

WE CAN'T RUN AWAY FROM THIS



RACING TO IMPROVE
RUNNING'S FOOTPRINT
IN OUR CLIMATE
EMERGENCY

DAMIAN HALL

FOREWORD BY KILIAN JORNET

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RUN AWAY
FROM THIS**

DAMIAN HALL



Vertebrate Publishing, Sheffield
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For Indy and Leif. We tried.

A NOTE FROM THE AUTHOR

In the interest of the full transparency we should expect from companies, the following brands have supported my running in some form (in most cases just product), or I'm an ambassador for them, for some of the time I was researching and writing this book. (And for all long-term agreements, with the exception of those clearly doing their bit already, we've had discussions about improving actions towards greater sustainability.¹)

33Fuel
Garmin
inov-8
Leki
Our Carbon
Outdoor Provisions
Petzl
PHD Designs
Precision Fuel & Hydration
Sungod
Supernatural Fuel
Supersapiens
Trees Not Tees (who my wife works for too)

1 Leading to the discontinuation of some relationships, hee hee.

FOREWORD BY KILIAN JORNET

Damian Hall is one of the runners I admire the most. Not only because of all his trail-running achievements – which are pretty cool – but because he stands up for his values. And this is something on everyone’s lips when we ask them, but it’s often bullshit. Not for Damian. He is one of the runners to have looked most deeply into his environmental footprint to start with, then the footprint of the outdoors sector, and then decided to do something real about it. And this is a lot. It’s huge. That’s why Damian is a running hero, because he cares and he does.

Since I began running in the mountains a couple of decades ago, I’ve seen how the trails and mountains I often go to are changing. Glaciers are melting faster than ever, ecosystems are moving to escape warmer temperatures, water is running out in the warmest countries and extreme weather situations are becoming more common. Today, we all know that climate change is real, and that it will lead us to our probable extinction if we don’t change some things. Because the planet – the rocks and all this stuff – will do fine without us and some other animals and species on its surface; but as for us, we need the natural resources and biodiversity to exist.

Runners like myself often think that because we run in the outdoors we have a special relation with earth and nature, and that we’re more aware of the problems that we’re facing, but unfortunately that awareness isn’t really that great when we dig deep, and it isn’t doing much to solve the issues.

But people like Damian are showing all of us, with actions and wisdom, how we can better understand the complexity of climate change and other environmental problems, and how to go one step further by thinking about what we can do, as runners, to help.

This book is about all this, and Damian is doing excellent work in explaining the different angles, from the industry, our equipment, the races and events we take part in, and how we can influence and be proactive about the systemic changes that

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are needed. Because miracles don't exist in the real world. As athletes, we know that if we don't train well in the months and weeks prior to an event, during that race we will not perform well; there's only one thing we can do and that is to start training – slower or faster, we have to start. So, if we want to keep running in the mountains, if we want our kids to enjoy the outdoors and, in the end, if we care about the destiny of humans, we shouldn't wait for others to make things happen, but accept that we are part of the problem and understand that we are also part of the solution. And with what Damian has written in this book, we're much closer to seeing where the problems come from and what we can do.

1

HOW BAD IS RUNNING?

The thing we love doing is surprisingly shit for the planet

*'Sports such as athletics that are inherently harmless
cause major environmental effects.'*

George Monbiot

Stop! Please, for your own sake, put this book down right now. There's a very good chance you'll regret reading it – and not just due to the imminent, criminally bad jokes. You see, you'll probably never think of your running in the same way again.

This book's got some properly depressing stuff in it. There are some productive, positive and hopeful bits as well. But climate change is a right dick. It's really ruining things. Even for us runners. And I was distraught to discover **we are very much part of the problem.**

The issue with climate change is that it can lead to some heated debates. We haven't found a solution to the situation yet, but we're getting warmer. You can't beat a bit of climate-change bantz, eh? Even the Greenland ice sheets are cracking up at that. Sorry (#notsorry). I'll leave apocalyptic mirth for now. But frankly, with this stuff, we need all the frivolity we can get.

You'd think, wouldn't you, that running is a fairly harmless activity environmentally? I mean, sure, it hurts my muscles, tendons and – worst of all – my ego, sometimes. But on the surface, it seems endearingly simple, natural, and indeed it's often done in nature. All we need is a pair of daps (also known as running shoes or trainers), right? In terms of activities that have little impact on the planet, you'd be forgiven for thinking running would be right up there, perhaps even the least environmentally harmful thing we can do. Numerous footprints taken, but with a minuscule carbon footprint, surely? But what if our jogging in beautiful places (and unbeautiful places too, for that matter) was paradoxically contributing to the destruction of those special places? You can probably tell where this is going ...

I have some really bad news. My own climate anxiety made me look into this and ... **running is surprisingly shit for the planet.**

Anyone who's done a mass-participation road race will remember a sea of discarded plastic cups, plastic bottles and plastic gel wrappers in our wake, plus all

those free (plastic) T-shirts in a drawer unused. The global trainer industry creates as much carbon dioxide and equivalent greenhouse gas emissions (CO₂e) as the entire United Kingdom (and, er, some of us have a lot of pairs). Our clothing is *even worse*. Runners tend to consume more animal protein than non-runners, which comes from the second most destructive industry on the planet. It all adds up to a horrifying footprint, and I haven't even mentioned running's biggest negative impact yet.

'From casual joggers to elite athletes, running is the most participated sport in the world,' says climate-change researcher Sean Ross, via @sustainablerunning. 'The benefits of running are well known; however, the environmental impact of the sport is something most people don't think about. From buying a new pair of trainers, travelling for a race or upgrading your running watch, you may be living a healthy life, but you may also be damaging future lives.'

Honestly. You've been warned. Put this book down while you still can.

That said, in amongst all of this, I found some caffeine gels of hope, some rehydrating glugs of inspiration, some easy and genuinely performance-enhancing things we runners can do, towards a fitter planet – though they aren't always the most obvious things.

Plus, you'll be thrilled to know, I found some brill/bad climate-change jokes, which are recycled throughout this book. Please humour me. The feeble mirth and writing this book (and chucking a few cheesy quotes in) are how I'm coping with eco anxiety. Oh, and incessantly retweeting doom-mongering *Guardian* articles ...

Who the effing hell am I?

I'm not an expert on any of this. I don't have a science background or even, for most of my life, much enthusiasm for it (I was very much a daydreamy/stoned arts student). But I do now. I'm a forty-six-year-old father of two, a recovering journalist, a midlife-crisis ultramarathon runner, and an accidental climate activist. I got obsessed with running, and more recently I got obsessed with our climate and ecological emergency.

I've done another book about my passion for long-distance bimbles, the award-dodging *In It for the Long Run* (possibly the world's first carbon-negative book, thanks to the wonderful and clever Vertebrate Publishing). But if you've wisely avoided that, just briefly, I ran my first marathon aged thirty-six, dressed as a toilet (and, yes, I did look a bit flushed), and loved it so much – or, more specifically, the realisation this stuff could be done on trails, hills and even bigger lumps and for much longer distances – that I got a bit carried away. I was soon running 100-mile races, completing things like the Spine Race and Dragon's Back Race, flying around Europe to do big mountain races such as Ultra-Trail du Mont-Blanc, getting selected

for the GB trail-running team and setting records on UK long-distance trails. It's been life-changing. I ruddy loved it. Still do.

I wrote about most of that for magazines, where I would review shoes and kit too. But as I picked up a little sponsorship (and morphed into a running coach), running became my life. I was obsessed and bought every running book going. Since 2019, though, my personal library has changed markedly. The books by Adharanand Finn, Kilian Jornet and Richard Askwith are being edged out by authors named Michael E. Mann, Mike Berners-Lee and Katharine Hayhoe. Climate scientists.

Growing up with parents who bought organic nosh and voted Green, there was a subtle undercurrent of environmentalism. I was always outdoors, climbing trees, camping and hillwalking, but in my teens that was superseded by Radio 1, football and pubs. I wasn't that interested in the plight of bumblebees. As an alleged adult, when I increasingly saw headlines about hungry polar bears, I assumed those clever scientists and sensible government types would sort all that out. Wouldn't they?

And then you realise a few years later that those polar bears are looking hungrier. And they have less ice to live on. And, er, hasn't this been going on for decades now? David Attenborough seems to have been on the telly a lot lately. Did the BBC just say that was another record-breaking month of weather? Why aren't those Swedish kids in school? And, hold on, why has someone parked a big pink boat at Piccadilly Circus with 'Tell The Truth' written on it?

It was like a weird sort of unhappy party was happening and, not for the first time, I hadn't been invited. Sure, I'd heard of climate change, but we've known about that for yonks. Surely people have sorted that out by now. Haven't they?

The penny dropped: they haven't.

'The scientific evidence is unequivocal: climate change is a threat to human wellbeing and planetary health,' said the Intergovernmental Panel on Climate Change (IPCC) in its Sixth Assessment Report in February 2022.

'What we do over the next three to four years I believe is going to determine the future of humanity,' said Professor Sir David King, former UK Chief Scientific Adviser, a year earlier.

'Anyone who doesn't feel some alarm isn't thinking straight,' says Lancaster University professor Mike Berners-Lee, author of *How Bad Are Bananas?*, the bible for carbon footprints.

'Every disaster movie starts with people ignoring a scientist' was my favourite banner at COP26 in November 2021.

The generations who follow us are going to hate us. We're robbing them of the freedoms we had. We had the chance to right things and it looks like we possibly won't. I want to be able to look my children and their children in the eyes and tell

them that, honestly, some of us did try. Although not all hope is lost quite yet ...

Realising just how urgent all this climate and ecological emergency lark is, **I felt compelled to *do something*. I just didn't know what.**

In 2019, I was inspired by Dan Lawson and Charlotte Jalley and their incredible work with ReRun Clothing – who sounded the alarm in the running world – and also by Clare Gallagher, Rosie Watson, Finlay Wild and other runners doing great things (more anon). Not least visually impaired double Paralympic gold medallist James Brown, who was sentenced to prison for supergluing himself to a plane in protest. I wish I had 10% of his courage. Inspired by them and family members, I joined in Extinction Rebellion (XR) protests in London, which were great fun and empowering, even though I failed miserably to get arrested.

I read a thought-provoking piece by activist and carbon consultant Rosie Watson, who was running from the UK to Mongolia to raise awareness about climate change. 'We need to face the fact that a lot of our outdoor culture is very destructive, and the athlete and adventurer lifestyle is a massive influencer in that.' She spelt out how damaging some athlete behaviours are and how much influence our actions might have, especially through that glossy, glorifying world of social media.ⁱ

I was impassioned, but confused too. I started making statements on social media, which were sometimes naive and for which naturally I got called a hypocrite – sometimes fairly, sometimes not. I started to think about my own footprint and decided I was going to race internationally, and certainly fly, much less – which led to being interviewed by popular US website iRunFar.com as a de facto environmentalist alongside mountain legend Kilian Jornet. I felt more eco worrier than warrior. It showed me there was a void to fill. We needed climate activists.

I thought I could definitely be a more sustainable or responsible runner, maybe even a low-carbon or carbon-negative athlete? I attempted a winter record run on the Paddy Buckley Round (a 61-mile, 47-peak challenge in Snowdonia) in January 2020 and decided to use public transport to get there and back (which was fine till I fell asleep on the way home and missed my stop), fuel without animal products (easy) or plastic waste (harder), and unfurl an XR flag my children had made me at the finish. The run was a success and catching a bus seemed to be called activism (but then buses do have history with social change).

I was making it up as I went along. 2020 and 2021 were good years for me running-wise, setting three more national records, on the Pennine Way, South Wales Traverse and Wainwright's Coast to Coast. While the Covid pandemic made public transport a more complicated choice, I stuck with the ethical fuelling method – without forgetting that some people have been vegan for decades – and litter-picked or plogged as I ran (technically, my amazing support runners did 90% of that).

Some of the runs gained national coverage, including television, radio and newspapers, and I was always asked about the litter picking – even the *Daily Mail* were interested in that.

I still didn't know whether collecting occasional crisp packets was actually doing any good (which is worse, a crisp packet stuck in a peatbog or landfill for 200 years, or one that's sent to an incinerator where it'll directly add to global heating?), but it was an effective tool for drawing attention to our climate and ecological emergency. The truth was, each run had led to a load of car journeys that might not have happened otherwise – far more emissions created than saved by any crisp-packet collecting. I felt like an imposter. Somewhere along the line I got myself a silly haircut too, a mohawk. If you care about stuff, you need a silly haircut, right?

I still didn't really understand which aspects of my life had bigger or smaller impacts.

I was increasingly being asked questions about sustainability in interviews or directly via social media, by embryonic races and brands who wanted to do better but, like me, didn't know where to start. Some events had banned single-use plastic but were hawking merchandise. Was that okay? How impactful is fuelling without plastic waste or animal products in a race if you fly or drive there? And what about my kit – how bad was that? Are T-shirts made from recycled plastic bottles and shoes made from mushrooms the answer? Indeed, if I truly cared about our climate and ecological emergency, could I even be an ambassador for a brand without being a massive hypocrite?

With Rosie Watson and Andrew Murray (not that one) I was invited to be part of an ad hoc sustainability committee for a race series. What should races' priority be: reducing emissions from participant flights, eliminating plastic waste or implementing vegan food? I had no idea (luckily Rosie and Andrew knew stuff), but I was fascinated. Andrew is a very experienced sustainability professional and runner, and his Running On Carbon blog (runningoncarbon.wordpress.com) helped to illuminate which aspects of running do the most damage.

I devoured books by Andrew Brooks, Jen Gale, Dale Vince and Isabel Losada (I haven't quite got round to Bill Gates's yet), listened voraciously to podcasts (see Resources, page 202), did a Carbon Literacy course and talked – and hopefully listened – to anyone who knew anything, including climate-scientist runner pals.

I was making lifestyle changes, but I wanted some kind of external verification. The carbon-auditing company Our Carbon analysed my family's CO₂e footprint and explained which actions are most impactful. We offset what we couldn't realistically reduce further, which at the time felt like a welcome guilt-reliever but now I know more feels less straightforward. It was enlightening to see which aspects

of my lifestyle had the biggest impact (more anon) and where the biggest and/or easiest (regrettably not always the same thing) improvements could be made.

It's complicated

What have I learnt? On one hand, it seems simple. From a non-running perspective, three-quarters of an individual's footprint will usually come from energy, food and travel, and the fourth from the other things we buy, our stuff. Thankfully, energy at home is usually a quick fix. Switching from fossil fuels to a renewable energy supplier takes a few minutes and has a big impact.² From a runner's perspective, travel, nutrition and stuff – especially our kit – all loom large and are discussed, probably in too much detail, here.

As my knowledge grew, I became frustrated with some of the sustainability myths being repeated, the top-ten lists mixing reducing flights with turning lights off, without any hierarchy or comparative level of impact – when the differences in emissions saved between those actions could be 50-plus tonnes of CO₂e. Indeed, a 2021 study asked participants to rank the nine most impactful actions to combat climate change and recycling was voted number one, when in fact it was the seventh most effective on the list, while the most impactful action was ranked last.ⁱⁱ There are elephants and there are mice.

Most people know some actions that will reduce their impact, but perhaps not whether each is a small squeaky thing or something with satellite-dish-sized ears and a massive grey snake for a nose. Regrettably, Boris Johnson was right about one popular climate-friendly action being something of a red herring. We'll also see how *The A-Team's* Mr T and Benny Hill were eco-warrior pioneers long before Greta Thunberg was even a twinkle in her parents' eyes.

On the other hand, some aspects are frustratingly complicated. I was confused about **shoe companies making a song and dance about using recycled plastic bottles or sugar cane, or a 'recyclable' shoe**. Is that more 'sustainable' or is it adding to the problem? Is a shoe made from plastic that lasts longer better or worse? I knew a little bit about how bad the fast-fashion industry was for the planet, but how much of that applies to our running kit? ReRun Clothing made me aware of running's T-shirt problem, but otherwise how bad for the environment are running races? And if flying is bad, how much flying is ethically okay and what are the lowest-carbon ways to travel? What impact on a runner's personal footprint does giving up meat and dairy have – and is that healthy or even a performance enhancer?

2 Mike Berners-Lee endorses Dale Vince's Ecotricity or Good Energy. Though the UK's 2022 energy crisis has complicated things from a consumer perspective and it could be smarter to delay switching till things have calmed.

Then there's a separate debate to be had about how much we should be analysing and adapting our own behaviour when we're so insignificant in the grand scheme of things.

Ultimately, I wanted to find out how much negative impact I had as a runner, how bad Big Running is for the planet, and what, if anything, we can do about 'It' – and what *should* we do about it (not necessarily the same thing).

This book is my three-year journey from being woken (pun intended) up to our climate and ecological emergency, to trying to understand it and learn *what to do*, and now to spreading the word a bit – mostly from a running perspective. What this book isn't is a 'fifty things you can do to solve climate change'-type thing (although it does have loads of tips – too many, actually, got a bit carried away), for reasons that will be explained. There are several really impactful things we can all do. But it also pays to be a part of the bigger picture.

I had casually assumed running was safe from climate change, an innocent, natural hobby (though it's so much more than a hobby for me). But *our climate and ecological emergency affects everything*: what we eat, what we wear, where we run, even how we use Strava. We pretty much can't move for emitting CO_{2e}.

The solutions can be counterintuitive too: sometimes a plastic bag is better for the environment than a paper one, a flight can be better than a car journey, and a car journey can be better than a train trip (clue: it depends on how many people are in the car). Sometimes wrapping food in plastic is better for the planet. That one blew my tiny little mind a bit.

Indeed, there's a split between the tangible stuff, which tends to be more emotive, more satisfying to act on – but often falsely so – and the stuff you can't see, such as those cursed greenhouse gases, which is what's doing the real harm. Putting your recycling out feels good. We're doing our bit. We can't see CO_{2e} and it's so hard to sense you're making a difference. But it's often the stuff we can't see that's the most urgent problem. Making changes without seeing a clear or immediate outcome is harder and takes some faith. Thankfully, some broad principles apply. And not all solutions are to live like mushroom-foraging hermits.

Some of this is specific to running, but most of it applies to real life too. We are, after all, non-runners sometimes, however reluctantly (I'm told my running tights are NOT appropriate for restaurants). A lot of it also applies almost word for word to other outdoor sports and passions, especially hiking, mountaineering, climbing, cycling, triathlon and adventure sports. There'll be no sport on a dead planet.

Though so much of this is depressing and deeply worrying, happily running can show us some ways out of this Big Kerfufflefuck, and in fact trail/fell/ultra running is already leading the way in some regards. There's plenty we can do, on both an

individual footprint level and, importantly, a systemic level. Much of it is empowering, rewarding, easier than might be assumed, and it will make us happier too. Happier than my climate change jokes will, anyway.

One phrase that really struck me is: **if we can't be a part of the solution, at least don't be part of the problem.** We can't fix every climate-change issue as individuals. But in some instances we can at least stop contributing to them – which is a helpful mindset for the more headfucky stuff. That said, to me it's no longer enough to *only* avoid being part of the problem ...

The gloomy bit

I'll keep this (very) gloomy bit as brief as possible. You wouldn't have picked up this silly little book if you weren't at least half aware, half concerned, about our climate and ecological emergency – and everyone should be. 'Our house is on fire', warned the incredible Greta Thunberg at Davos in 2019. Indeed, scientists agree the Sixth Mass Extinction (defined as losing 75% of the planet's species relatively rapidly) is underway on Earth, in an era labelled the Anthropocene – meaning humans are, for the first time, the primary agents of change on a planetary scale. Ice sheets melting, floods, wildfires, storms called Colin and Cindy, droughts, crop failures and famine, species extinctions, rising sea levels, mass migrations, wars, pandemics.³ All these things aren't just predictions, they're happening now.

Antarctica was 40 °C hotter than normal the other day. *Forty degrees.* The UK recorded 40 °C too, in July 2022, its hottest ever day, with the government issuing an unprecedented national emergency red alert. The London fire brigade experienced their busiest day since World War Two, with 2,600 callouts and forty-one properties destroyed. The heatwave, say scientists, was made ten times more likely by climate breakdown. Spain, Portugal, Japan and the US have all had record-breaking heat in the last few weeks; 50,000 people have been evacuated from their homes as floods hit Sydney for the third time this year; large glaciers are breaking off, falling and killing people in the Italian Alps. Oh and thousands of birds are dropping dead from the skies, like some Hitchcock horror. And these apocalyptic things are happening because we're sending too many greenhouse gases (ghg) into the atmosphere. We're wilfully drilling holes in our own submarine.

Only a 'now or never' dash to a low-carbon world will hope to stave off the worst

3 In 2020, 30.7 million people were internally displaced by disasters, three times more than by conflict and violence. More than 200 million could migrate over the next three decades because of extreme weather events or disappearance of their homelands, predicts The World Bank. Russia's 2022 invasion of Ukraine was labelled 'a fossil fuel war' by Ukraine's leading climate scientist, Svitlana Krakovska. And pandemics? That's just scaremongering, surely ...

ravages of climate breakdown, said scientists on the Intergovernmental Panel on Climate Change (IPCC) in April 2022, in ‘a final warning for governments’. Ghg emissions must be nearly halved this decade, according to their sixth report, which took seven years to compile, to give the world a chance of limiting future heating to 1.5 °C above pre-industrial levels – the overshooting of which now looks ‘almost inevitable’. The financial costs are minimal (less than 0.1% of global GDP) and the chances are now slim, yet the world is failing to make the changes needed. ‘Some government and business leaders are saying one thing – but doing another,’ said UN Secretary-General António Guterres. ‘Simply put, they are lying. And the results will be catastrophic.’ We can no longer continue with business as usual, said Thunberg. ‘No more blah, blah, blah.’

This isn’t a new thing. Agriculture started the problems and the Industrial Revolution was a massive multiplier, the Big Kerfufflefuck being largely driven by the burning of fossil fuels. And we started it. **French physicist Jean-Baptiste-Joseph Fourier discovered the greenhouse effect in 1824** – almost 200 years ago. It was first reported in a newspaper in 1912, scientists first warned a US president in 1965, and in 1977 scientist James Black told his employer Exxon (now ExxonMobil) the same thing. The planet is warming with dangerous, destabilising speed, due to man-made emissions.

Despite these warnings and, at the time of writing, *twenty-six* United Nations Conferences of the Parties (COPs), the world has continued regardless, flagrantly ignoring the science, ignoring pleas from scientists and activists, ignoring those in the Global South already suffering catastrophic crop failures, droughts, floods and rising sea levels.

Like Big Tobacco before them, fossil-fuel behemoths, right-wing plutocrats and petrostates have waged a thirty-year disinformation war, which has delayed things considerably, writes Professor Michael E. Mann in *The New Climate War*. We know what’s at stake and, largely, what we have to do. Yet almost all major governments and corporations aren’t acting quickly enough.⁴ The global average temperature is about 1.2 °C hotter than pre-industrial levels and at the current rate of warming, the world will become 1.5 °C warmer within the next five years. We have a 6–10% chance of stalling that rise, and are heading for somewhere between 2.7 and 3.2 °C by the end of this century, which would have numerous devastating and irreversible consequences.⁵ If you google them, you won’t sleep tonight.

4 Even if all the policies to cut carbon that governments had put in place by the end of 2020 were fully implemented, the world will still warm by 3.2 °C this century.

5 That’s the global average, so many places would be far hotter. At 2.5 °C, which is predicted for about 2070, 19% of the planet will be as hot as the Sahara, affecting 3.5 billion people.

We need to get off fossil fuels with an urgency that's beyond, well, urgent, to reduce global emissions by 45% THIS DECADE.

The way we produce food also needs some serious rethinking and most issues boil down to a simple practice: overconsumption. But political will is shamefully lacking. In fact, the UK currently has over forty new fossil-fuel projects in the pipeline and has given the industry £13.6 billion since the Paris agreement in 2015 – even though renewable energies are now cheaper, infinite and quicker to establish and use. Indeed, April 2022's IPCC report stated that the only real obstacles are politics and fossil-fuel interests. Big Oil staffers have been both authors and editors of IPCC reports and unsurprisingly there are plenty of signs of influence at Westminster, with even the current chancellor, Nadhim Zahawi, earning £1.3 million from his second job in the oil industry. In April 2022 scientists said we must get off fossil fuels right away and António Guterres said it's **'moral and economic madness' to fund new projects**, adding that campaigners may be regarded as radicals, but the 'truly dangerous radicals' are those countries increasing fossil-fuel production.

Anyhoo, that's probably enough doom and gloom for now. The short version is, things are really bad and urgent, but we have a slim chance of reining in the damage, *if we act NOW*. It's like we're in the last three or four miles of a marathon and this is where we really needed to speed up significantly to grab that PB. But instead, we've bonked badly, we've slowed right down and feel like we're about to puke (or worse). That PB is just about mathematically still possible, but we'll need to run faster than ever and it doesn't look like we realise or even care.

I feel compelled to insert a cheesy but rousing quote about now, if only to try and cheer myself up a little (it's either that or another joke) and here it is: 'He who accepts evil without protesting against it is really cooperating with it,' said Martin Luther King Jr. And he knew stuff.

How climate change is affecting running

What has all of that got to do with running? A surprising amount. The New York City Marathon used to be run in September but now takes place in November, because the earlier month is too hot. (The 2007 Chicago Marathon took place in 31 °C and saw 250 hospitalisations.)

Due to concerns about extreme heat, the 2020 Tokyo Olympics marathon was moved 500 miles north of the Games' host city, to Sapporo. It was the hottest Games ever, with many athletes complaining, suffering bad performances, needing extra medical timeouts and leaving venues in wheelchairs due to heat exhaustion. A study in the scientific journal *The Lancet* prompted speculation that 'climate

change might spell the heat death of the Summer Olympics as we currently know them.ⁱⁱⁱ Plus climate change is literally slowing us down,⁶ according to a study of 30,000 marathons.^{iv} The 2022 Winter Olympics in Beijing was the first Winter Games without any snow. And ironically all the extra energy burnt – and more than 222 million litres of water – to create artificial white stuff added to planet-warming ghg, which in turn reduces the planet's snow yet further. Experts say that rising temperatures threaten the future of the Winter Olympics, with only one of twenty-one former hosts able to host in the future if ghg emissions remain on their current trajectory.^v

In December 2021 I was en route to an ultramarathon called the Cheviot Goat when I received an SMS message to say it was cancelled because a recent, named storm had caused significant infrastructure damage in Northumberland. In May 2021, twenty-one runners died in a Chinese mountain race, due to a dramatic change in weather, from sunny to freezing temperatures and gale-force winds.⁷ Changes in weather and climate have forced disruption to many sports. The competitive ski season has been shortened due to rising temperatures. Australian Open tennis matches have been suspended due to extreme heat, while a football referee made several bad, game-changing, decisions in the 2022 African Cup of Nations, later blaming severe heatstroke. 2019 Rugby World Cup matches were postponed due to a typhoon. There have been calls for popular mountains such as the Matterhorn and Mont Blanc to be closed to mountaineers as warmer conditions make climbing increasingly less safe.

Pollution has stopped play at Indian cricket matches. Indeed, air pollution is the third major factor affecting runners, who naturally breathe in deeply as they run, with mouth-breathing bypassing nasal filters which reduce pollution intake.⁸ Londoners were warned to avoid strenuous physical activity on 14 January 2022 due to 'very high' levels of pollution, in a city with over 1,700 asthma hospitalisations due to toxic air between 2017 and 2019. In fact, virtually every home in the UK is subjected to air pollution above World Health Organization guidelines and it was

6 The average runner adds a minute and twenty-five seconds to their marathon finish time for every additional degree Fahrenheit.

7 We can't say with absolute scientific certainty that climate change caused these incidents. However, August 2021's IPCC report said there's 'high confidence' that global increases in extreme weather are linked to human influence. In the UK, warm spells have doubled in length in the last fifty years, according to the Met Office, who forecast an increase in hot days (above 25 °C) for the UK but also 'high-impact rainfall', flooding and warmer, wetter winters.

8 Someone running a marathon inhales the same amount of oxygen as a person would sitting down for two days. It did briefly occur to me that runners may be contributing more CO₂ to the atmosphere than most, what with all that heavy panting. But I looked that up and it doesn't work that way, thankfully. We're in the clear.

responsible for 8.7 million deaths globally in 2018 – one in five of all people who died that year.^{vi} The ‘invisible killer’, caused by the burning of fossil fuels such as coal and oil, is also linked to mental health issues. It’s detrimental to running performance too, with up to 11% less oxygen taken in, and at high levels even muscular coordination and perception of time can be impeded.

Many of us run to be in nature. But biodiversity is disappearing rapidly. **We’ve cut down 3 trillion trees, half the world’s total. One million animal and plant species are now threatened with extinction, while global populations of mammals, birds, fish, amphibians and reptiles plunged by 68% between 1970 and 2016.** We’ve lost 75% of our insects in the last twenty-five years – an insect apocalypse (remember when windscreens used to be splattered with them on summer car journeys?). Insects are food for birds; they pollinate 80% of our trees, 75% of our flowers, 30% of global food crops – the Chinese hand-pollinate crops now because of the decline.

The UK is one of the world’s most nature-depleted countries, in the bottom 10% globally and last among G7 nations, with about half of its biodiversity left. No wonder I see so little wildlife when I run in the Brecon Beacons, Lake District, Yorkshire Dales or Scottish Highlands. There are almost no trees or animals. My two children have never seen a hedgehog or a badger in the wild. ‘Climate change will decrease access to trails’ was one of three conclusions in ‘Hot Trail Summer: The Impact of a Warming Climate on Climbing and Trail Sports’, a 2022 report by Protect Our Winters. It also warns, ‘Climate change will threaten the health and well-being of those who recreate outdoors’ and ‘Climate change will diminish the experience of getting outdoors.’ Cheery stuff, huh?

Climate change is changing running, for the worse. We can see it in extreme weather patterns, extreme heat, air pollution and the biodiversity crisis. And sadly, as we’ll see, running is part of the problem. Indeed, outdoor sportspeople may have a 40% greater carbon footprint than practioners of other sports, found a study.^{vii}

Some jargon

Climate change has its own language. I knew carbon wasn’t a good thing (unless it’s in a shoe, apparently), but otherwise it was all new to me. But there are a few key terms to get up to speed on.

CO₂e I found science dull at school, but now I know CO₂ means carbon dioxide, which seems to be in almost everything, but especially fossil fuels, and there’s way too much of it in the atmosphere (417.14 parts per million), which is artificially warming the planet. There’s much more CO₂ than other gases, but as there are other gases too (which are often staggeringly more potent – such as

methane and nitrous oxide), these tend to get called CO_{2e} (*e* stands for equivalent greenhouse gases). Or I might just say greenhouses gases, which I've shortened to ghg. Occasionally I might refer to just CO₂ or carbon.

'Good/Bad for the planet' This is a lazy phrase that gets used a lot, including by, er, me. It's incorrect because the scientific consensus seems to be that if the climate continues to heat, our lives will be fucked, but actually the planet will be just fine in time – and likely even more fine without us on it. So really the phrase should be 'good/bad for human existence as we know it on this planet' or perhaps 'a liveable planet'. But that's not as neat, so I've been a bit lazy/convenient with that one. Sorry.

Sustainability Ooof! A toughie. The word has been bandied around so often in the outdoor industry and other places, slapped on so many products and claims, that it's lost its original meaning. So what's the right word? 'Eco-friendly'? Hmmm, also sounds like greenwash (see below). Patagonia prefers 'responsible'. 'Resilience' is the word preferred by Zoë Rom, environmental journalist and editor in chief of America's *Trail Runner* magazine.⁹ Some like 'regenerative' (leaving things better off than they were). Others like 'ethical'. I quite like that one. The word we're looking for is currently elusive, so 'sustainable' does slip into the copy here and there, even if it no longer feels quite right.

Greenwash Appearing to be ethical is big business. According to Greenpeace, greenwashing is 'a PR tactic used to make a company or product appear environmentally friendly, without meaningfully reducing its environmental impact'. This happens a lot. It's bad. Because it can make us think that we, and a brand, are doing our bit, when that's not happening. It's manipulative, cashing in and, frankly, in these desperate circumstances, immoral. Generally speaking, lots of finger-pointing may not be helpful. But when it's greenwashing, that's just fine! Point, point, point.

Carbon labelling The simple but ace idea that products have a carbon score, so we know the environmental cost. A few food and shoe brands have started doing this, albeit without independent verification so far.

Life-Cycle Analysis/Assessment (LCA) A study to understand the entire impact of a product, from raw materials to the post-user, 'end of life' phase.

Scopes 1, 2 and 3 When a company footprint is measured, it's split into three areas. Scope 1 is direct ghg emissions from sources owned or controlled by a company, such as offices or vehicles. Scope 2 is emissions from purchased electricity, heat and steam. Scope 3 is the more problematic and often largest – all other

⁹ 'Resilience' as in the ability of our human and non-human systems to withstand changes in the climate.

indirect emissions, often from sources not owned or controlled by the company, such as supplier or customer activities.

Net zero Reaching a state where a company, country or individual is no longer emitting ghg into the atmosphere. For a fuller understanding from a company perspective, I'm told Science Based Targets' Net-Zero Standard is the place to look (*sciencebasedtargets.org*).

Carbon neutral/negative This usually means some carbon offsetting is involved (a bit more to be carbon negative) and should be seen as an unsatisfactory, halfway measure en route to net zero.

B Corp A scheme similar to Fairtrade, meaning a company is legally required to consider the impact of their decisions on their workers, customers, suppliers, community and the environment. Science Based Targets, the Higg Index and the UN's Sustainable Development Goals are certifications that offer external audits, but they're all a bit different.

Recycling/Downcycling/Upcycling Recycling is another term that's been overused and abused. Often products such as shoes and clothes aren't actually recycled into the same product again, but rather downcycled into basketball courts or mattress stuffing – lower-value items. Upcycling is genuinely improving a product and is more likely undertaken by creative individuals, making a new garment out of unwanted materials, for example.

Circular economy/Circularity/Closed loop A concept much talked about in the clothing industry: the idea of genuinely recyclable apparel. Much talked about. Still mostly a fantasy.

Kerfufflefuck A word I made up. Good, innit?

Sponbassadencers And that one. I'll explain!

Climate-emergency hypocrite Something I call myself. Almost everything we do creates emissions, from our food and clothing to checking our phones. Even if we want all those things to be CO₂e-free, they're not yet, so are we meant to stay quiet until that day, if it ever comes? Things are too urgent. We can't avoid being hypocrites on a minor level. Jonathan Pie said we're either hypocrites or arseholes. Let's embrace that word. Let's be hypocrites rather than arseholes.

The real costs

It's worth having an understanding of the CO₂e costs of a few items as a barometer. For example, in the UK the average person emits 13 tonnes of CO₂e a year; an American emits 21 tonnes a year, a Malawian 0.2 tonnes. These figures come from

Mike Berners-Lee's *How Bad Are Bananas? The Carbon Footprint of Everything*, which I refer to throughout this book (he's also the brother of Tim, inventor of a long-forgotten thing called the internet). Berners-Lee, himself a runner, advocates a 5-tonne lifestyle (5 tonnes of CO₂e per person per year) as 'appropriate and both possible and necessary'.

- A return flight from London to Hong Kong is 4.5 tonnes of CO₂e.
- A return (small, petrol) car journey from London to Glasgow is 237 kilograms of CO₂e.
- A UK steak is 5.8 kilograms of CO₂e, a banana is (thankfully) just 110 grams, while an email can be anything from 0.3 grams up to 17 grams.
- This paperback book you're holding is about 2.48 kilograms of CO₂e.
- A pint of dairy milk costs around 1 kilogram of CO₂e.

Lastly, I've planted a little treat at the end of each chapter, a reward for both the depressing information and the torturous writing. Aren't I good to you? However, the following isn't a joke or even an out-take from *Don't Look Up*.

The word 'cake' was mentioned ten times as often as 'climate change' on UK TV programmes in 2020. 'Scotch egg' received double the mentions of 'biodiversity'; while 'banana bread' beat 'wind power' and 'solar power' put together. Which is a bit disappointing. Cake is good, though.