European Union. https://op.europa.eu/en/publication-detail/-/publication/71b9adf3-f3dc-11ea-991b-01aa75ed71a1
Chapter 2: Troubleshooting	36	8: "Overpopulation is the real issue, there's simply too many of us."	3	the poor	There are multiple sources for this, but one interesting one is this tool: https://www.carbon.place/ , which splits England into local communities and indicates the emissions of that community. The 10% least deprived communities emit more than 3x the carbon on average than the 10% most deprived. See also "Carbon emissions of richest 1 percent more than double the emissions of the poorest half of humanity", Oxfam https://www.oxfam.org/en/press-releases/carbon-emissions-richest-1-percent-more-double-emissions-poorest-half-humanity
Chapter 2: Troubleshooting	37	9: "Climate Change might be a big problem for future generations. But not for me."	1	and chance	Book: "Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change" by George Marshall. Published 2015. https://www.waterstones.com/book/dont-even-think-about-it/george-marshall/9781632861023
Chapter 2: Troubleshooting	38	10: "Look at how fast things have developed - technology will save us."	1	this trap	"Report: UK Government's net-zero plans 'over-reliant' on biomass and carbon capture", edie. https://www.edie.net/news/6/Report--UK-Government-s-net-zero-plans-are--over-reliant--on-carbon-capture-technologies/
Chapter 2: Troubleshooting	41	12: "Okay, but I'm already doing my bit."	1	this crisis	"Lifestyle Changes Aren't Enough to Save the Planet. Here's What Could", TIME. https://time.com/5669071/lifestyle-changes-climate-change/
Chapter 2: Troubleshooting	43	Story One: An entrepreneur's vision brings light to dark places	1	Foundation	https://litteroflight.org/
Chapter 3: What's happened	45	Chapter 3: What's Happened	1	1896	Arrhenius, S., Philosophical Magazine and Journal Of Science, 1896: 'On the influence of carbonic acid in the air upon the temperature of the ground'. https://www.rsc.org/images/Arrhenius1896_tcm18-173546.pdf
Chapter 3: What's happened	46	Haven't we already made great progress to tackle Climate Change?	1	future results	For the UK: "Climate Change Committee warns of 'gulf' between promises and action", Big Issue. https://www.bigissue.com/latest/environment/climate-change-committee-warns-of-gulf-between-promises-and-action/
Chapter 3: What's happened	46	Haven't we already made great progress to tackle Climate Change?	2	undertaken	Worldwide: Climate Action Tracker is a fantastic resource for examining the promises, policies and actions of different countries. https://climateactiontracker.org/countries/ Any search for "climate change action urgency" will yield explanations of this, or see later sections of the book. One example: "Climate change needs 'immediate' action or the world could face economic damage of \$1.7trn a year by 2025, experts warn", Sky News. https://news.sky.com/story/climate-change-needs-immediate-action-or-the-world-could-face-economic-damage-of-1-7trn-a-year-by-2025-experts-warn-12260906

Chapter 3: What's happened	47	5 Reasons Why Climate Change Hasn't Been Fixed	1	environmentalists	Book: "Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change" by George Marshall. Published 2015. https://www.waterstones.com/book/dont-even-think-about-it/george-marshall/9781632861023
Chapter 3: What's happened	48	5 Silly Reasons Why Climate Change Hasn't Been Fixed	2	under a door	The Bystander Effect is nicely demonstrated by Derren Brown on the show 'Hero at 30,000 Feet': https://youtu.be/zSaFfRc-T18?t=159
Chapter 3: What's happened	49	Where did "climate scepticism" come from? Weren't scientists divided?	1	describes	See the detailed report from the investigation at https://www.smokeandfumes.org/fumes . Quote from embedded video: https://vimeo.com/162411486
Chapter 3: What's happened	50	Where did "climate scepticism" come from? Weren't scientists divided?	2	responsible	See original document at https://www.smokeandfumes.org/documents/16 . More information about the context of the report can be found at: https://www.smokeandfumes.org/fumes/moments/6
Chapter 3: What's happened	50	Where did "climate scepticism" come from? Weren't scientists divided?	3	findings	See https://www.smokeandfumes.org/fumes/moments/6
Chapter 3: What's happened	50	Where did "climate scepticism" come from? Weren't scientists divided?	4	science	See https://www.smokeandfumes.org/fumes/moments/7
Chapter 3: What's happened	52	Where did "climate scepticism" come from? Weren't scientists divided?	5	again and again	Scientists Reach 100% Consensus on Anthropogenic Global Warming, J Powell, Bulletin of Science, Technology & Society, 2019 https://journals.sagepub.com/doi/abs/10.1177/0270467619886266
Chapter 3: What's happened	52	Where did "climate scepticism" come from? Weren't scientists divided?	6	extraction	"Revealed: 9 examples of fossil fuel company greenwashing", Client Earth. https://www.clientearth.org/latest/latest-updates/news/revealed-9-examples-of-fossil-fuel-company-greenwashing/
Chapter 3: What's happened	52	Where did "climate scepticism" come from? Weren't scientists divided?	7	emissions	"Shell ordered to slash emissions 45% by 2030 in historic court ruling", Euractiv. https://www.euractiv.com/section/energy/news/shell-ordered-to-slash-emissions-45-by-2030-in-historic-court-ruling/
Chapter 3: What's happened	53	Haven't fossil fuels led to the best standard of living in human history?	1	countries	"The IEA's Damascene conversion: net zero makes us richer and cuts energy costs for the poor", Telegraph, https://www.telegraph.co.uk/business/2021/05/20/ieas-damascene-conversion-net-zero-makes-us-richer-cuts-energy/
Chapter 3: What's happened	55	Story Two: Taking Shell to court	1	to court	"The Climate Case against Shell", Friends of the Earth Netherlands (milieudefensie) https://en.milieudefensie.nl/climate-case-shell/climate-case-against-shell
Chapter 3: What's happened	55	Story Two: Taking Shell to court	2	2030	"Shell ordered to slash emissions 45% by 2030 in historic court ruling", Euractiv. https://www.euractiv.com/section/energy/news/shell-ordered-to-slash-emissions-45-by-2030-in-historic-court-ruling/
Chapter 4: What's going on	58	What is happening now with Climate Change?	1	Climate Change	Twitter thread from Climate Scientist Daniel Swain: https://twitter.com/Weather_West/status/1061316105308753920
Chapter 4: What's going on	58	What is happening now with Climate Change?	2	8 hours	"Paradise lost: How California's deadliest wildfire unfolded", CNN. edition.cnn.com/2018/11/17/us/california-fires-wrap/index.html . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 42.
Chapter 4: What's going on	58	What is happening now with Climate Change?	3	the 1970s	"Factcheck: How global warming has increased US wildfires", Carbon Brief. https://www.carbonbrief.org/factcheck-how-global-warming-has-increased-us-wildfires
Chapter 4: What's going on	59	What is happening now with Climate Change?	4	civil war	Kelley, C. et al., PNAS, 2015: 'Climate change in the Fertile Crescent and implications of the recent Syrian drought'. https://www.pnas.org/content/early/2015/02/23/1421533112.abstract . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 47.
Chapter 4: What's going on	59	What is happening now with Climate Change?	5	soon force	"Climate crisis could displace 1.2bn people by 2050, report warns", Guardian. https://www.theguardian.com/environment/2020/sep/09/climate-crisis-could-displace-12bn-people-by-2050-report-warns
Chapter 4: What's going on	61	What is happening with nature and biodiversity?	1	extinction	"Climate change and mistiming: modelling phenology in great tits", University of Oxford Department of Zoology. https://www.zoo.ox.ac.uk/article/modelling-extinction-great-tits-and-winter-moth-caterpillars
Chapter 4: What's going on	61	What is happening with nature and biodiversity?	2	500 years	"Extinctions", Our World In Data. https://ourworldindata.org/extinctions#how-many-species-have-gone-extinct
Chapter 4: What's going on	61	What is happening with nature and biodiversity?	3	that exist	Report: "Global Assessment Report on Biodiversity and Ecosystem Services", IPBES. https://ipbes.net/global-assessment
Chapter 4: What's going on	61	What is happening with nature and biodiversity?	4	scientists	"Biodiversity crisis is worse than climate change, experts say", Science Daily. https://www.sciencedaily.com/releases/2012/01/120120010357.htm
Chapter 4: What's going on	61	What is happening with nature and biodiversity?	5	insects	Youtube video with ecologists Dr Aaron Thierry and Dr Charlie Gardner: "When Academics Become Activists", [45:40]. https://youtu.be/ScG4H-zZNYg
Chapter 4: What's going on	61	What is happening with nature and biodiversity?	5	insects	"Pollinators under threat - so what?" UN Environment Programme. https://www.unep.org/news-and-stories/story/pollinators-under-threat-so-what
Chapter 4: What's going on	62	How much deforestation is happening?	1	0.7 seconds	Calculation for 25m by 10m swimming pool, based on figures from: "Amazon deforestation highest for 12 years, official data confirms", Greenpeace. https://www.greenpeace.org.uk/news/amazon-deforestation-highest-for-12-years-official-data-confirms/
Chapter 4: What's going on	62	How much deforestation is happening?	2	this time	The Global Forest Watch website provides tools to monitor historical forest loss. See https://gfw.global/3Axzip8 for 2020 global forest loss.
Chapter 4: What's going on	62	How much deforestation is happening?	3	fast food	"Revealed: UK supermarket and fast-food chicken linked to deforestation in Brazil", Guardian. https://www.theguardian.com/environment/2020/nov/25/revealed-uk-supermarket-and-fast-food-chicken-linked-to-brazil-deforestation-soy-soya
Chapter 4: What's going on	62	How much deforestation is happening?	3	fast food	And, "Supermarkets under pressure to drop JBS following Amazon deforestation allegations", The Grocer. https://www.thegrocer.co.uk/sourcing/supermarkets-under-pressure-to-drop-jbs-following-amazon-deforestation-allegations/646810.article

Chapter 4: What's going on	62	How much deforestation is happening?	4	saplings	"When It Comes to the Climate, Older Trees Do It Better", TIME. https://science.time.com/2014/01/15/study-shows-older-trees-absorb-more-carbon/ References scientific publication: Stephenson, N. L. et al, Nature, 2014: 'Rate of tree carbon accumulation increases continuously with tree size'.
Chapter 4: What's going on	64	How can we deal with COVID and with Climate Change at the same time?	1	recovery spending	"UK government falters in delivering green recovery", Energy Monitor. https://energymonitor.ai/policy/green-deals/uk-government-falters-delivering-green-covid-19-recovery-plan
Chapter 4: What's going on	66	What are governments doing about Climate Change now?	1	Emergency'	"UK becomes first country to declare a 'climate emergency'", The Conversation. https://theconversation.com/uk-becomes-first-country-to-declare-a-climate-emergency-116428
Chapter 4: What's going on	66	What are governments doing about Climate Change now?	2	realise this	"UK risks missing 2035 climate target by huge margin, advisers warn", New Scientist. https://www.newscientist.com/article/2281950-uk-risks-missing-2035-climate-target-by-huge-margin-advisers-warn/
Chapter 4: What's going on	66	What are governments doing about Climate Change now?	3	climate policy	See the Climate Action Tracker page on Morocco: https://climateactiontracker.org/countries/morocco/
Chapter 4: What's going on	67	What does 'Net Zero by 2050' mean? Is that what scientists say is the answer?	1	deadly mistake	"Climate scientists: concept of net zero is a dangerous trap", The Conversation. https://theconversation.com/climate-scientists-concept-of-net-zero-is-a-dangerous-trap-157368
Chapter 4: What's going on	67	What does 'Net Zero by 2050' mean? Is that what scientists say is the answer?	2	anyway	"World can limit global warming to 1.5C 'without BECCS'", Carbon Brief. https://www.carbonbrief.org/world-can-limit-global-warming-to-onepointfive-without-beccs
Chapter 4: What's going on	69	The Future Technology Con	1	the Earth	1: 0.6 hectares per ton CO2 * (½ of total emissions of 50 Gigatons CO2) gives 15 giga-hectares. Earth's entire land area is 14.8 giga-hectares. 0.6 hectares per ton CO2 taken as a mid-range estimate, with requirements from 0.1 up to 1.7 hectares per ton also suggested depending on carbon source (see p43). Source: Smith, P et al., Nature Climate Change, 2016: 'Biophysical and economic limits to negative CO2 emissions'. https://www.nature.com/articles/nclimate2870.epdf?sharing_token=Xdg1v2J70mR1hNohqj_ABNRgn0jAjWel9jnR3ZoTv0MxSj-W2yUGL_NoJNGCjQIMbhC-uttb6OBT9sfGvk8biomE7pEW20UZ4f26Ozo-G6CyOXpCkilsSnfYmSBqGEbVqBkhhxdRoPc-ahCL5K4NJSq_JXFZooovuoiSFqFch2_9D-wx6NJKvSSzUt8li4xH34vuf1PdEEUGbo0ky_mwJHT6Gxg5a5_nNnaWX1_Yd-w%3D&tracking_referrer=www.carbonbrief.org
Chapter 4: What's going on	69	The Future Technology Con	2	current emissions	Calculation based on Izaikowitz, D., Frontiers In Climate, 2021: 'Carbon Purchase Agreements, Dactories, and Supply-Chain Innovation: What Will It Take to Scale-Up Modular Direct Air Capture Technology to a Gigatonne Scale'. https://internal-journal.frontiersin.org/articles/10.3389/fclim.2021.636657/full
Chapter 4: What's going on	70	The Future Technology Con	3	experiment	Book: "How to avoid a climate disaster: The solutions we have and the breakthroughs we need" by Bill Gates. https://www.waterstones.com/book/how-to-avoid-a-climate-disaster/bill-gates/9780241448304
Chapter 4: What's going on	70	The Future Technology Con	4	every year	The World Counts: https://www.theworldcounts.com/challenges/planet-earth/air/air-pollution-deaths-per-year/story
Chapter 4: What's going on	70	The Future Technology Con	5	us hope	"World can limit global warming to 1.5C 'without BECCS'", Carbon Brief. https://www.carbonbrief.org/world-can-limit-global-warming-to-onepointfive-without-beccs
Chapter 4: What's going on	72	What's 'Greenwashing'? Is it dangerous?	1	expansion	"What is greenwashing?" Ethical Consumer. https://www.ethicalconsumer.org/transport-travel/what-greenwashing
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	2	in 2019	"Unpaid cost to society from fossil CO2 released from UK incinerators", UKWIN. https://ukwin.org.uk/facts/
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	3	combined	"Legal challenge over UK's exclusion of incinerators from emissions target", Guardian. https://www.theguardian.com/environment/2020/aug/25/legal-challenge-uk-exclusion-waste-incinerators-emissions-trading-scheme
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	4	toxic waste	"Incinerators Harm Air Quality", UKWIN. https://ukwin.org.uk/oppose-incineration/#airquality
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	5	recycling	"Incineration Versus Recycling: In Europe, A Debate Over Trash", Yale Environment 360. https://e360.yale.edu/features/incineration_versus_recycling_in_europe_a_debate_over_trash
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	6	deprived areas	"UK waste incinerators three times as likely to be in deprived areas", Guardian. https://www.theguardian.com/environment/2020/jul/31/uk-waste-incinerators-three-times-more-likely-to-be-in-deprived-areas
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	7	energy parks'	"The new green face of incineration technology", Ecologist. https://theecologist.org/2010/may/18/new-green-face-incineration-technology
Chapter 4: What's going on	73	What's 'Greenwashing'? Is it dangerous?	8	greenwashing	"New independent group to help tackle 'greenwashing'", GOV.UK https://www.gov.uk/government/news/new-independent-group-to-help-tackle-greenwashing
Chapter 5: What's going to happen	76	What exactly do you mean by 1.5°C of warming?	1	by 1.2°C	"The CAT Thermometer", Climate Action Tracker. https://climateactiontracker.org/global/cat-thermometer/
Chapter 5: What's going to happen	80	What would the world be like if humanity manages to stay below 1.5 C?	1	shortages	"Democracy and diversity can mend broken food systems - final diagnosis from UN right to food expert", SRFood, http://www.srfood.org/en/democracy-and-diversity-can-mend-broken-food-systems-final-diagnosis-from-un-right-to-food-expert . Also "The Planetary Health Diet", EAT Forum. https://eatforum.org/eat-lancet-commission/the-planetary-health-diet-and-vou/
Chapter 5: What's going to happen	80	What would the world be like if humanity manages to stay below 1.5 C?	2	energy	"Desalination powered by renewable energy", Water Scarcity Atlas. https://waterscarcityatlas.org/desalination-powered-by-renewable-energy/
Chapter 5: What's going to happen	81	What would the world be like if humanity manages to stay below 1.5 C?	3	half the globe	Book: "Half-Earth: Our Planet's Fight for Life". E. O. Wilson Biodiversity Foundation. https://eowilsonfoundation.org/half-earth-our-planet-s-fight-for-life/

Chapter 5: What's going to happen	81	What would the world be like if humanity manages to stay below 1.5 C?	4	happy	Twitter thread from Professor of Social Ecology and Ecological Economics, Prof Julia Steinberger: https://twitter.com/JKSteinberger/status/1410178895291244544 Thread discusses scientific publication: Vogel, J. et al., Global Environmental Change, 2021: 'Socio-economic conditions for satisfying human needs at low energy use: An international analysis of social provisioning' https://www.sciencedirect.com/science/article/pii/S0959378021000662?via%3Dihub
Chapter 5: What's going to happen	81	What would the world be like if humanity manages to stay below 1.5 C?	5	emissions again	Below 1.5 is as safe as possible: 2 degrees of warming is terrifyingly dangerous: "Climate 'tipping points' could push us past the point-of-no-return after less than 2 degrees of warming", Live Science. https://www.livescience.com/climate-domino-effects-close.html
Chapter 5: What's going to happen	83	How can humanity prepare for a world warmed by 1.5°C?	1	most affected	There are multiple sources for this obvious point, but one example: "Environmental Refugees (Climate Change and How it Affects People's Lives)", Reset. https://en.reset.org/knowledge/environmental-refugees-%E2%80%93-how-climate-change-affects-peoples-lives
Chapter 5: What's going to happen	86	What would the world be like if humanity reaches 2°C of warming?	1	Malaria	"Mosquito-borne diseases could reach extra 'one billion people' as climate warms", Carbon Brief. https://www.carbonbrief.org/mosquito-borne-diseases-could-reach-extra-one-billion-people-as-climate-warms . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 77 onwards.
Chapter 5: What's going to happen	86	What would the world be like if humanity reaches 2°C of warming?	2	grain crops	Mortality: Dmitry, S. et al., Epidemiology, 2015: 'Long-term impact of moscow heat wave and wildfires on mortality'. https://journals.lww.com/epidem/Fulltext/2015/03000/Long_Term_Impact_of_Moscow_Heat_Wave_and_Wildfires.30.aspx Grain crops: "Russian heat wave 'had both manmade and natural causes'", University of Oxford. https://www.ox.ac.uk/news/2012-02-21-russian-heat-wave-had-both-manmade-and-natural-causes For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 87
Chapter 5: What's going to happen	86	What would the world be like if humanity reaches 2°C of warming?	3	European summer	Suarez-Gutierrez, L. et al, Environmental Research Letters, 2018: 'Internal variability in European summer temperatures at 1.5 °C and 2 °C of global warming'. https://iopscience.iop.org/article/10.1088/1748-9326/aaba58 . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 88.
Chapter 5: What's going to happen	86	What would the world be like if humanity reaches 2°C of warming?	4	to drought	"The impacts of climate change at 1.5C, 2C and beyond." Carbon Brief. https://interactive.carbonbrief.org/impacts-climate-change-one-point-five-degrees-two-degrees/
Chapter 5: What's going to happen	87	What would the world be like if humanity reaches 2°C of warming?	5	their yields	Zhao, C. et al., PNAS, 2017: 'Temperature increase reduces global yields of major crops in four independent estimates'. https://www.pnas.org/content/114/35/9326
Chapter 5: What's going to happen	87	What would the world be like if humanity reaches 2°C of warming?	6	every year	1/7th of the world's current economic output. Reference for flooding cost: https://interactive.carbonbrief.org/impacts-climate-change-one-point-five-degrees-two-degrees/#
Chapter 5: What's going to happen	88	How can humanity prepare for a world warmed by 2°C?	1	destroyed	Numbers: "Climate crisis could displace 1.2bn people by 2050, report warns", Guardian. https://www.theguardian.com/environment/2020/sep/09/climate-crisis-could-displace-12bn-people-by-2050-report-warns
Chapter 5: What's going to happen	89	How can humanity prepare for a world warmed by 2°C?	2	numbers	Injustice: "Climate Justice: 5 inequalities of climate change explained", ConcernUSA. https://www.concernusa.org/storv/climate-justice-inequities-climate-change/
Chapter 5: What's going to happen	89	How can humanity prepare for a world warmed by 2°C?	3	to move	"Limiting global warming to 2 degrees 'inadequate', scientists say", Reuters. https://www.reuters.com/article/us-climatechange-temperature-idUSKBN0NM40820150501
Chapter 5: What's going to happen	89	How can humanity prepare for a world warmed by 2°C?	4	by 2100	"The climate crisis will create two classes: those who can flee, and those who cannot.", Guardian. https://www.theguardian.com/commentisfree/2021/jul/07/global-heating-climate-crisis-heat-two-classes Map based on Climate Central 'Surging Seas' visualiser: https://coastal.climatecentral.org/map/7/9.6219/55.5753/?theme=sea_level_rise&map_type=year&basemap=roadmap&contiguous=true&elevation_model=best_available&forecast_year=2100&pathway=rcp45&percentile=p95&refresh=true&return_level=return_level_1&slr_model=kopp_2017
Chapter 5: What's going to happen	91	What are climate feedback loops?	1	heat up	Search 'Ice Albedo Feedback' for more information. One example: https://www.colorado.edu/bartlettcenter/2017/08/30/what-ice-albedo-feedback
Chapter 5: What's going to happen	92	What are climate feedback loops?	2	fine balance	Zemp, D. C., et al., Nature Communications, 2017: 'Self-amplified Amazon forest loss due to vegetation-atmosphere feedbacks'. https://www.nature.com/articles/ncomms14681 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 105.
Chapter 5: What's going to happen	92	What are climate feedback loops?	3	animal food	"Meat, soya, fire and disease: how the Amazon rainforest is breaking down." Greenpeace. https://www.greenpeace.org.uk/news/meat-soya-fire-disease-amazon-rainforest-breaking-down/
Chapter 5: What's going to happen	92	What are climate feedback loops?	4	quantities	As of July 2021, the Amazon already emits more CO2 than it absorbs due to continued deforestation and human-made fires. "Climate change: Amazon regions emit more carbon than they absorb", BBC. https://www.bbc.co.uk/news/science-environment-57839364
Chapter 5: What's going to happen	93	What are tipping points?	1	triggered	Scientific publication: Lenton, T. M. et al., Nature, 2019: 'Climate tipping points - too risky to bet against'. https://www.nature.com/articles/d41586-019-03595-0 More public-facing discussion of tipping points: "Explainer: Nine 'tipping points' that could be triggered by climate change", Carbon Brief, https://www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change
Chapter 5: What's going to happen	94	What are some examples of tipping points? Permafrost Melting	1	millenia	"There are diseases hidden in ice, and they are waking up", BBC Earth. https://www.bbc.com/earth/story/20170504-there-are-diseases-hidden-in-ice-and-they-are-waking-up
Chapter 5: What's going to happen	94	What are some examples of tipping points? Permafrost Melting	2	world	Hjort, J. et al., Nature Communications, 2018: 'Degradation permafrost puts Arctic infrastructure at risk by mid-century'. https://www.nature.com/articles/s41467-018-07557-4 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 72.

Chapter 5: What's going to happen	94	What are some examples of tipping points? Permafrost Melting	3	release	Comyn-Platt, E. et al., Nature Geoscience, 2018: 'Carbon budgets for 1.5 and 2 °C targets lowered by natural wetland and permafrost feedbacks'
Chapter 5: What's going to happen	95	What are some examples of tipping points? Ocean Current Shutdown	1	ice sheets	Climate tipping points could topple like dominoes, warn scientists', Guardian. https://www.theguardian.com/environment/2021/jun/03/climate-tipping-points-could-topple-like-dominoes-warn-scientists
Chapter 5: What's going to happen	95	What are some examples of tipping points? Ocean Current Shutdown	2	altogether	"Guest post: Could the Atlantic Overturning Circulation 'shut down'?", Carbon Brief. https://www.carbonbrief.org/guest-post-could-the-atlantic-overturing-circulation-shut-down
Chapter 5: What's going to happen	95	What are some examples of tipping points? Ocean Current Shutdown	3	grow food	Ritchie, P. D. L. et al., Nature Food, 2020: 'Shifts in national land use and food production in Great Britain after a climate tipping point'.
Chapter 5: What's going to happen	96	What are some examples of tipping points? Further Tipping Points	1	so far	Explainer: Nine 'tipping points' that could be triggered by climate change, Carbon Brief, https://www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change
Chapter 5: What's going to happen	96	What are some examples of tipping points? Further Tipping Points	2	above 1.5°C	Lenton, T. M. et al., Nature, 2019: 'Climate tipping points - too risky to bet against'. https://www.nature.com/articles/d41586-019-03595-0
Chapter 5: What's going to happen	96	What are some examples of tipping points? Further Tipping Points	3	cascade'	Climate tipping points could topple like dominoes, warn scientists', Guardian. https://www.theguardian.com/environment/2021/jun/03/climate-tipping-points-could-topple-like-dominoes-warn-scientists
Chapter 5: What's going to happen	96	What are some examples of tipping points? Further Tipping Points	4	likely trigger	"Atlantic Ocean circulation at weakest in a millennium, say scientists", Guardian. https://www.theguardian.com/environment/2021/feb/25/atlantic-ocean-circulation-at-weakest-in-a-millennium-say-scientists
Chapter 5: What's going to happen	97	What would the world be like at 3°C of warming?	1	above 2-3°C	Salazar, L.F. & Nobre, C., 2010: 'Climate change and thresholds of biome shifts in Amazonia', Geophysical Research Letters, 37, L17706 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 155.
Chapter 5: What's going to happen	97	What would the world be like at 3°C of warming?	2	the Amazon	"Fires in Amazon forest rose 30% in 2019", Thomson Reuters Foundation. https://news.trust.org/item/20200109012321-xgzmf/
Chapter 5: What's going to happen	97	What would the world be like at 3°C of warming?	3	days or weeks	Book: "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 158
Chapter 5: What's going to happen	97	What would the world be like at 3°C of warming?	4	billion trees	"Amazon Rainforest", Greenpeace. https://www.greenpeace.org.uk/challenges/forests/amazon-rainforest/
Chapter 5: What's going to happen	98	What would the world be like at 3°C of warming?	5	kill people	Mora, C. et al., Nature Climate Change, 2017: 'Global risk of deadly heat'. https://www.nature.com/articles/nclimate3322 . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 135.
Chapter 5: What's going to happen	98	What would the world be like at 3°C of warming?	6	conditions	Huang, J. et al., Nature Climate Change, 2016: 'Accelerated dryland expansion under climate change'. https://www.nature.com/articles/nclimate2837 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 137.
Chapter 5: What's going to happen	98	What would the world be like at 3°C of warming?	7	of food	#VALUE!
Chapter 5: What's going to happen	99	How can humanity prepare for a world warmed by 3°C?	1	to go	"The CAT Thermometer", Climate Action Tracker. https://climateactiontracker.org/global/cat-thermometer/
Chapter 5: What's going to happen	101	What would the world be like at 4°C of warming?	1	New Zealand	See a map summarising research: "The heat is on over the climate crisi. Only radical measures will work", Guardian, https://www.theguardian.com/environment/2019/may/18/climate-crisis-heat-is-on-global-heating-four-degrees-2100-change-way-we-live
Chapter 5: What's going to happen	101	What would the world be like at 4°C of warming?	2	into the air	Kleinen, T. and Brovkin, V., Environmental Research Letters, 2018: 'Pathway-dependent fate of permafrost region carbon'. https://pure.mpg.de/pubman/faces/ViewItemOverviewPage.jsp?itemId=item_2560873 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 210.
Chapter 5: What's going to happen	101	What would the world be like at 4°C of warming?	3	3°C world	Collapse of food supplies: Heat and dryness alone will cause drastic reduction in yield: Zhao, C. et al., PNAS, 2017: 'Temperature increase reduces global yields of major crops in four independent estimates'. https://www.pnas.org/content/114/35/9326
Chapter 5: What's going to happen	101	What would the world be like at 4°C of warming?	4	by flooding	"How much flooding is in the UK's future? A look at the IPCC report", Carbon Brief. https://www.carbonbrief.org/how-much-flooding-is-in-the-uks-future-a-look-at-the-ipcc-report
Chapter 5: What's going to happen	102	What would the world be like at 4°C of warming?	5	high tide line	Kulp, S. and Strauss, B., Nature Communications, 2019: 'New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding'. https://www.nature.com/articles/s41467-019-12808-z.pdf?stream=top For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 209.
Chapter 5: What's going to happen	102	What would the world be like at 4°C of warming?	6	we will die	Raymond, C. et al., Science Advances, 2020: 'The emergence of heat and humidity too severe for human tolerance'. https://advances.sciencemag.org/content/6/19/eaaw1838
Chapter 5: What's going to happen	102	What would the world be like at 4°C of warming?	7	warm and wet	Im, E. et al., Science Advances, 2017: 'Deadly heat waves projected in the densely populated agricultural regions of South Asia'. https://advances.sciencemag.org/content/3/8/e1603322.full
Chapter 5: What's going to happen	102	What would the world be like at 4°C of warming?	8	of Mecca	Kang, S. et al., Geophysical Research Letters, 2019: 'Future heat stress during muslim pilgrimage (Hajj) projected to exceed "Extreme Danger" Levels'. https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2019GL083686 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 172.
Chapter 5: What's going to happen	102	What would the world be like at 4°C of warming?	9	of China	Kang, S. and Eltahir, E., Nature Communications, 2018: 'North China Plain threatened by deadly heatwaves due to climate change and irrigation'. https://www.nature.com/articles/s41467-018-05252-y . For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 173.

Chapter 5: What's going to happen	103	What would the world be like at 5°C of warming?	1	million years	Zhu, J. et al., Science Advances, 2019: 'Simulation of Eocene extreme warmth and high climate sensitivity through cloud feedbacks'. https://advances.sciencemag.org/content/5/9/eaax1874 For additional context, see "Our Final Warning: Six Degrees of Climate Emergency" by Mark Lynas, Page 226.
Chapter 5: What's going to happen	103	What would the world be like at 5°C of warming?	2	the Earth	"When did dinosaurs live?" Natural History Museum. https://www.nhm.ac.uk/discover/when-did-dinosaurs-live.html
Chapter 5: What's going to happen	103	What would the world be like at 5°C of warming?	3	hothouse' state	Lenton, T. M. et al., Nature, 2019: 'Climate tipping points - too risky to bet against'. https://www.nature.com/articles/d41586-019-03595-0
Chapter 5: What's going to happen	103	What would the world be like at 5°C of warming?	4	tipping points	Brovkin, V. et al, Nature Geoscience, 2021: 'Past abrupt changes, tipping point and cascading impacts in the Earth system'. https://www.nature.com/articles/s41561-021-00790-5
Chapter 5: What's going to happen	103	What would the world be like at 5°C of warming?	5	wiped out	"The 'great dying': rapid warming caused largest extinction event ever, report says", Guardian. https://www.theguardian.com/environment/2018/dec/06/global-warming-extinction-report-the-great-dying
Chapter 5: What's going to happen	104	Do we have a choice which of these happens?	1	still rising	"Emissions will hit record high by 2023 if green recovery fails, says IEA", Guardian. https://www.theguardian.com/environment/2021/jul/20/emissions-record-high-by-2023-if-green-recovery-fails-says-iaa
Chapter 5: What's going to happen	106	Which of these scenarios is humanity choosing right now?	1	warmed world	"Climate change: Promises will mean rise of 2.4C - study", BBC. https://www.bbc.co.uk/news/science-environment-56984691
Chapter 5: What's going to happen	106	Which of these scenarios is humanity choosing right now?	2	reach 2.9°C	Report: "Climate Action Tracker, Warming Projections Global Update, May 2021". Climate Action Tracker. https://climateactiontracker.org/documents/853/CAT_2021-05-04_Briefing_Global-Update_Climate-Summit-Momentum.pdf In many cases, climate scientists' worst-case expectations are met or exceeded by events. Some examples: German floods in July 2021: "Climate scientists shocked by scale of floods in Germany", Guardian. https://www.theguardian.com/environment/2021/jul/16/climate-scientists-shocked-by-scale-of-floods-in-germany Heatwaves in Canada, June & July 2021: "Canadian inferno: northern heat exceeds worst-case climate models", Guardian. https://www.theguardian.com/environment/2021/jul/02/canadian-inferno-northern-heat-exceeds-worst-case-climate-models Ice loss: "Global ice loss increases at record rate." University of Leeds. https://www.leeds.ac.uk/news/article/4756/global_ice_loss_increases_at_record_rate Sea level rise: "Sea level rise matches worst case scenario", University of Leeds. https://www.leeds.ac.uk/news/article/4756/global_ice_loss_increases_at_record_rate
Chapter 5: What's going to happen	106	Which of these scenarios is humanity choosing right now?	3	often	Heatwaves in Canada, June & July 2021: "Canadian inferno: northern heat exceeds worst-case climate models", Guardian. https://www.theguardian.com/environment/2021/jul/02/canadian-inferno-northern-heat-exceeds-worst-case-climate-models Ice loss: "Global ice loss increases at record rate." University of Leeds. https://www.leeds.ac.uk/news/article/4756/global_ice_loss_increases_at_record_rate Sea level rise: "Sea level rise matches worst case scenario", University of Leeds. https://www.leeds.ac.uk/news/article/4756/global_ice_loss_increases_at_record_rate
Chapter 5: What's going to happen	109	What would it take to stay under 1.5°C?	1	past 1.5°C	"We've already installed enough fossil fuel infrastructure to commit to more than 1.5 degrees Celsius of planetary warming", Energy In Demand. https://energyindemand.com/2019/07/06/weve-already-installed-enough-fossil-fuel-infrastructure-to-commit-to-more-than-1-5-degrees-celsius-of-planetary-warming/
Chapter 5: What's going to happen	109	What would it take to stay under 1.5°C?	2	transportation	"Main sources of Methane Emissions", What's Your Impact. https://whatsyourimpact.org/greenhouse-gases/methane-emissions
Chapter 5: What's going to happen	110	What would it take to stay under 1.5°C?	3	alternatives	"How much meat should I be eating?" Greenpeace. https://www.greenpeace.org.uk/news/how-much-meat-should-i-be-eating/?_ga=2.200669230.1896256437.1610938065-1500376388.16
Chapter 5: What's going to happen	110	What would it take to stay under 1.5°C?	4	mangrove forests	Mangroves: "Mangroves protect coastlines, store carbon – and are expanding with climate change", The Conversation. https://theconversation.com/mangroves-protect-coastlines-store-carbon-and-are-expanding-with-climate-change-81445
Chapter 5: What's going to happen	110	What would it take to stay under 1.5°C?	5	reducing meat	"Meat, soya, fire and disease: how the Amazon rainforest is breaking down." Greenpeace. https://www.greenpeace.org.uk/news/meat-soya-fire-disease-amazon-rainforest-breaking-down/
Chapter 5: What's going to happen	110	What would it take to stay under 1.5°C?	6	under 1.5°C	"World can limit global warming to 1.5C 'without BECCS'", Carbon Brief. https://www.carbonbrief.org/world-can-limit-global-warming-to-onepointfive-without-beccs
Chapter 5: What's going to happen	111	Why do climate scientists say there is such urgency to act now?	1	very quickly	"New research suggests 1.5C climate target will be out of reach without greener COVID-19 recovery plans", The Conversation. https://theconversation.com/new-research-suggests-1-5c-climate-target-will-be-out-of-reach-without-greener-covid-19-recovery-plans-151527 In January 2021, this estimate was 6 years. "Guest post: Refining the remaining 1.5C 'carbon budget'", Carbon Brief. https://www.carbonbrief.org/guest-post-refining-the-remaining-1-5c-carbon-budget
Chapter 5: What's going to happen	112	Why do climate scientists say there is such urgency to act now?	2	five years	"The global 1.5°C carbon budget has reduced by 30 per cent in just three years – trends show we must reduce emissions faster", ClimateWorks Australia. https://www.climateworksaustralia.org/news/the-global-1-5c-carbon-budget-has-reduced-by-30-per-cent/

					In January 2021, this estimate was 6 years. "Guest post: Refining the remaining 1.5C 'carbon budget'", Carbon Brief. https://www.carbonbrief.org/guest-post-refining-the-remaining-1-5c-carbon-budget
Chapter 5: What's going to happen	113	How fast do we need to act?	1	four years	"The global 1.5°C carbon budget has reduced by 30 per cent in just three years – trends show we must reduce emissions faster", ClimateWorks Australia. https://www.climateworksaustralia.org/news/the-global-1-5c-carbon-budget-has-reduced-by-30-percent/ Nearly a year later with no meaningful action whatsoever from world governments, this now stands around four years.
Chapter 5: What's going to happen	115	Economics for Human Needs	1	used alone	Aitken, A., National Institute Economic Review, 2020: 'Measuring welfare beyond GDP' https://www.cambridge.org/core/journals/national-institute-economic-review/article/abs/measuring-welfare-beyond-gdp/8DD5126C15628C7C72456EA2C4DD733F
Chapter 5: What's going to happen	115	Economics for Human Needs	2	new model	Doughnut Economics Action Lab: https://doughnuteconomics.org/ Book: "Doughnut Economics", by Kate Raworth
Chapter 5: What's going to happen	115	Economics for Human Needs	3	Brussels	https://www.cnbc.com/2021/03/25/amsterdam-brussels-bet-on-doughnut-economics-amid-covid-crisis.html
Chapter 6: What do I do about it?	120	Chapter 6: What do I do about it?	1	unhappiness	"Materialistic people 'more likely to be depressed and unsatisfied'", Medical News Today. https://www.medicalnewstoday.com/articles/275044 Also see the book "Lost Connections" by Johann Hari. https://www.waterstones.com/book/lost-connections/iohann-hari/9781408878729
Chapter 6: What do I do about it?	120	Chapter 6: What do I do about it?	1	necessary	Article: "Yes, Actually, individual responsibility is essential to solving the climate crisis", Sierra Club. https://www.sierraclub.org/sierra/yes-actually-individual-responsibility-essential-solving-climate-crisis?fbclid=IwAR1R8Oqaf4X6x9YyF368-1bsKddhcv5a_8q_IYqMbEmHKy5wLeUyORpwtA YouTube Video: Climate Outreach, "Webinar: Lifestyle change & system change are two sides of the same coin - UNEP EGR" [59:32]. https://youtu.be/deXXo8uN260
Chapter 6: What do I do about it?	121	Story Four: It's never too late to make a difference	1	Assembly'	https://www.climateassembly.uk/
Chapter 6: What do I do about it?	121	Story Four: It's never too late to make a difference	2	to learn	Business, Energy and Industrial Strategy Committee Oral evidence: Findings of the Report of Climate Assembly UK, HC 117 https://committees.parliament.uk/oralevidence/2345/html/
Chapter 6: What do I do about it?	122	Story Four: It's never too late to make a difference	3	awakened me"	https://www.theguardian.com/environment/2020/dec/31/its-awakened-me-uk-climate-assembly-participants-hail-a-life-changing-event
Chapter 6: What do I do about it?	123	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	1	emissions	"The carbon footprint sham", Mashable. https://mashable.com/feature/carbon-footprint-pr-campaign-sham
Chapter 6: What do I do about it?	124	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	2	level	Book: "Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change" by George Marshall. Published 2015. Page 94. https://www.waterstones.com/book/dont-even-think-about-it/george-marshall/9781632861023
Chapter 6: What do I do about it?	125	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	3	imported goods	"Half UK's true carbon footprint created abroad, research finds", https://www.theguardian.com/environment/2020/apr/16/britain-climate-efforts-undermined-failure-imports-carbon
Chapter 6: What do I do about it?	125	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	4	heavy emitter	"The fashion industry emits more carbon than international flights and maritime shipping combined. Here are the biggest ways it impacts the planet.", Business Insider. businessinsider.com/fast-fashion-environmental-impact-pollution-emissions-waste-water-2019-10?r=US&IR=T
Chapter 6: What do I do about it?	126	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	5	Cancer	Dinu, M. et al., Critical Reviews in Food Science and Nutrition, 2017: 'Vegetarian, vegan diets and multiple health outcomes: A systematic review with meta-analysis of observational studies'. https://pubmed.ncbi.nlm.nih.gov/26853923/
Chapter 6: What do I do about it?	126	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	6	diabetes	Tonstad, S. et al., Diabetes Care, 2009: 'Type of vegetarian diet, body weight, and prevalence of type 2 diabetes'. https://pubmed.ncbi.nlm.nih.gov/19351712/
Chapter 6: What do I do about it?	126	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	7	heart disease	Kim, H et al., Journal of the American Heart Association, 2019: 'Plant-Based Diets Are Associated With a Lower Risk of Incident Cardiovascular Disease, Cardiovascular Disease Mortality, and All-Cause Mortality in a General Population of Middle-Aged Adults'. https://pubmed.ncbi.nlm.nih.gov/31387433/
Chapter 6: What do I do about it?	126	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	8	than vegans	Kim, H. et al., BMJ Nutrition, Prevention and Health, 2021: 'Plant-based diets, pescatarian diets and COVID-19 severity: a population-based case-control study in six countries'. https://nutrition.bmj.com/content/4/1/257
Chapter 6: What do I do about it?	126	Can 'Lifestyle Changes' and 'Personal Carbon Footprints' make a difference?	9	is best	Quote from the book "The Future We Choose" by former UN Executive Secretary for Climate Change, Christiana Figueres, and Tom Rivett-Carnac, senior political strategist for the 2015 Paris Climate Agreement. https://www.waterstones.com/book/the-future-we-choose/christiana-figueres/tom-rivett-carnac/9781786580375
Chapter 6: What do I do about it?	127	The Target: Where are our biggest sources of emissions?	1	by source	"Emissions by sector", Our World In Data. https://ourworldindata.org/emissions-by-sector
Chapter 6: What do I do about it?	127	The Target: Where are our biggest sources of emissions?	2	we import	"Half UK's true carbon footprint created abroad, research finds", https://www.theguardian.com/environment/2020/apr/16/britain-climate-efforts-undermined-failure-imports-carbon
Chapter 6: What do I do about it?	130	Activism	1	their tactics	"Changes in Public Opinions?", A Suffrage Struggle. https://sachamorris.wordpress.com/2016/11/03/changes-in-public-opinions/

Chapter 6: What do I do about it?	130	Activism	2	en masse	"The Albany Movement (1961-1962)", Black Past. https://www.blackpast.org/african-american-history/albany-movement-1961-1962/
Chapter 6: What do I do about it?	131	Activist Organisations	1	Gandhi	Extinction Rebellion's inspiration: "Emergency on Planet Earth: Part 7: Act Now... So what do we do?", Extinction Rebellion. https://extinctionrebellion.uk/the-truth/the-emergency/part-7/ Mahatma Gandhi's Tactics: "SATYAGRAHA / CIVIL DISOBEDIENCE", MK Gandhi. https://www.mkgandhi.org/civil_dis/civil_dis.htm
Chapter 6: What do I do about it?	131	Activist Organisations	2	NVDA	Book: "This Is an Uprising: How Nonviolent Revolt Is Shaping the Twenty-First Century", Mark Engler & Paul Engler. https://www.waterstones.com/book/this-is-an-uprising/mark-engler/paul-engler/9781568585703
Chapter 6: What do I do about it?	131	Activist Organisations	3	these tactics	"About Us", Extinction Rebellion. https://extinctionrebellion.uk/the-truth/about-us/ "UK becomes first country to declare a 'climate emergency'", The Conversation. https://theconversation.com/uk-becomes-first-country-to-declare-a-climate-emergency-116428
Chapter 6: What do I do about it?	132	Activist Organisations	4	on climate	For the greater context of global results of NVDA & Extinction Rebellion: Gardner, J. C. et al., Frontiers in Sustainability, 2021: 'From Publications to Public Actions: The Role of Universities in Facilitating Academic Advocacy and Activism in the Climate and Ecological Emergency'. https://www.frontiersin.org/articles/10.3389/frsus.2021.679019/full
Chapter 6: What do I do about it?	132	Activist Organisations	5	Climate Change	Focusing on the 'overtone window'. https://en.wikipedia.org/wiki/Overtone_window "How Extinction Rebellion Shifted the Overtone Window", Earthbound Report. https://earthbound.report/2019/05/02/how-extinction-rebellion-shifted-the-overtone-window/
Chapter 6: What do I do about it?	132	Activist Organisations	6	Martin Luther King	Martin Luther King Jr also contended with mainstream disapproval. But not for his goals, but for his means. As he said in 1963: "I must confess that over the past few years I have been gravely disappointed with the white moderate. I have almost reached the regrettable conclusion that the Negro's great stumbling block in his stride toward freedom is not the White Citizen's Council or the Ku Klux Klanner, but the white moderate, who is more devoted to 'order' than to justice; who prefers a negative peace which is the absence of tension to a positive peace which is the presence of justice; who constantly says: "I agree with you in the goal you seek, but I cannot agree with your methods of direct action"; who paternalistically believes he can set the timetable for another man's freedom; who lives by a mythical concept of time and who constantly advises the Negro to wait for a "more convenient season." Shallow understanding from people of good will is more frustrating than absolute misunderstanding from people of ill will. Lukewarm acceptance is much more bewildering than outright rejection." https://www.goodreads.com/quotes/9350579-i-must-confess-that-over-the-past-few-years-i
Chapter 6: What do I do about it?	134	Decision-making, Lobbying and Influencing	1	institutions	"Measuring the Growth of the Global Fossil Fuel Divestment and Clean Energy Investment Movement", Arabella Advisors. https://www.arabellaadvisors.com/resource/measuring-the-growth-of-the-global-fossil-fuel-divestment-and-clean-energy-investment-movement/
Chapter 6: What do I do about it?	135	Reforest, Rewild, Recover	1	and health	"Thriving with Nature", mentalhealth.co.uk. https://www.mentalhealth.org.uk/campaigns/thriving-with-nature/guide
Chapter 6: What do I do about it?	135	Reforest, Rewild, Recover	2	food chain	"The Climate Impacts of Rewilding", Nicholsons. https://www.nicholsonsgb.com/rewilding/
Chapter 6: What do I do about it?	135	Reforest, Rewild, Recover	3	soil health	"No-dig Gardening Guide", BBC Gardeners' World. https://www.gardenersworld.com/how-to/grow-plants/no-dig-gardening-guide/
Chapter 6: What do I do about it?	136	Talk About It	1	about it	Book: "Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change" by George Marshall. Published 2015. Page 82. https://www.waterstones.com/book/dont-even-think-about-it/george-marshall/9781632861023
Chapter 6: What do I do about it?	136	Talk About It	2	we realise	Book: "Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change" by George Marshall. Published 2015. Page 116. https://www.waterstones.com/book/dont-even-think-about-it/george-marshall/9781632861023 Youtube Seminar from Climate Outreach. Of the videos below, the 2nd is more important as it shares the results of the experiment.
Chapter 6: What do I do about it?	137	How To Have A Great Climate Conversation	1	experiment	Part 1: "How to have a climate change conversation, Webinar 1 #TalkingClimate", Climate Outreach, [55:20]. https://youtu.be/uznW6vQ1vsE Part 2: "How to have a climate change conversation, Webinar 2 #TalkingClimate", Climate Outreach [42:56]. https://youtu.be/evltfOYE_C0
Chapter 6: What do I do about it?	139	What ideas do you have?	1	shuts down	"Employee Brain on Stress Can Quash Creativity And Competitive Edge", Forbes. https://www.forbes.com/sites/work-in-progress/2012/09/05/employee-brain-on-stress-can-quash-creativity-competitive-edge/?sh=de492dcb3e91