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MEDIA RELEASE

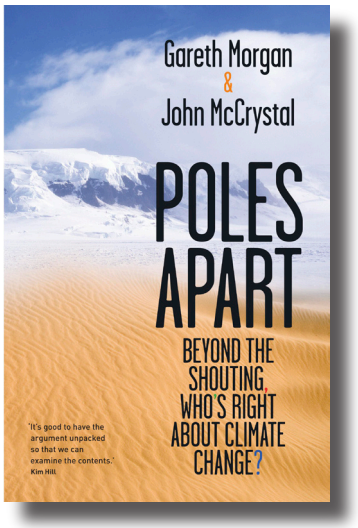
Gareth Morgan digs deep and delivers his climate change verdict

After having trawled through the most compelling evidence from both sides, even Gareth Morgan is surprised where he has ended up in the tricky, emotionally-charged and high-stakes climate change debate.

Morgan and his co-author, John McCrystal, are about to publish their verdict in a major new book called *Poles Apart: Beyond the shouting, who's right about climate change?,* in-store from 15 May.

The authors will present their findings at a high-profile, free, public event at Parliament, on **Tuesday, 19 May** hosted by Jeanette Fitzsimons MP, Green Party Co-Leader, and chaired by *National Radio's* Chris Laidlaw. A second event will be held the following night in Christchurch, presented in association with *The Press* newspaper.

With the Intergovernmental Panel on Climate Change (IPCC) having just held their 30th plenary session, there seems to be plenty of evidence that the Earth's getting hotter. The rate and scale of the change in global average temperatures is as great as anything the Earth has experienced in the past 2000 years and we seem to be losing ice at present that the Earth hasn't seen the back of in five millennia.



Title: Poles Apart
Author: Gareth Morgan & John McCrystal
RRP: $39.99
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The vexing question for Gareth Morgan has been what or who's to blame for climate change. Having traversed much of the globe by motorcycle, from the frozen wastes of the Siberian and Alaskan north to the silence of Antarctica's Ross Sea and via drought-ravaged equatorial Africa, he's seen at first-hand the subtle but profound changes that warming is bringing about.

Although he had his hunches, Morgan still couldn't make up his own mind: Is the present warming a direct result of human activity (anthropogenic) — the result of increased greenhouse gases, as 'alarmists' argue — or is it a natural phenomenon, as the sceptics and deniers claim, and the entire 'global warming' panic simply an overreaction and a beat-up?

For Morgan, the uncertainty around the issue hasn't been for lack of information. In fact, he says it's without doubt the fastest-growing body of research in the world today. It's just that, as far as Morgan is concerned, he's never had the key information laid out before him simply and clearly so that he can make up his own mind.

The science community has access to all sorts of fancy climate science tools, but there has been little or nothing out there for Mum, Dad and the kids to help them grapple with "the most important issue our generation will face – far more important than workaday war, famine, pestilence, or tax hikes. Every single one of these will follow in the train of global warming, if it eventuates."

So Morgan's dug deep, investing a considerable sum of his own money to hire leading scientists — from both

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camps — to answer his questions; and, in turn, share the answers with ordinary Kiwis who, like him, just want some straightforward climate change information. (It's a method he's used to good effect — time and time again — with his two other passions: finance and economics.)

His findings are the basis of this compelling and surprisingly entertaining exploration of one of the biggest topics of the 21st century.

This unique book defines climate change, explains the science of taking the Earth's temperature, looks at the respective cases of the alarmists and the sceptics, examines the anecdotal evidence and the politics of this dialogue, and then comes to a conclusion based on all this research. It also includes the very latest information from crucial scientific investigations such as the Antarctic drilling programme.

Although Morgan and McCrystal have reached a conclusion, they admit it's by no means an open and shut case. Two things they are clear about, after having put the book together, is that we've learned only just enough to know how little we know and the science on this whole thing is far from settled. There are compelling theories, but the evidence has been less than unequivocal, they say. Just how it all works is not fully understood because climate science is comparatively young and the tools used to try and make sense of climate in the making is younger still.

In his characteristic, pull-no-punches style, Morgan even-handedly canvasses what he and McCrystal believe to be the key issues and findings on the subject, dishing out bouquets, brick-bats and sympathy to both sides along the way.

One of the biggest frustrations and disappointments for Morgan has been the need to endure a lot of bickering, infighting and self-serving rhetoric from both sides, just to get to the science itself.

The topic "just seems to get danders up," says Morgan. "Neither side is above out-and-out mud-slinging." He says professional egos and corporate agendas are getting in the way of scientific clarity. It suits the big energy companies for the public to remain distracted, and a lot of money and effort goes into fuelling this confusion. On the other hand, those working at the coal face of climate research seem to have little interest in engaging with even the most scientifically plausible of the sceptical arguments, preferring simply to shout that the argument's over. The two sides are, quite literally, poles apart.

"I suspect there's a big chunk of the population who are either fence-sitters or they've simply switched off because they're so overwhelmed by the unrelenting bombardment of conflicting information and mixed messages swirling about.

"It's such a complex subject but John and I have done our best to simplify things with families in mind. That's why the humour's there too. I needed to keep a sense of humour through this whole process to keep myself from nodding off. The science is pretty heavy duty stuff.

"The first few chapters are pretty much a refresher geography lesson in terms of how the environment works. It's essential that people understand this and then they can move on.

"Our closing chapter, which includes the verdict, is a quick wrap so that people can go off and think about climate change in a more engaged way."

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In a nutshell:

• Anthropogenic means ‘caused by human activity’ and it is this — especially the consumption of fossil fuels such as oil and gas since the industrial revolution started in 1750 — that has generated an increase in ‘greenhouse gases’, trapping in the lower atmosphere heat otherwise destined to be re-radiated into space.

• The IPCC (Intergovernmental Panel on Climate Change) was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, and was charged with assessing the state of the science on the question of climate change. The IPCC comprises the plenary panel which meets annually. The IPCC also releases assessment reports — containing the aggregate results of the work of countless scientific researchers, lead authors, reviewers and editors — onto the internet on average once every four and a half years.

• The hypothesis of anthropogenic global warming is based on well-established principles of physics and chemistry. Greenhouse gases do absorb CO_2 and there are significant concentrations in the atmosphere.

• The climate is naturally changeable and it has changed dramatically in the past without any help from human beings.

• Global average sea and surface temperatures have been rising. Carbon dioxide levels have also been rising. Historically, it appears there’s a link between these two things.

• Significant global warming would likely have deleterious consequences for the human and natural worlds. Various effects of warming can be seen in: the **cryosphere**, where the Earth is losing ice at an unprecedented rate, with the rapid and general retreat of glaciers, the shrinkage of annual Arctic sea ice, and the collapse of ancient ice shelves; the **aquasphere**, where the world’s oceans are warming, growing more saline, sea levels are rising and seawater is absorbing less CO_2; the **atmosphere**, where weather patterns (which, ultimately, are driven by temperatures, particularly of the oceans) are changing, with the tropics expanding, the belts of westerly winds in the high latitudes migrating polewards; and the **biosphere**, where the range of a number of species is changing, with the retreat to higher altitudes and latitudes of creatures adapted to cooler climes.

• The rate and scale of warming is a concern. The proxy records considered reliable — such as the measurement of isotopic ratios in ice cores — indicate that the rate and scale of the change in global average temperatures is unprecedented in the last 2000 years. We seem to be experiencing ice loss at present that the Earth hasn’t experienced for 5000 years.

• The pattern of warming is also concerning. The strongest warming trend is detectable at the poles and (maybe) in the troposphere over the tropics, and it’s the northern hemisphere leading the southern this time around, contrary to other instances of warming as recorded in the ice cores, where the south has invariably led the north. The troposphere has been getting warmer, while the stratosphere has been getting cooler, and while the picture is complicated by the stratospheric cooling effects of ozone depletion, this pattern is consistent with the effect of excess greenhouse gases in the atmosphere.

• Measurements of solar irradiance seem to suggest the climate should be getting cooler rather than warmer, as since records began in the 1970s, the Earth has been receiving progressively less radiation while temperatures have (mostly) risen.

• It can be shown by isotopic analysis of atmospheric carbon that the source of the measured (and uncontroversial) increase in carbon dioxide is due to the combustion of fossil fuels.

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