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Worst bushfire conditions ever seen: Unprecedented danger is 'a firefighter's nightmare'

Australia's east is in the grips of an unprecedented bushfire emergency with conditions that could be worse than those before Black Saturday a decade ago.



Shannon Molloy 10 comments

🕒 NOVEMBER 12, 2019 2:00PM

▶ Video

📷 Image

NSW Emergency Services Minister David Elliot says there are now 55 fires burning across NSW, with half of them "unfortunately uncontained". Image: News Corp Australia

Catastrophic conditions in southern Queensland and across large parts of New South Wales could be worse than those in the lead-up to the deadly Black Saturday bushfires in 2009.

Experts warn [the unprecedented fire danger](#) facing many communities could result in widespread devastation and further loss of life, with the worst potentially yet to come.

"This is a firefighter's worst nightmare," Professor David Bowman, director of the

Fire Centre Research Hub at the University of Tasmania, told news.com.au.

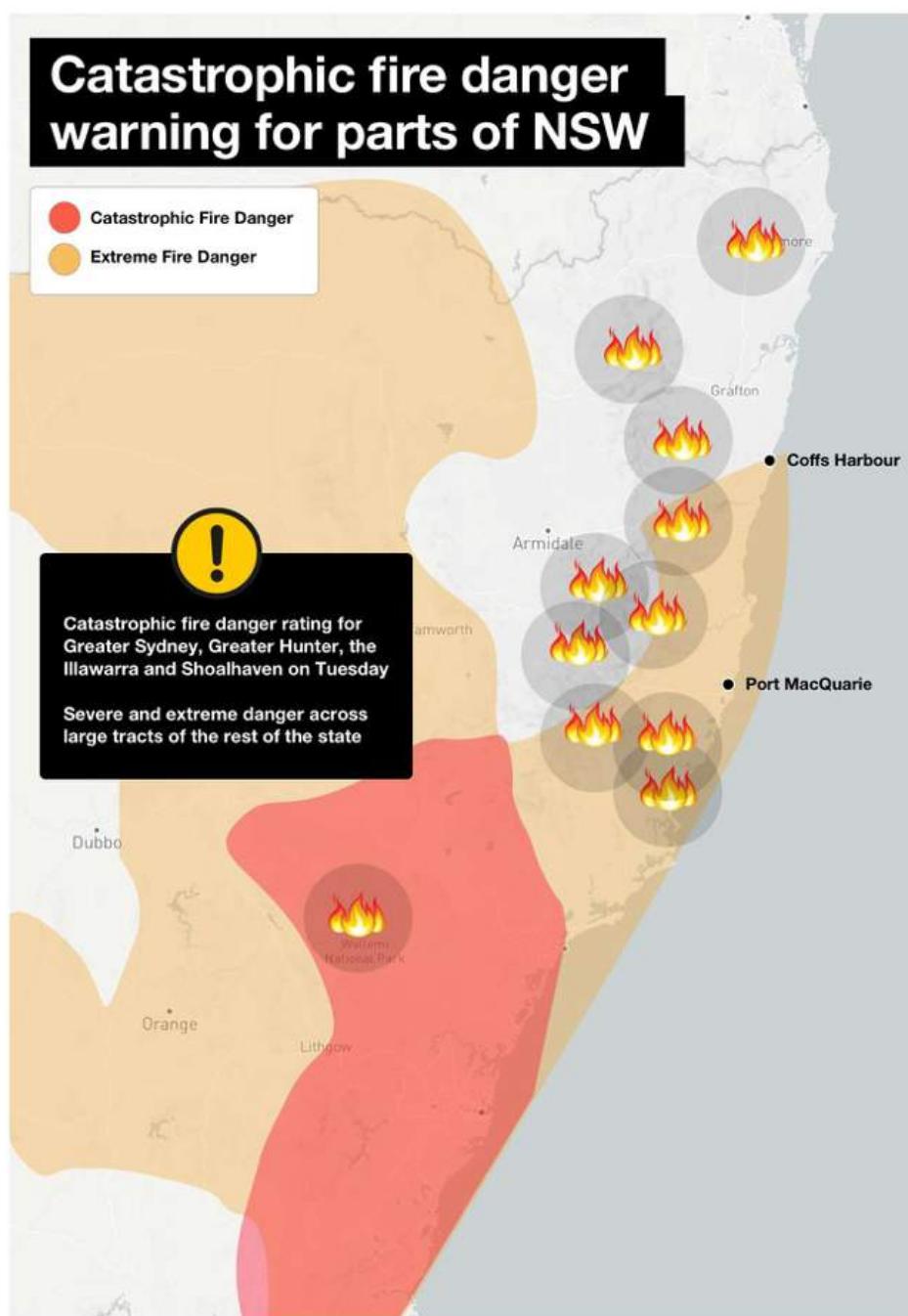
“We’ve got a large number of fires already in an extremely dry landscape, really dangerous fire weather, certain parts of NSW saturated in fire ... this is very concerning.”

Authorities have described the outlook for the week ahead [as the most dangerous they've seen](#).

Greater Sydney, Greater Hunter and the Illawarra/Shoalhaven face “[catastrophic fire danger](#)” today, with Rural Fire Service Commissioner Shane Fitzsimmons saying conditions are already deteriorating.

Professor Bowman said the situation is “as bad, if not worse” than the lead-up to Victoria’s Black Saturday disaster a decade ago, which saw 400 separate blazes burn through 450,000 hectares and claim 180 lives.

RELATED: NSW and Queensland brace for ‘catastrophic’ fire danger as weather conditions worsen



“This is new territory,” he said. “It’s firefighters saying that, the fire managers saying that, it’s the data saying that. This is very different.

“Think about the bush as a sponge. Even if it doesn’t get burnt, it continues to dry out. Until you soak it, until it gets a ‘recharge’, things get worse. The sponge gets so dry that all it takes is a spark and you’ve got a real danger.

“When you’ve already got fire in the landscape, plus a weather setup of strong winds and high temperatures, that is very serious.”

A “perfect storm” of critical factors have combined to present arguably the most serious threat ever seen.

RELATED: The Sydney suburbs in bushfire danger on a day of ‘catastrophic’ conditions

A firefighter holds back a blaze threatening a home at Tinonee near Taree on the NSW mid north coast. Picture: Nathan Edwards. Source:News Corp Australia

NSW Rural Fire Service volunteer Bob Kneipp successfully defends a property in Torrington, near Glen Innes. Picture: AAP Source:AAP

Paul Read, an expert in bushfires at Monash University, said the “seemingly unquenchable fires” already raging are unprecedented in their “sheer size”.

“(They are) reminiscent of some of Australia’s worst, described by survivors as ‘apocalyptic beasts’,” Dr Read said.

“Sadly, I expect more deaths (because of) the sheer size and, despite their best efforts, the stretching of emergency service capabilities.”

WHY THIS TIME IS DIFFERENT

Yesterday, former Fire and Rescue NSW Commissioner Greg Mullins created shockwaves when he declared in *The Sydney Morning Herald* that “this is not normal”.

“This year, by the beginning of November, we had already lost about as many homes as during the disastrous 2001-2002 bushfire season. We’ve now eclipsed 1994 fire losses,” Mr Mullins said.

“Fires are burning in places and at intensities never before experienced – rainforests in northern NSW, tropical Queensland, and the formerly wet old-growth forests in Tasmania.”

Richard Thornton, the chief executive officer of the Bushfire and Natural Hazards Cooperative Research Centre, agreed.

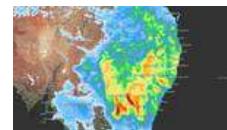
“Unfortunately we knew, along with the fire services, that this fire season had the potential to be devastating,” Dr Thornton said.

A home destroyed by bushfire in Koorainghat, south of Taree in NSW, on Monday. Picture: AAP Source:AAP

A map of the predicted path of spreading bushfires on Tuesday. Source:News Regional Media

The organisation’s seasonal bushfire outlook, [released in August](#), warned of an above-average bushfire potential along the east coast of Queensland and NSW, as well as in the ACT, Victoria and Tasmania.

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“This fire season is influenced by the warm and dry conditions we’ve been experiencing all year,” Dr Thornton said.

“In southeast Queensland and northern NSW, the last three years have been dry and warm – it is these conditions that are driving the severity of the current bushfires.

“When preceding conditions have been like this, and the bush and grass is so dry, it doesn’t take much for a fire to get going once the wind is up. Unfortunately that is what we’ve seen, not just in recent days, but over the last few months.”

These bushfires began burning much earlier than usual, Dr Read said, and are almost certain to get worse as Summer approaches.

“I also think it will expand northwards and southward across the whole of the eastern seaboard,” he warned.

Drought and extreme dry conditions in bushland means fuel is already quite crisp, Dr Read said. The landscape is also plunging further into a hot cycle.

RELATED: Live updates – state of emergency as firefighters face first catastrophic day

Large parts of NSW face catastrophic bushfire danger on Tuesday, with residents in bushland areas told to leave early rather than wait for fresh fires to start. Picture: AAP Source:Supplied

Firefighters work on a controlled burn in Koorainghat, south of Taree in NSW on Monday. Picture: AAP Source: AAP

Jim McLennan, a bushfire safety researcher at La Trobe University, said the areas where the fires are burning are also outside the norm.

“These areas have rarely had intense fires because of their moist soils and vegetation,” Professor McLennan said.

“However, the fire situation is consistent with our new world of bushfire threat associated with climate change. Residents have previously not had to contend with such intense fires threatening so many locations.

“Levels of property preparation to resist ember attack, and household readiness to evacuate, are both likely to be lower than desirable.”



Darren Pateman/AAP

A Gloucester fire crew member fights flames at Kooaringhat, near Taree in the Mid North Coast region of NSW, Tuesday, November 12, 2019.

THINGS MUST CHANGE NOW

In April, Mr Mullins [and 22 other former fire emergency chiefs wrote a joint letter](#) to Prime Minister Scott Morrison requesting an urgent meeting about a looming disaster.

The group expressed its concern about the additional danger poses by climate change and the “increasingly catastrophic extreme weather events putting lives, properties and livelihoods at greater risk”.

Mr Mullins sent a follow-up letter to the PM in September, repeating his request to sit down to address the “matter of national significance and high priority”.

Zoe Daniel  
@zdaniel

These are the letters sent by former NSW Fires Chief Greg Mullins and 22 other former emergency chiefs to the Prime Minister in April and September predicting a bushfire crisis and requesting a meeting. [#nswfires](#) [#auspol](#)

9:42 AM · Nov 10, 2019 

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In recent days, a number of politicians – from NSW Premier Gladys Berejiklian to Deputy Prime Minister Michael McCormack – have attacked the issue of climate change being raised.

They say it's not the time to discuss it while fires continue to rage.

“Fire scientists are reluctant in some ways to be talking about these issues during a fire event, but we don't talk about it outside of fire events,” Professor Bowman said.

“These are extreme weather-driven events. There's a big climate component – it's not the only reason and there are other factors involved. But climate is a big part of it.

“In the heat of the moment, we see this fairly shallow political pointscore. It's great that politicians are talking about bushfires, but it doesn't really have the depth that it needs.

“I really hope that after this event, things can calm down and we can have a more nuanced and more enduring political debate.”

Wytaliba resident Storm Sparks holds her son Zeke as she waits to get back to her house at a roadblock near Glen Innes on Monday. Picture: AAP Source: AAP

Protesters at the Bushfires Climate Change Protest outside NSW parliament today. Picture: Damian Shaw Source:News Corp Australia

Dr Thornton said it's no longer acceptable to "keep doing things the same" when the threats continue to change.

It's no longer possible for fire authorities to be sure of what's possible in seasonal cycles, he said.

"We need to focus on mitigation from climate change. This is an area in critical need of further research into weather prediction, land planning, infrastructure development, population trends, and community awareness.

"Yes, climate change is causing more severe weather, but demographic changes are having an equal impact and deserve just as much of our attention."



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Australia seen as being 'totally disconnected from reality' on world stage, climate expert says

While chunks of Australia's east burns and Sydney chokes on dangerous smog, the global community is looking at Australia in dismay.



Shannon Molloy 691 comments

DECEMBER 10, 2019 8:35AM

Video

Image

Heatwaves are a hallmark of an Australian summer. But they're getting hotter, becoming more frequent, and lasting longer.

Australia has sent Energy Minister Angus Taylor to the final days of a climate summit in Spain, where senior figures from around the world are likely to look at him in dismay.

That's because while much of the east coast burns and Sydney chokes on dangerous levels of smoke, [Mr Taylor's](#) mission is to keep open a loophole that allows the government to fudge the numbers on emission reduction targets.

"It's a loophole that allows for some clever accounting and makes it easy for

Australia to hit its Paris targets, and which its banking on doing most of the work and heavy lifting,” Richie Merzian, director of the Climate and Energy Program at think tank The Australia Institute, explained to news.com.au.

“That loophole is now in jeopardy because a draft decision is being considered to close it. And so, Angus Taylor will be lobbying to keep it open.”



Beachgoers are seen on Milk Beach as smoke haze from bushfires in New South Wales blankets Sydney. Picture: AAP Source: AAP

Sydney has choked on toxic levels of smoke for several days. Picture: Getty Images Source: Getty Images

The climate expert, who’s in Spain for the summit this week, said years of inaction and empty claims of progress made Australia something of a laughing stock.

“When you talk to some Europeans, they [look at Australians](#) like they’re from a different planet,” Mr Merzian said.

“They cannot comprehend how a country [can literally be on fire](#) and admit the fire emergency is [unprecedented](#), its experts knowing that climate change exacerbates and supercharges fires, and at the same time and in the same breath lobby for special consideration to do as little as possible on climate action.

“It beggars belief. In some corners, Australia is seen as being totally disconnected from reality.”

RELATED: [Australians believe climate change has made the threat of bushfires worse](#)

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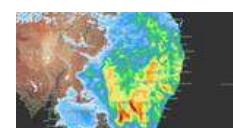
Fire authorities are warning that the worst could be yet to come, with a long, hot and dry summer ahead. Picture: Matrix News Source: Matrix

The issue of climate change has become extremely polarised and politicised in Australia, but that’s not the norm globally, Mr Merzian said.

“Yes, there are places, like Australia and the United States, where the climate discussion is highly ideological and people are divided and this is seen as an issue for one side of politics,” Mr Merzian said.

“But those places are in the minority. The majority of countries – not just Europe, but a number of developing countries – are committed to tackling the causes and

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impacts of climate change.”

A chart plotting Australia's share of world emissions in total, and per capita. *Source:Supplied*

Last week, Prime Minister Scott Morrison declared that the country was on track to meet and likely exceed the emission reduction targets set by the Paris agreement. But [without that loophole, the stark reality of the situation would be clear](#), Mr Merzian said.

“Australia is so far off achieving anything meaningful,” he said.

“Emissions continue to trend upwards. They have been since Australia dismantled its working Emissions Trading Scheme.

“The ETS reduced Australia’s emissions by 2 per cent nationally whilst growing the economy by 5 per cent. It did what it was designed to do – bring emissions down in an economically efficient way.

“Since then, we’ve seen emissions increase and the current climate policies that replaced the ETS fail.”

Before his current role, Mr Merzian spent a decade as the government’s negotiator in the UN climate process.

He described [Australia’s current global credentials as “very poor”](#).

He pointed to a series of graphs that puts Australia’s standing among other developed and even developing nations into context.

For starters, it’s among one of five out of 32 OECD nations to see its emissions increase, placing it in an unwelcome minority.

RELATED: Australia in ‘uncharted territory’ with bushfire risk this summer, with the worst yet to come

A chart showing OECD nations, with Australia one of just five to see levels increase since 2005. *Source:Supplied*

“When it comes to global rankings, when you look at all of the countries in the world, Australia is the 14th largest emitter out of 196 parties to the Paris agreement,” Mr Merzian continued.

“In terms of total emissions, we’re in the top 10 per cent globally.

“When the Prime Minister says Australia is only 1.3 per cent of global emissions ... that’s fanciful. Australia is so high compared to the majority of other countries, per capita.

“But per capita aside, there are 40 countries with larger populations that have lower emissions than Australia does.”

RELATED: Worst bushfire conditions ever seen – unprecedented danger is ‘a firefighter’s nightmare’

Australia’s mission at climate talks in Spain is to prevent the closure of a loophole that allows for clever accounting on emission reduction targets. Picture: Kym Smith *Source:News Corp Australia*

Over the past decade, most OECD countries have managed to curb emissions and put downward pressure on long-term trajectories.

“In Australia, which has had the luxury of taking its time to get this climate policy right, it has managed to bungle it multiple times and lose a decade worth of time,” he said.

The comment argument from opponents of climate action is that it’s pointless for

Australia to act while the world's big emitters – namely China – sit on their hands.

"Australia should spend a lot of time and effort to bring China onto a path where it's willing to increase its efforts," he said.

Australia's emissions both domestically and in terms of fossil fuel exports. *Source:Supplied*

"Look at the EU as a good example – particularly Germany. Angela Merkel is hosting a special summit next September with China and EU leaders as a way of encouraging them to take on a more ambitious climate action pathway.

"At the same time, Germany is getting its own house in order and has set out a deadline and a plan to transition away from coal. Now it's looking at how to help others take similar actions from a point of credibility."

Is Australia doing its fair share in climate action? Comment below



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10 ways climate change can make bushfires worse

Bushfires around the world are becoming more intense, more widespread and are happening more often. There are many reasons for this, and experts say most of them can be pinned on one thing: climate change.

AFP  JANUARY 21, 2020 2:23PM

Climate change is a “national emergency” that is “driving natural disasters like the current catastrophic bushfires,” according to former NSW fire chief Greg Mullins. Mr Mullins told Sky News he is urging the government to hold...

Raging bushfires such as those which have destroyed large parts of Australia since September — along with California, Portugal and Spain in 2019 — have become more common in recent years.

Scientists say there are numerous ways in which climate change can make them worse.

Other factors have also fuelled an increase in the frequency and intensity of major fires, including human encroachment on wooded areas, and questionable forest management.

“The patient was already sick,” said David Bowman, a professor of environmental change biology at the University of Tasmania and a wildfire expert.

“But climate change is the accelerant.”

Fine weather for a fire

Any firefighter can tell you the recipe for “conducive fire weather”: hot, dry and windy.

No surprise, then, that many of the tropical and temperate regions devastated by a surge in forest fires are those predicted in climate models to see higher temperatures and more droughts.

“Besides bringing more dry and hot air, climate change — by elevating evaporation rates and drought prevalence — also creates more flammable ecosystems,” noted Christopher Williams, director of environmental sciences at Clark University in Massachusetts.

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More fuel

Dry weather means more dead trees, shrubs and grass -- more fuel for the fire. “All those extremely dry years create an enormous amount of desiccated biomass,” said Michel Vennetier, an engineer at France’s National Research of Science and Technology for Environment and Agriculture (IRSTEA).

“That’s an ideal combustible.”



One third of Kangaroo Island was destroyed by fires. Picture: Hugh Watters Source:Supplied

Change of scenery

To make matters worse, new species better adapted to semi-arid conditions grow in their place.

“Plants that like humidity have disappeared, replaced by more flammable plants that can withstand dry conditions, like rosemary, wild lavender and thyme,” said Vennetier.

“The change happens quite quickly.”

Thirsty plants

With rising mercury and less rain, water-stressed trees and shrubs send roots deeper into the soil, sucking up every drop of water they can to nourish leaves and needles.

That means the moisture in the earth that might have helped to slow a fire sweeping through a forest is no longer there.

More lightning

“The warmer it gets, the more lightning you have,” said Mike Flannigan, a professor at the University of Alberta, Canada and director of the Western Partnership for Wildland Fire Science.

At the same time, he noted that 95 per cent of wildfires worldwide are started by humans.



2019

Our most devastating bushfire season

From August 2019 to January 2020, Australia's unprecedented bushfire emergency burned more than 18 million hectares, left 34 people dead, killed up to one billion animals, and destroyed thousands of homes and businesses.



Weakened jet stream

Normal weather patterns over North America and Eurasia depend heavily on the powerful, high-altitude air currents — produced by the contrast between polar and equatorial temperatures — known as the jet stream.

But global warming has raised temperatures in the Arctic twice as fast as the global average, weakening those currents.

“We are seeing more extreme weather because of what we call blocked ridges, which is a high-pressure system in which air is sinking, getting warmer and drier along the way,” said Flannigan.

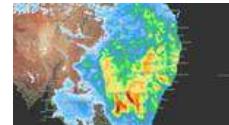
“Firefighters have known for decades that these are conducive to fire activity.”

El Nino

In the southern hemisphere, the periodic — every two to seven years — weather cycle known as El Nino leads to reduced rainfall, warmer temperatures and increased fire risk in Indonesia and eastern Australia, especially the southeast. The current fires, however, are not influenced by an El Nino event.

Unmanageable intensity

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Climate change not only boosts the likelihood of wildfires, but their intensity as well.

“If the fire gets too intense” as in Australia right now, and in Greece last summer -- “there is no direct measure you can take to stop it,” said Flannigan.

“It’s like spitting on a campfire.”



The increased intensity of bushfires make them almost impossible to fight. (Photo by Peter Parks / AFP) Source:AFP

Beetle infestations

With rising temperatures, beetles have moved northward into Canada’s boreal forests, wreaking havoc — and killing trees — along the way.

“Bark beetle outbreaks temporarily increase forest flammability by increasing the amount of dead material, such as needles,” said Williams.

Positive feedback

Globally, forests hold about 45 per cent of Earth’s landlocked carbon and soak up a quarter of human greenhouse gas emissions.

But as forests die and burn, some of the carbon is released back into the atmosphere, contributing to climate change in a vicious loop that scientists call “positive feedback.”

** This report was originally published in November 2019*

AUSTRALIA'S WORST BUSHFIRES



Originally published as [10 ways climate change makes fires worse](#)



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Climate change and its impact on

Heatwaves are a hallmark of an Australian summer. But they're getting hotter, becoming more frequent, and lasting longer.

 JANUARY 25, 2020 12:03PM

Heatwaves are a hallmark of an Australian summer. But they're getting hotter, becoming more frequent, and lasting longer.

When considering the science around climate change, one expert believes it's useful to compare it to another famous hypothesis – the theory of gravity.

Not many people would think to cast doubt on the theory of gravity, and according to Professor David Karoly, who leads the Earth Systems and Climate Change Hub in the Australian Government's National Environmental Science Program at CSIRO, the evidence that human activity is causing global warming is so strong it is equal to this theory.

“The theory on the human impact on climate change is just as strong, or stronger, than the scientific basis for the theory of gravity,” Prof Karoly told news.com.au.

Prof Karoly said that there was also evidence [climate change](#) was a factor in recent [devastating bushfires in Australia](#).

RELATED: Photos that sum up Australia's unprecedented fire season

RELATED: How 2019 bushfires compare to other years

Prof Karoly will explain the science at a [free public lecture](#) as part of the Australian Mathematical Sciences Institute 2020 Summer School public lecture in Melbourne

on Wednesday, January 29. His speech will also be [streamed online](#).

When we talk about science, Prof Karoly believes it's helpful to remember we are not talking about "beliefs".

Science is in fact a process that tests a hypothesis to provide conclusions about the way nature works.

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Not convinced? Here's the science.

HOW DO WE KNOW HUMANS ARE CAUSING IT?

Some say the world's climate has always changed and in the past there have been ice ages and warmer glacial periods, which is true.

The difference is whether humans have caused the changes.

We know that humans could not have had any influence on the past ice ages for example, because there were no humans on the planet.

So how do we know that the climate changes now are due to human activity?

Prof Karoly said there were two approaches.

Seeing red. A familiar image for many Australians now. Picture: Alex Coppel. Source:News Corp Australia

LET'S LOOK AT WHAT WE CAN OBSERVE

The first approach involves examining "observational data". If we want to identify long-term trends we need to look at data collected over a wide area and across at least 30 years.

To figure out why the Earth is warming, there are some logical factors to look at first.

The main things that impact the Earth's climate are sunlight from the sun, how it is absorbed in the atmosphere and how energy is lost from Earth and sent into space.

One thing that can impact the amount of sunlight we get includes the amount of clouds, ice and snow because they all reflect sunlight, making it cooler.

However, greenhouse gases in the Earth's atmosphere can also affect temperatures. These gases make the planet hotter because they absorb heat radiation from the Earth and prevent this from being released into space as quickly.

Greenhouse gases can include carbon dioxide, methane and water vapour.

"When greenhouse gases increase, the surface temperature of the Earth increases," Prof Karoly said.

So what does the data tell us about these factors?

'SOMETHING WEIRD IS HAPPENING'

Analysis of air bubbles from ice cores trapped in ice in Greenland and Antarctica showed that over the last 10,000 years, carbon dioxide varied a small amount, hovering around 280 and 290 parts per million.

But if you look at the last 150 years, it's a different story. Carbon dioxide now sits at 400 parts per million.

"This has increased by more than 40 per cent," Prof Karoly said.

"It is higher than at any time in the last 10,000 years. In fact, it's higher than any

time in the last million years.”

“So that suggests ... something weird is happening.”

Prof Karoly said you had to go back more than three million years to find a time when carbon dioxide was around 400 parts per million.

“Three million years ago when carbon dioxide was higher, temperatures were more than two degrees warmer and sea levels were more than 10 metres higher,” he said.

Humans were not around three million years ago so they can’t be blamed for the high amount of carbon in the atmosphere.

So what was cause of these higher levels of carbon dioxide?

Scientists at Mount Brown South in Antarctica working on Antarctic ice core samples. Picture: Supplied. Source: News Corp Australia

Some experts have suggested the carbon dioxide was actually being released from the ocean.

“A warmer ocean can’t absorb as much carbon dioxide,” Prof Karoly said. “As it heats up, it can’t hold as much carbon and this is released into the atmosphere.”

However, the type of carbon dioxide the ocean releases is different to that released by burning fossil fuels and land clearing.

Prof Karoly said the carbon dioxide has a different chemical composition so scientists are able to distinguish between the two.

“Carbon dioxide released from the ocean doesn’t use up oxygen,” Prof Karoly said.

Over the last 40 years, scientists have been able to monitor the amount of oxygen in the atmosphere and the fall in oxygen has exactly matched the increase in carbon dioxide that you would expect if it was coming from the burning of fossil fuels and decomposition of vegetation from land clearing.

“What we now know, is that the increase to carbon is not natural, it’s due to human activity, from the burning of fossil fuels and land clearing,” Prof Karoly said.

This is not just a theory, it is based on “observational evidence”, that is, scientists have data that shows the increased carbon dioxide in the atmosphere is coming from fossil fuels and land clearing.

AND NIGHTS ARE GETTING HOTTER

We can also look at other observational data to help strengthen the theory.

If the Earth was warming up because of increasing sunlight, then you would expect temperatures during the day to increase and for it to be cooler at night (because there is no sun at night!).

However, what scientists found is that nights were actually warming up more so than days.

This points to greenhouse gases playing a role.

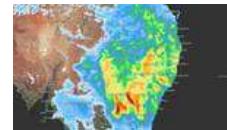
As noted above, greenhouse gases trap heat radiation from the Earth and stop it from being released into space as quickly.

This effect can be seen for example, on nights with more clouds, which don’t cool down as much as there is more water vapour in the atmosphere.

In contrast, deserts are more cool at night because there is not as much water vapour over these areas, and it’s a similar story in coastal areas.

So if nights are warming up more than days, it’s unlikely that the sun is playing a role in this, it’s more likely that greenhouse gases are trapping heat on Earth and pushing up temperatures.

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Carbon emissions from coal-fired power stations like this one in Victoria's La Trobe Valley release carbon into the atmosphere, which captures heat from Earth and delays it from being released into space. Picture: Julian Smith/AAP Source:AAP

Scientists have also looked at temperatures in the Earth's stratosphere, which is the layer of the atmosphere from about 10km up.

The stratosphere warms because the ozone layer it contains absorbs the sun's ultraviolet radiation.

If there was more sunlight, you would expect the upper atmosphere to warm up because it was absorbing more ultraviolet rays.

But if there was an increase in greenhouse gases then you would expect the stratosphere to be cooler because carbon dioxide is efficient, not only at absorbing heat radiation but also at releasing it into space, cooling it down.

"Observations have shown that the surface and lower atmosphere have warmed, and the upper atmosphere has cooled in the last 50 years — the entire time we've been monitoring it through balloons and other satellites," Prof Karoly said.

"This pattern of temperature change has happened everywhere and cannot be explained by increasing sunlight," he said. "And it's been getting stronger, which is exactly what you would expect from increasing greenhouse gases in the atmosphere."

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The first approach to looking at climate change is "observational data" but you can also use complex mathematical models of the climate system.

Around the world, Prof Karoly said more than 50 complex climate models had been developed to test climate theories on a larger scale.

While some may question how scientists could simulate the climate when they can't forecast the weather over long periods of time, Prof Karoly said it was because the climate models looked at levels of radiation, which determine long-term climate.

"Models solve physical equations for the absorption and transmission of radiation in the atmosphere, and for the motion of the air, and for the motions of the ocean," he said.

These simulations have shown that without human influences there would not be any long-term warming trend.

Temperatures would have stayed pretty much the same with only two-tenths of a degree of warming.

Instead the world has warmed by 1.1 degrees and the warming over Australia has been even higher than the global average, at 1.5 degrees.

This is because land warms up faster than the ocean.

Evidence of 100 years of human influence on Australian average temperature variations. Source: Bureau of Meteorology/CSIRO State of the Climate 2018 report. Source:Supplied

WHAT ABOUT THE BUSHFIRES?

So how does this relate to the catastrophic bushfires that have raged across Australia in recent months?

Higher mean temperatures give rise to a greater chance of heatwaves and hot extremes, Prof Karoly said.

"We have good observational data of the current summer and the last 50 years," he said.

“There have been marked increases in heatwaves and hot days in all parts of Australia.”

Australia experienced its [hottest and driest year on record in 2019](#) and [December 2019 had a number of Australia’s hottest days ever recorded](#).

“We have also seen increases in sea levels, exactly what you would expect from climate change and the warming of ocean waters and melting of ice sheets and glaciers on land.”

When it comes to the intensity of bushfires, Prof Karoly said there are certain factors that were known to be important.

The McArthur Forest Fire Danger Index was developed to measure the degree of fire danger in Australian forests and the likelihood they will occur.

It combines factors including the temperature of air, wind speed, the dryness of the air (measured by relative humidity) and the dryness of the fuel and the ground (measured by rainfall over the previous month).

“So the combination of high temperatures, strong winds, low humidity and no rainfall leads to extreme fire danger,” Prof Karoly said.

These were exactly the conditions experienced in NSW and southern Queensland in September and October where there were record high temperatures and low humidity.

These conditions were also experienced in Canberra, coastal NSW and particularly East Gippsland in Victoria, which was why there was extreme fire danger in these areas.

The next question is whether climate change caused these conditions.

Prof Karoly says climate change has led to higher temperatures, as discussed above, but it’s unlikely it had a major role in the drought conditions.

He said if the rainfall in 2019 was related to climate change you would expect wetter conditions in northern Australia, not the record dry year experienced in 2019.

Climate change has also been linked with the long-term rainfall in the cool season in south-east Australia.

Prof Karoly believes the drought in 2019 may actually be due to “natural variations” and the “Indian Ocean Dipole”.

The IOD refers to the seesawing temperatures in the Indian Ocean, with colder waters closer to northern Australia and hotter waters closer to Africa.

There were also changes in wind patterns in the south of Australia and over Victoria and NSW, which led to stronger westerly winds that reduced the rainfall over the NSW coast and East Gippsland, where the worst fires and conditions have been.

Prof Karoly believes it was the stronger westerly winds and the Indian Ocean Dipole that ramped up the fire intensity, however, this was combined with the extreme temperatures caused by climate change, sparking Australia’s deadly fire season.

“So it was a combination of natural climate variability and climate change,” he said.

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Study shows climate change link to devastating 2019/20 Australian bushfire season

A study shows climate change did play a part in Australia's devastating bushfires, increasing the likelihood of extreme temperatures.



Charis Chang  CharisChang2  273 comments

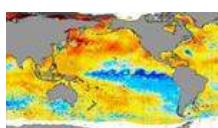
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found a strong link between climate change and hotter-than-normal conditions in Australia during the time of the 2019/20 fires.

Last year was the warmest and driest year in Australia since temperature and rainfall records began in 1910 and 1900, and it follows two other dry years in large parts of the country.

According to the Bureau of Meteorology's Annual Climate Statement 2019, these conditions contributed to a more widespread and intense fire season that started earlier in the season than usual. Other factors included a strong Indian Ocean Dipole and the Southern Annual Mode.

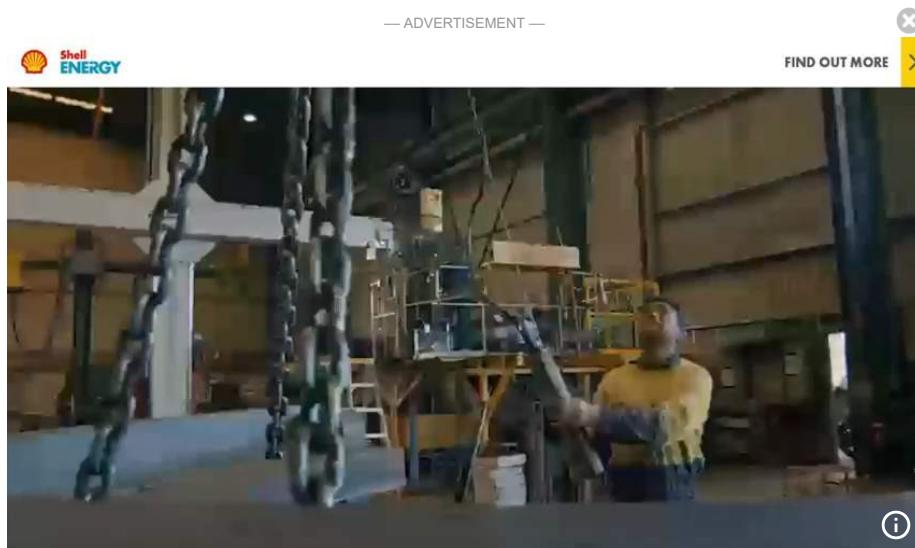
The WWA study looked at what caused the high temperatures and prolonged dry conditions between September to February, to see if they could be linked to climate change.

While they couldn't link climate change to the drought, it did find a 30 per cent increase in the likelihood of high temperatures.

As climate-heating emissions continue to increase, "We will be facing these extreme conditions more often than in the past," said Maarten van Aalst, a climate scientist and director of the Red Cross Red Crescent Climate Centre.

"Should we be worried about this? Yes, very," he told journalists.

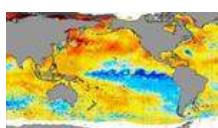
The study also suggested that scientific models may be vastly underestimating the impacts of rising temperatures.



"We found that climate models struggle to reproduce these extreme events and their trends realistically," Professor Geert Jan van Oldenborgh of the Royal Netherlands Meteorological Institute said.

"However, they always underestimate the increase in chances for extreme fire risks such as Australia saw in the last few months."

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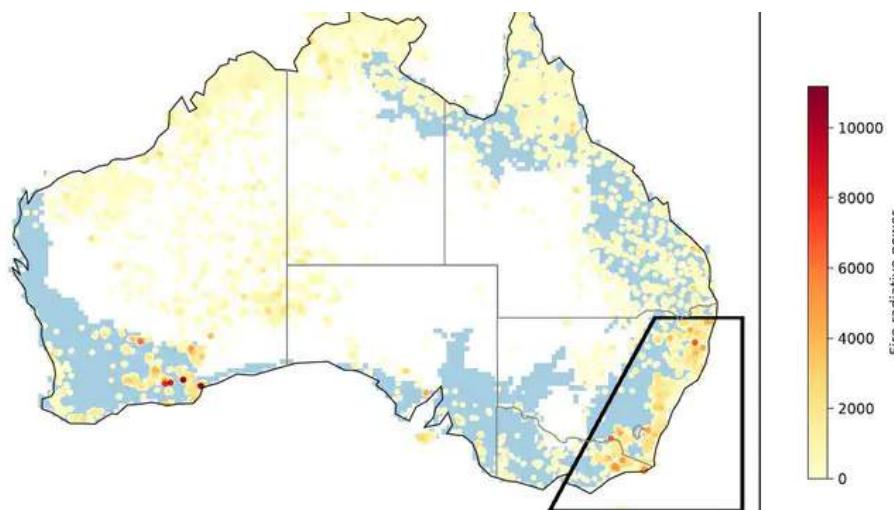
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The severity of bushfires in Australia from July 1, 2019 to January 10, 2020, with the most severe fires shown in red. The forested areas are shown in blue. Picture: World Weather Attribution Source: Supplied

The 2019/20 bushfires burned more than 11 million hectares – an area larger than Ireland or South Korea – destroyed nearly 6000 buildings and killed at least 34 people and an estimated 1.5 billion animals.

The economic costs of the fires could reach \$100 billion, according to separate analyses.

“Climate change is now part of Australia’s landscape,” Dr Sophie Lewis of the University of New South Wales said.

“Extreme heat is clearly influenced by human-caused climate change, which can influence fire conditions. There is evidence that Australian fire seasons have lengthened and become more intense, and extreme temperatures have played a role in this.”

“Climate change contributed to the fires and extreme heat we lived through in southeastern Australia.”

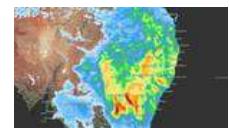
A week of hot temperatures, like that experienced in southeast Australia in December 2019, was 10 times less likely in 1900 than it is now, while heatwaves like the one in Australia in 2019/20 are already hotter by 1-2°C than they were around 1900.

Dr Friederike Otto of Oxford University said the study was not an ultimate answer to the question of how climate change was impacting things like fire but did confirm it was an important driver locally.

“We need to continue to test our models in the real world to improve them so we can provide higher confidence risk information at the scales where people live and make decisions.”

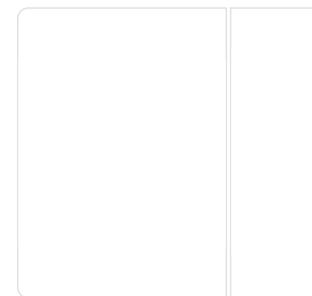
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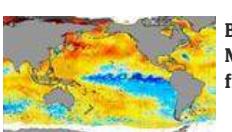
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Our most devastating bushfire season

From August 2019 to January 2020, Australia's unprecedented bushfire emergency burned more than 18 million hectares, left 34 people dead, killed up to one billion animals, and destroyed thousands of homes and businesses.



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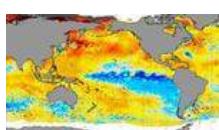


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A fire erupts from bushland southwest of Sydney at the Green Wattle Creek, forcing the firefighters from Fire and Rescue NSW to flee and abandon their fire truck. Picture: Matthew Abbott/Panos Pictures for The New York Times

Source: Supplied

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International Fund for Animal Welfare wildlife carers attending to koalas whose habitats have been destroyed by fire. The IFAW is calling for koalas to be declared an endangered species after at least 5000 died in bushfires over summer.

Picture: IFAW/AAP Source: AAP

Researchers from Australia, Europe and the United States carried out the analysis under the World Weather Attribution project, which provides rapid scientific evidence on how much climate change is fuelling extreme weather events.

The group has so far conducted more than 230 such studies, linking last year's record-breaking heatwave in France and extreme rainfall during Tropical Storm Imelda in Texas, for instance, to climate change.

Not all the events analysed show a connection to global warming.

But the researchers said devastating fire seasons will be at least four times more common in Australia than they were in 1900 if global average temperatures rise 2C above pre-industrial times.

Temperatures have already heated up by a little over 1C, and the world is on track for at least 3C of warming even if all countries meet their commitments to cut emissions under the 2015 Paris Agreement on climate change.

— with Reuters

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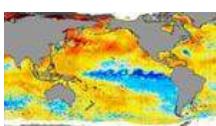
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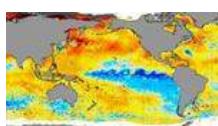
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Rise in deadly fire thunderstorms linked to climate change

Bushfires that ripped through Australia created fire thunderstorms. And there has been an alarming rise in this freak occurrence.

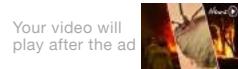


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This bushfire season has been the worst on record, but what elements of it are fact and what has been distorted by myth.

Australia was gripped by an unprecedented and horrific bushfire season this summer.

While the blazes would have happened anyway, they were made worse by climate change, and burned through a whopping area about the size of South Korea - roughly 25.5 million acres.

But not only did the fires devastate communities, bush and wildlife, we also saw the fires create their own weather systems with ferocious fire thunderstorms.

In just one instance in Queensland, dramatic video emerged of a “firenado” tearing

through Ipswich.

These fire weather systems are becoming more common under climate change.

*Today, news.com.au launches its series **Time Is Now**, focusing how climate change impacts Australians' way of life. The series draws on the insights and extensive research of scientists, in special partnership with Judith Neilson Institute for Journalism and Ideas and the Australian Science Media Centre.*



When satellite records first started in 1910 there were barely any fire thunderstorms.

We're now up to 120 - and 62 of those were in one season alone.

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"We've pretty much doubled in one season, which is concerning," Professor Jason Sharples of the University of NSW says.

A fire thunderstorm is created when a rare pyrocumulonimbus cloud forms above a source of heat.

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Fire tornado rips through Central Australia, near Mt Conner, in 2012. Picture: Chris Tangey Source:Supplied

The weather event has almost doubled in the past year. Source:Supplied

It's basically a thunderstorm within the plume of the fire.

Prof Sharples studies fire dynamics and is investigating the most recent bushfire season and its horrendous nature. There were about 30 definite fire thunderstorms and 15 still to be confirmed.

"What we're really trying to do is understand the particulars of the fire and the atmospheric component and understand the balance between those two factors that you need to have right for one of these things to form," he says.

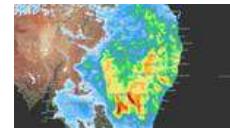
"Fire is a really complex problem and it impacts pretty much all aspects of the environment and society - soil, public health, smoke, water, economic loss - and trying to work out a way to manage all of that is devilishly hard.

"If you think of an ordinary fire you can predict those to a large degree but once you get these things transform into these storm-like systems the fire spread doesn't move into those dynamics anymore."

Graph that shows the rise in fire thunderstorms. The total is now up to 120. Source:Supplied

Prof Sharples says there is no denying climate change is a factor in worsening bushfires.

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A study on the 2018 Queensland fires found the temperatures associated with those fires were four times likely because of climate change.

“Because of climate change you’ve got the heat and dry conditions you need for low fuel moisture content (which fires need),” Prof Sharples says.

“These are basically big thunderstorms. There are certain conditions in the atmosphere that favour these events.

“The upper atmosphere events are going to head in a direction that makes it more conducive for these events to occur.”

Prof Sharples says we need to cut global emissions in order to prevent these fires from happening.

“It’s exasperating,” he says.

“It’s really, really frustrating seeing the narrative going on around the country. People still are trying to point to causes we know aren’t the cause. Things like arson are not what’s driving these sorts of events.”

Prof Sharples says we should be looking at indigenous cultural burning on a broader scale.

“There’s enough evidence to say that’s something we need to look seriously at,” he says.

“There’s a misunderstanding about what cultural burning is about, it’s not just about hazard reduction. It’s not about losing city but keeping country healthy.

“It’s certainly worth a try.”



This is part of a news.com.au project with the Judith Neilson Institute for Journalism and Ideas and the Australian Science Media Centre focusing on the impacts of climate change on Australia's way of life



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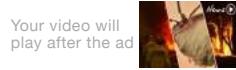
The myths around Australia's horror bushfire season debunked

The bushfires that ravaged Australia this summer brought the country together. It also led to a lot of misinformation being spread.

Dr Dale Dominey-Howes 265 comments

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This bushfire season has been the worst on record, but what elements of it are fact and what has been distorted by myth.

The bushfires that ripped through Australia this summer were the perfect storm, cultivated by bad drought, climate variability and climate change.

The fires would have occurred without climate change but climate change made them worse. Climate scientists knew this was going to happen but not everyone else was as convinced.

Even as they raged, much misinformation was spread as to what caused them and why.

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Here's some of the myths we've heard about bushfires.

MYTH 1: BUSHFIRES HAVE ALWAYS HAPPENED

Sure, bushfires are part of Australia's wild landscape and many species of trees and plants need fire to regenerate but, we need to look at what the experts say.

This year's Australian bushfires were unprecedented for many reasons, the most obvious being there were more ferocious thunderstorms than we've ever seen before.

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In the southern states most heavily impacted, the fires started much earlier in the fire season – in some areas, months earlier than normal.

The background environmental conditions – warm and very dry landscapes – combined to favour the generation and spread of bushfires.



A firefighter conducts back-burning measures to secure residential areas from encroaching bushfires in the Central Coast. Picture: Saeed Khan/AFP Source:AFP

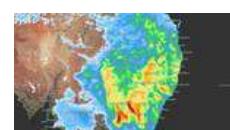
Tragically, reports suggest millions of native animals have been killed by the fires – a much larger number than in any previous bushfire event.

The intensity and ferociousness of the fires in many areas were much greater than firefighters have experienced in the past and we must remember they are the experts with the relevant experience.

Fires were simultaneously spread across a much larger area of NSW and Victoria than at any point in the past – with some so called 'mega blazes' combining to really challenge firefighting experts.

Overall the fires have had far reaching and massive economic as well as human emotional impacts that far exceed anything we've ever experienced before and, in

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fact, a new national survey by the ANU reveals 80 per cent of all Australian's have been affected one way or another by the bushfires – the largest ever.

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How the bushfires ripped across Australia this summer. *Source:Supplied*

MYTH 2: CLIMATE HAS NOTHING TO DO WITH THESE BUSHFIRES

Connected to the first myth, lots of stories have circulated saying that climate has nothing to do with the bushfires experienced in the 2019/2020 Australian summer. This is nonsense.

Climate refers to the 'long term' average of factors such as temperature, wind speed, rainfall and humidity at a particular point on the land surface – say over Perth.

And by long term we mean over 10 or 20-year rolling averages.

This contrasts with 'weather' - the temperature or humidity outside your building right now. Weather varies quickly but climate takes longer to change.

However, the climate in Australia has been changing. For example, over the past 100 years, average Australian land surface temperatures have risen by about 1C, which is remarkable. Obviously, a warmer climate is a climate where fires can more easily start and spread.

The other big issue is that Australia is in the grip of a very significant drought.

Even with widespread heavy rainfall across large parts of Australia in early February 2020, the Bureau of Meteorology 's most recent drought, rainfall deficiency and water availability estimates released on February 6 show vast regions of Australia, over the past 22 months, have had the lowest rainfall records.

East Australia has seen record low rainfall the past three winters which has majorly contributed to the drought.

On top of that, others drivers of Australia's climate intensified the drought and extreme heat over winter and spring, which was also conducive to horrible bushfire weather.

This all happened on top of a 1C warming trend.

Increasing temperatures and lower rainfall both combine to show how climate has an impact on setting the stage to favour bushfire occurrence.

MYTH 3: ARSONISTS ARE RESPONSIBLE FOR AUSTRALIA'S BUSHFIRE CRISIS

Much misinformation has been spread in Australia and overseas this summer about arsonists being responsible for our summer of unprecedented bushfires.

Plain and simple – this is wrong.

While sadly it is true that every year a handful of fire bugs start fires - all mostly very small - less than 1 per cent of the land burned in NSW this year is the result of the work of arsonists. The figures are even lower in the other states and territories.

The vast majority of the 2019/2020 Australian bushfires were all started by dry lightning strikes including the largest mega-blazes in NSW.

In fact, NSW Rural Fire Service (RFS) Inspector Ben Shepherd said lightning was predominantly responsible for the bushfire crisis.

"I can confidently say the majority of the larger fires that we have been dealing with have been a result of fires coming out of remote areas as a result of dry lightning

storms,” he said.

The Gospers Mountain “mega-blaze” and the Green Wattle Creek fire, which were both near Sydney, were ignited by lightning.

All the major blazes in the Snowy Mountains and South Coast which took hold on New Year’s Eve were also started by lightning. This includes the Dunns Road and Green Valley fires that burnt near the state’s south border.

A loan Australian rural firefighter observes the damage caused by bushfires in Queensland. *Source:Supplied*

MYTH 4: GREENIES HAVE STOPPED HAZARD REDUCTION BURNS

This is rubbish. Hazard reduction or back burning is when the dry, dead vegetation that fuels fires is deliberately burned off by fire officials to reduce the overall effects of future or actual fires.

While important, a widely spread myth this season is that a green conspiracy has meant that fire officials have been denied the opportunity to undertake hazard reduction burns. This is just not true.

NSW Rural Fire Service Commissioner Shane Fitzsimmons has clearly indicated that in NSW the fire authorities have managed to undertake about 90 per cent of their planned hazard reduction burns anyway.

Mr Fitzsimmons says the real issue is the available window of favourable weather conditions to undertake hazard reduction burns is now greatly reduced because of climate change, meaning less time is available to undertake burns.

And once fires of the scale and intensity of those we witnessed this summer take hold, hazard reduction burns are unsafe for firefighters and largely ineffective as the fire behaviour is so complex and extensive.

Aside from not being in power, the Greens don’t have anything in their policies to say they’re against hazard reduction burning.

MYTH 5: WE CANNOT CHANGE WHAT’S HAPPENING

When watching the devastating fires on TV it can leave you feeling powerless and unable to do anything.

But, this is not true and there are many simple things we can do as individuals, families, households and communities to mean the fires we have just experienced don’t become the new normal.

Being prepared is the key. Simple examples of things that can be done to ensure future bushfires are not as bad as those we’ve just seen include:

- Adopt or retrofit your property to make sure it’s more bushfire safe
- Clean out your property gutters and cut back vegetation several metres from your home to reduce the chances of fire catching alight
- Develop, talk about and act on a household fire plan
- Turn off gas mains/disconnect gas bottles
- Hose down/wet the side of house and garden facing approaching fire
- Fill baths, bins, buckets and sinks with water
- Move furniture away from windows
- Become a firefighting volunteer and be trained and learn how to fight and survive bushfires

For lots more simple and handy tips of things you can do, check out the [Rural Fire Service Bushfire](#) survival guide.



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Black Summer study: Grim warning on Australia's fire future

A major study into the causes of Australia's horror Black Summer bushfires has tallied the losses and painted a scary picture of the future.

Frances Vinall

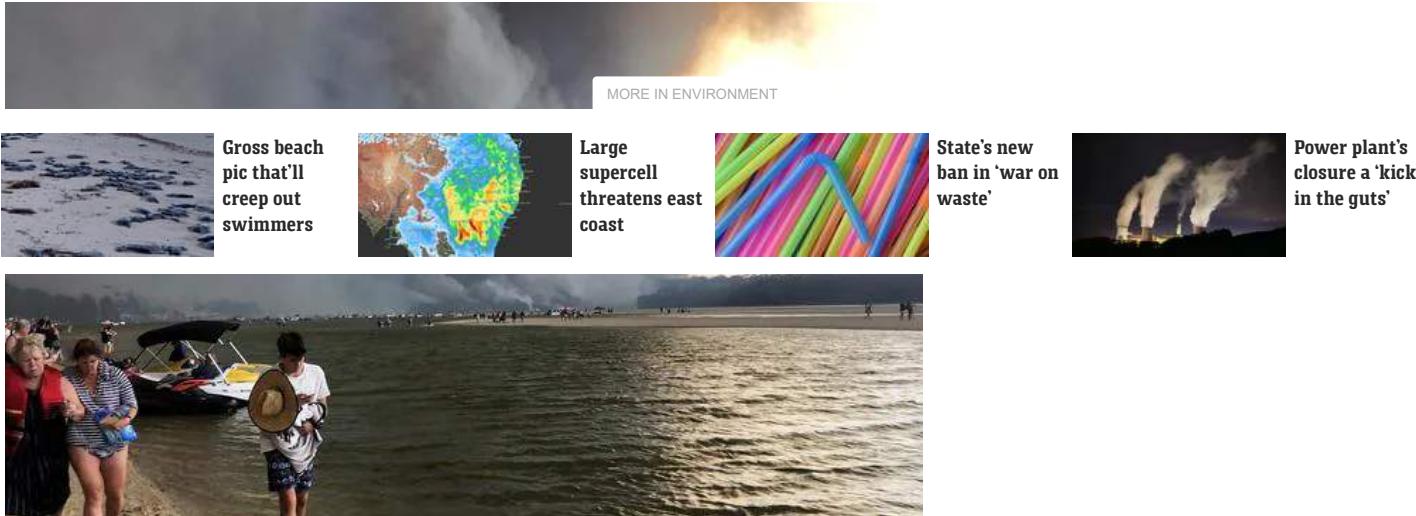
NCA NewsWire  JANUARY 8, 2021 8:56AM

 Video  Image

Experts are warning we could see a repeat of last year's bushfire horror.

Last year's fire season was "unmatched" because 2019 was the hottest and driest year on record, a study of factors behind the Black Summer bushfires found.

The study warns horror fire seasons are likely to continue as well as "rapidly intensify" because of climate change.



New Year's Eve 2019 at Lake Conjola in Shoalhaven, NSW. Picture: Supplied Source:News Corp Australia

WHY BUSHFIRES ARE GETTING WORSE

Professor Abram said there was no “single factor” that caused worse fires in a changing climate.

The increase of carbon dioxide and other gases in the atmosphere causes “multiple climatic influences”, including hotter temperatures, less rain, drier soil, heavier winds, and extreme and sudden changes in the weather.

So far, the climate has warmed one degree since before industrialisation and the mass uptake of burning coal.

But in southeast Australia in 2019 it was two degrees warmer than the historical mean temperature, Professor Abram said.

Temperatures in Australia could be as much as seven degrees on average above pre-industrial levels before the end of this century if emissions were not reduced, she said.

Department of Environment, Land, Water and Planning crew get into their vehicle in East Gippsland last January. Picture: Darrian Traynor/Getty Images Source:Getty Images

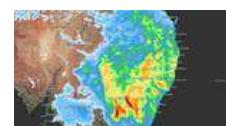
“Numerous extreme heat records were broken in Australia in 2019, including the warmest national average daily temperature ever recorded of 41.9 degrees on December 18,” she said.

“The annual mean rainfall for 2019 was the lowest on record when averaged across southeast Australia.

“December 2019 also had the driest fuel load on record in southeast Australia.”

She said the conditions that caused the Black Summer fires were a combination of human-caused climate change and traditional variability in heat and dryness

TRENDING IN TECHNOLOGY



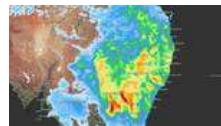
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A koala is treated by Zoos Victoria staff in Mallacoota, one of the worst-hit towns in the Black Summer fires. Picture: Zoos Victoria Source:Supplied

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Gross beach pic that'll creep out swimmers



Large supercell threatens east coast



State's new ban in 'war on waste'



Power plant's closure a 'kick in the guts'

A horror bushfire season did not occur in the 2020/21 summer because of the natural La Nina weather conditions taking place.

La Nina refers to an unusually wet and cold spring and summer, caused by a build-up of cold water in the tropical Pacific accompanied by strong winds.

“We don’t expect every summer to be like 2019/20 – and this La Nina year is a good example of that,” Professor Abram said.

“But we can’t look at climate change as something in our future.

“Our new work highlights the strong evidence that southeast Australia’s climate has shifted and that this type of fire weather is becoming more frequent, prolonged and severe.”

Country Fire Association firefighters join the Australian Defence Force on HMAS Choules as they prepare to evacuate residents at Mallacoota trapped in last summer’s megafires. Source:Supplied

COUNTING LOSSES FROM HORROR FIRE SEASON

Nearly a quarter of temperate forests in NSW, Victoria and the ACT burned last fire season, the study noted.

There were 33 deaths and more than 3000 homes were destroyed in regional areas.

Indirect deaths from smoke haze numbered an estimated 417 Australians, with 3151 hospitalisations.

There were also an unprecedented number of “violent pyroconvective storms”, Professor Abram said — thunderstorms generated by the extreme conditions of megafires.

The study notes that in NSW, 37 per cent of the state’s rainforest burned — an environment that is not adapted to fire and where major blazes are not usually able to gain a footing.

“In economic terms, the Black Summer fires are expected to be Australia’s costliest natural disaster to date,” she said.

An Australian Army Chinook supports Victorian firefighters with evacuations of people and animals from the Omeo and Mt Hotham areas of Victoria last summer. Source:Supplied

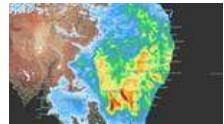
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Those predictions "have indeed eventuated".

The ANU study team included researchers from the ARC Centre of Excellence for Climate Extremes and bushfire experts from the NSW MORE IN ENVIRONMENT



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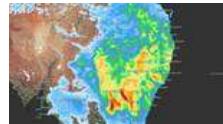
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Councils across NSW and Queensland join forces to demand climate action from Morrison Government

An unlikely group of leaders have broken away from the historic state rivalry to pressure the Morrison government for climate action.

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James Hall

[NCA NewsWire](#)  MARCH 4, 2021 5:21PM

 [Video](#)  [Image](#)

north western Pacific, Near East Asia, typhoons.

News.com.au reporter Benedict Brook unpacks what cyclones are, how they form and what to expect from cyclone season.

Councils across NSW and Queensland are fed-up by the lack of climate action from the Morrison and state governments and have banded together to demand urgent change.

Seventeen mayors and councillors from Shellharbour, south of Wollongong, to Port Douglas, in the Sunshine State's far north, have joined forces to send a message to Canberra, declaring "extreme weather is hurting Australia and our communities are paying the price".

The local government areas stretch along the nation's east coast and have been particularly exposed to devastating bushfires and destructive storm events in recent years.

“We are exhausted by the immediate costs and challenges, and we are worried about what’s to come,” the group’s statement declares.

“Extreme weather disasters used to occur every few years. Now, we are facing them every few months.”

RELATED: Qld cops \$18bn bill due to extreme weather



Noosa is vulnerable to climate change. *Source: News Regional Media*

The plea for help follows a recent report from the Climate Council in which the leading independent body declared the [cost of extreme weather](#) on the Australian economy over the past decade totalled \$35 billion, with Queensland coping the majority share at \$18 billion.

“We can’t do this alone,” the group of concerned councils said.

“We need more support from the federal government to further reduce our reliance on fossil fuels and invest in clean industries that create regional jobs, unlock business investment and spur technological innovation.”

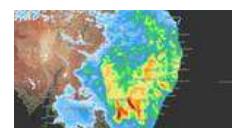
— ADVERTISEMENT —



Noosa Shire Councillor Brian Stockwell called on both the Morrison and Palaszczuk governments to listen to the urgent fears and present danger for local communities.

The tourist hot spot is particularly vulnerable to rising sea levels and storm damage while the warming climate has also increased the fire risk with the popular Sunshine Coast resort area the first of hundreds engulfed in flames during the previous

TRENDING IN TECHNOLOGY



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Qld, NSW and Victoria
warned as severe storms
predicted for ...

summer.

“The one we’re experiencing already is our early summers and springs are much hotter and much drier,” he told the NCA NewsWire.



Brian Stockwell is keen to see governments take action against climate change. *Source: News Regional Media*

“We were the first to have a catastrophic fire event in the 2019/20 season, but it also carries across to us having an ageing population and it’s predicted deaths from extreme heat and climate change will exceed what we experienced last year from COVID by 2100.

“These are significant issues and local governments can address them through practical measures right now.”

Mr Stockwell said the federal government had failed to offer a meaningful response to the present threat with a “business as usual approach to dealing with the fossil fuel industry and ignoring the need to convert our economy to a green economy”.

“We saw the debacle of gas being a preferred option identified by the federal government whereas it’s really clear that new solar power on large farms are far more cost effective at the moment compared to new coal fired electricity.”

Communities across Australia have clearly had enough of the growing cost of extreme weather disasters, Climate Council researcher Dr Simon Bradshaw said.

“All types of extreme weather events — storms, coastal erosion, flooding, bushfires, heatwaves and drought — are influenced by climate change,” he said.

“Australian communities are already paying the price, with the past twelve months seeing a devastating run of extreme weather disasters.”

“Extreme weather has cost our national economy at least \$35 billion over the past decade. And it’s going to get worse — by 2038, the price tag of climate impacts could climb to \$100 billion a year.”



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IAG warns flooding, fire risks on the rise

RICHARD GLUYAS

The nation will be buffeted by rising sea levels and a rise in the intensity and frequency of bushfire and cyclone risks as a result of higher temperatures, according to a report by Australia's largest general insurer IAG.

The report — a collaboration between IAG and the US Centre for Atmospheric Research — includes the latest data on the state of the climate and predictions on extreme weather events based on a range of warming scenarios of up to 3 degrees Celsius from pre-industrial times.

IAG chief executive Peter Harmer said there was an urgent need for Australia to prepare for climate change and adapt to it.

"Each year we are confronted globally with extreme weather events that become natural disasters," Mr Harmer said.

"This report shows that our climate is changing more rapidly than some have predicted, so it is critical there is a co-ordinated national approach from governments, industries and businesses to build more resilient communities and reduce the impact of disasters."

One of the key risks identified in the report is tropical cyclones travelling further south with higher intensity.

It predicts that southeast Queensland and northeast NSW will start to experience greater deviation from strong winds and torrential rain due to cyclones.

IAG executive manager natural perils Mark Leplastrier said these regions were densely populated, and greater investment was required to protect them and reduce the financial and physical burden as the climate warmed.

"With the annual economic cost of natural disaster predicted to hit \$30 billion by 2050, we need to invest more as a nation to better protect communities," Mr Leplastrier said.

"This includes adequate land planning and building codes to ensure infrastructure is able to withstand extreme weather, especially for cyclone- and flood-prone regions."

In its assessment of the state of

It's all in the timing for dividend payouts

Continued from Page 25

unbalanced the portfolio and forced the \$6bn fund manager to set up a side fund to house some of the overflow and restore some balance.

In hindsight they could have waited for the market to do the job for them.

Down to earth

Since the glory days of early 2018 it's been largely a one-way ride down for Stars, Zillow and Grubhub, with losses approaching 30 per cent.

In the case of Grubhub, things got decidedly worse this week when 2019 earnings guidance was lowered and the 2020 forecast took an even steeper fall.

That sparked a rout in the shares. They were down another 43 per cent in one session, capping a dreadful run from a peak of \$US146.7 a piece just over a year ago to \$34.06 yesterday.

Such Vicars — well known for his role at *Gretel Packer's* side in the battle with *James Packer* over *Kerry's* estate — will no doubt need all of his powers of persuasion and coalition to explain those ones.

Let's hope they took some profits somewhere along the line.

Stars and Zillow have fared a

little better. Vicars helpfully outlined his role in putting together Stars and Ireland-based Flutter Entertainment in a newsletter last month. Caledonia has big holdings in both companies and has seen the value of Stars shares almost double from a multi-year low of \$US12.98 in August.

Bonus bonanza

Nicholas Moore, Andrew Downe, Tim Bishop, Ben "Brains" Brazil and Garry Farrell have all left the Macquarie Group offices. And not a moment too soon to avoid the construction noise of the Metastation Macquarie's building at the front and back of its swank Martin Place offices in Sydney.

But we're not sure shareholders would be pleased to see the former key management personnel are still exerting an influence on the investment bank's results.

Macquarie's wages bill ticked up to \$2.6bn for the September half-year, from \$2.3bn a year earlier. The compensation ratio is up from 39.4 per cent to 41.2 per cent.

Moore, the former CEO, Downe, Brazil and Garry Farrell, who shared custody of the corporate and asset finance

Caledonia's Will Vicars workshops dividend use ...

Parachute, body armor, or save it for medical bills? ... All three, if you can...



unit, comfortably collected \$10m-plus on the way out in the 2018-19 accounts.

But the cost of bonuses that are normally paid over an industry-leading seven-year stretch now has to be amortised in one year, adding a heavy one-off load to the compensation bill.

There were also poorer exchange rates on converting a growing overseas wages bill

back to local currency. But that's not a problem that is going away.

Village life

Change is coming to Village Roads, with chairman and management, but how much and how soon are still unknown.

At least that's the impression left with the governance diehards that showed up for the

annual meeting in Melbourne's Jam Factory on Friday morning.

If all the changes come through it will be the first time 31 years as a listed company that one of John and Robert Kirby are executive chairman and CEO. Burke is not chief executive. But looks can be deceiving.

Robert is stepping down as chairman once the company finds a new outsider for the role.

But his son Clark Morgan will be stepping up as chief executive. Robert also had to correct himself after saying that Burke would be an executive director once he hands over to Morgan, when he will be a non-executive director.

Usual practice is that a former CEO would step off the board to give the new guy room. But Village is a far from an ordinary company, with the

aforementioned trio speaking for 42 per cent of the shares, including their individual stakes and a 34 per cent joint holding.

Robert left some of the 60 odd shares he still owned when he said he would continue as an executive director but that he would report to the board rather than his own son, Morgan, the new CEO.

Actually the whole meeting was far from ordinary. As he did last year former Rothschild banker David Kingston took to the floor, pursuing some aggressive questioning in his capacity as proxy holder for John Kirby, who was sitting right there at the board table. Kingston even threatened to report the company to the corporate cop when the chair tried to limit questions.

He was joined by former County NatWest investment banker Caledon McComas — who once did legal work for Village Roadshead — and David Prescott from fund manager Lanyon Asset Management in an at times fairly willing exchange between shareholders and the board. Annual meeting gaffly Stephen Mayne had a fair bit to say and helpfully suggested new director and former News Corp Australia and Foxtel chief executive Peter Tongue become the independent chair.

Village is going through a process for that one, but investors may wonder what sort of a candidate would be attracted to the role after a meeting like that.

Perhaps that's why they don't do webcasts, recordings and transcripts?

Macquarie sticks to return hurdles



Macquarie Group CEO Shemara Wikramanayake

Continued from Page 25

through its financial year and beating it. It had forecast a 10 per cent lift in half-year profits.

"It's only the really good companies that can do that," said Investors Mutual senior portfolio manager Hugh Giddy. "Investors like to under-promise and over-deliver strategy."

But Mr Giddy also cautioned that despite a broader mix of Macquarie's assets, a decade ago it was clear there would emerge if financial markets turned down sharply.

"They are by no means insulated from financial markets," he said.

CLSA analyst Ed Henning said Macquarie had levers to earn more, including selling portfolio assets.

"The financial year 2020 guidance is conservative," he said. "A poten-

tial sale of Macquarie's interest in Nixus would support financial year 2020 earnings with the potential for an earnings upgrade."

Macquarie and its consortium partners last month agreed to sell a majority stake in Hobart Airport to a group comprising QIC and Royal Schiphol.

Ms Wikramanayake said asset sales would continue but the investment pipeline was strong, including Australia's, where Macquarie is "looking at" investing in Western Australia's land titles office.

Macquarie's profit result was also helped by a lower Australian dollar as it earned 69 per cent of income from outside its home market. That led to a tax rate of 20.5 per cent.

Macquarie's net operating income climbed to \$6.3bn in the first half, but operating expenses were also higher.

Macquarie's largest division, asset management, had an improved profit contribution rise by 2 per cent, as mortgage volumes and deposits grew.

A dividend of \$2.50 per share was declared, up from \$2.15 a year earlier. Macquarie's capital surplus printed at \$6.7bn for September 30, after an almost \$1.7bn raising earlier this year.

Macquarie is confident it can accommodate additional capital and regulatory changes.

The result was also driven by the results of its aircraft leasing unit, which it spun into a venture with pension group PGGM Infrastructure. PGGM took a 25 per cent interest but Macquarie expects to further sell down its majority holding to other investors over time.

This week, Macquarie pulled the plug on its cash equities business outside the Asia-Pacific after a strategic review.

Macquarie said those charges were small in the context of its

total banking unit saw its profit contribution rise by 2 per cent, as mortgage volumes and deposits grew.

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Wikramanayake in renewable energy push

JOYCE MOULLAKIS

Macquarie Group is stepping up in the development and construction of renewable energy projects to seek out better returns despite higher levels of risk.

Macquarie chief executive Shemara Wikramanayake said while the group's stable of unlisted investment funds ploughed capital into operational energy assets, its principal team was ramping up a focus on earlier-stage renewable projects where potential returns were bigger.

She said that in more established energy assets competition among buyers had reduced returns to single digits, spurring Macquarie to target the "higher end" of the market.

"Complexity is greater," Ms Wikramanayake said of development and construction renewable energy projects. "We will be doing a lot more of the development."

Macquarie is pushing further into renewable energy including in Japan, Taiwan, Korea, The Philippines and parts of Europe.

Macquarie's first-half accounts showed its advisory and principal investments division had more than 250 renewable projects under development or construction as at September 30.

Total investment in green energy amounted to \$1.3bn as at September 30. The accounts warn, though, of a higher share of losses from smaller-scale and joint ventures in renewable development and construction projects, including a "small number" of under-performing assets.

Credit impairments in the Macquarie Capital division amounted to \$55m in the first half, up from \$4m in the same period a year earlier.

Macquarie said those charges were small in the context of its

business and largely reflected an Asian exposure.

When asked about Scott Morrison's stance on maintaining coal-fired power and the Prime minister's view on businesses investing in renewable energy, Ms Wikramanayake said Macquarie supported all forms of power generation.

"We in energy continue to invest across the whole energy spectrum — there has to be a transition," she said, noting there was not yet enough capacity in the renewables sector. "Conventional energy has a role to play."

Ms Wikramanayake cited data that showed US\$4 trillion of investment in renewables would occur globally by 2030. Macquarie increased staff in renewable energy investments by 80 in the first half to 350 employees.

"We have to adapt to the changing terms of the market," she said.

In August, Green Investment Group agreed to acquire a stake in Iberdrola's ScottishPower Renewables East Anglia One offshore wind farm.

Macquarie purchased the Green Investment Bank in 2017 from the UK government in a deal that included committing to lead £3bn (\$5.6bn) of investment in green energy over three years.

Goudswaard exits CUA predicting more credit union mergers

DAMON KITNEY

Rob Goudswaard, the retiring chief executive of Australia's largest credit union, CUA, says there will be more mergers in the sector as the nation's smaller credit unions battle low interest rates and an ageing population.

CLSA analyst Greenberg said CUA had levers to earn more, including selling portfolio assets.

"The financial year 2020 guidance is conservative," he said. "A poten-

being charged rates well above the cash rate, which is at a record low of 0.75 per cent.

"When you look at one aspect such as the price of a home loan and then you make a determination whether the consequence of a cash rate is reflected in that price line, it doesn't tell the full story," Mr Goudswaard told The Weekend Australian.

"The structure of retail banks has been like this forever. It is a more involved structure than just making simplistic determinations on cash rate changes."

While the number of credit unions in Australia has almost halved over the past decade, the sector has still managed to grow at double the rate of the big four banks.

On Friday the Bananacoast

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On Friday the Bananacoast

system and lending platform because it was able to engage in mergers with rivals.

"Next year we will be ready.

The economic conditions has made that even more so," he said.

"I think it is absolutely the opportunity for the alternate company structure of a mutual to get bigger."

Mr Goudswaard is being replaced by Paul Lewis, who has been at CUA for nearly two years and is currently the group's chief sales officer.

"With the move into anywhere online, a digital offering, we are much better placed than we were five years ago. That is where we need to be," he said.

He said the group needed to complete its new loan origination

the \$10bn mark and loans 9.25 per cent, or 2.5 times system to \$1.4bn.

CUA's Net Promoter Score

reached record highs during Mr Goudswaard's tenure.

He has previously described former legendary ANZ chairman Charles Goode as one of his most significant mentors and has consulted him over recent months about his future.

"He broadened my thinking beyond listed companies and mutuals. There is private equity and family offices. He was able to get me to think a bit more broadly," Mr Goudswaard said.

"I don't want to give the impression I am sitting off as a grey nomad. I am looking for some board roles and maybe some CEO consulting opportunities."



MARK CRANITCH

Rob Goudswaard

Community Credit Union in Queensland completed its merger with Perth-based P&N Bank to become one of the nation's largest member-owned financial institu-

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THE WEEKEND AUSTRALIAN
JANUARY 4-5, 2020 PII

The scale of the bushfires brings new challenges

PAUL MALEY
JAMES MADDEN

If Australians needed further convincing the fires ravaging the east coast this year are different than those that had gone before, the sight of exhausted holidaymakers being evacuated from the pier at Mallacoota into the bowels of HMAS Choules should do it.

Days earlier those same people huddled under blood-red skies as firefighters fought house to house and throughout the night to save the Victorian town from a monster fire front that tore a deadly path through East Gippsland.

On the NSW south coast, similar battles were fought — some won, many lost.

The historic town of Cobargo is all but gone. About 100km to the north, the community of Lake Conjola surrendered 89 homes while at nearby Sussex Inlet authorities pulled the charred remains of a fire victim from the burnt wreck of a car earlier this week.

Mata Bay, 300km south of Sydney, looked like it had been bombed, with smoke billowing in from the fire-stricken hinterland and thousands of residents huddled on the beach-like refuge.

In dozens of coastal towns, fresh food and water have been in short supply. Power outages have crippled communications networks.

Locals and holidaymakers lucky enough to get out were forced to endure two-hour queues at petrol stations.

At the end of a hellish week — and with the threat of worse to come — 10 Australians are dead, although it's feared that number could rise, with 28 people still unaccounted for in Victoria alone.

Hundreds of homes lie in ashed ruins; by the end of this summer, tens of thousands of hectares of bushland will have burned, with fires continuing to burn in NSW, Victoria, Tasmania, South Australia and Western Australia.

On Friday, HMAS Choules began the mass evacuation of the 1000 or so people pinned to the coast by the unrelenting fires stoked by another day of soaring temperatures, high winds and low humidity.

Tens of thousands of people are expected to pour out of East Gippsland over coming days — be it by car or boat or whatever other means available — with authorities warning that the worst could still be to come.

The military-led evacuations — hitherto unthinkable — could be relied upon by isolated coastal communities for the next few days, and may now be a new blueprint for how best to mitigate the loss of



IN THE LINE OF FIRE

in such areas. Scott Morrison has flagged an inquiry into land management and fire mitigation, but for now it will have to wait. There is so much of the country left to burn.

The extreme drought that has sucked the moisture from the landscape has left an ominous mountain of fuel across the nation's floor, with fresh fire fronts a matter of when not if.

It is going to be a long summer.

But when it is done, and the smoke has literally and figuratively cleared, Australia must reckon with what the experts assure us is a new reality: longer fire seasons and hotter, drier climates. To meet this new challenge Australia will need to rethink how it manages the landscape, how and where it configures its cities and how it configures a volunteer workforce that in the future will be required to work

Military-led evacuations — hitherto unthinkable — may now be a blueprint for how best to mitigate loss of life

harder, longer and under more arduous conditions.

Fire management is a huge range of facets, from education campaigns, suppression, preventive measures, such as prescribed burning, development control, development standard and evaluation processes," University of Wollongong's director of bushfire risk management, Ross Bradstock, tells *Inquirer*. "All these things contribute to how it configures its cities and how it configures a volunteer workforce that in the future will be required to work

harder, longer and under more arduous conditions.

He cited "a need to address issues around hazard reduction in national parks, dealing with land-clearing laws, zoning laws and planning laws around people's properties and where they can be built in countries like Australia, up and down our coast".

"There have been many restrictions put around the measures that we can do, which would have to be reviewed on the basis of the nature of the broader climatic effects we are seeing in this country," Morrison said.

Hazard reduction has been the

subject of fierce debate across Australia for years, but the contentious issue mostly fails to state governments and local councils, so to a certain extent the hands of the federal government are presently tied.

Former NSW fire chief Greg Mullins says that as fire seasons become longer the window in which fuel loads can be safely dealt with through hazard reduction shrinks. That will require more reliance on paid professionals, who can burn seven days a week, rather than volunteers.

"The big thing is to have a hard look at how the federal government provides support for states and territories," Mullins says. "The need to look at national approaches to fire reduction, building standards and planning standards for communities."

Then there is climate change.

The debate around bushfires and climate change is a strange juncture, one where the cause of this season's fires has been the combination of extreme drought and "unrelenting" fire weather — an unusually long succession of hot, dry days. Lighting strikes and arsonists have ignited huge fuel loads creating intense fires, which have been spread far and wide by gusting winds.

"We're in territory I've never seen before," Bradstock says. "We're potentially going to have to do five times the amount of prescribed burning just to keep the fire hazard down as it was early in the 21st century. The scenario we're in is the one of a season that was projected to hit in the 2050s. Many people are worried that the climate change projections are playing out faster than we thought."

to think about adaptation — adaptation with a capital A."

Like virtually all experts, Bradstock says the acute cause of this season's fires has been the combination of extreme drought and "unrelenting" fire weather — an unusually long succession of hot, dry days. Lighting strikes and arsonists have ignited huge fuel loads creating intense fires, which have been spread far and wide by gusting winds.

"We're in territory I've never seen before," Bradstock says. "We're potentially going to have to do five times the amount of prescribed burning just to keep the fire hazard down as it was early in the 21st century. The scenario we're in is the one of a season that was projected to hit in the 2050s. Many people are worried that the climate change projections are playing out faster than we thought."

University of Tasmania fire expert David Bowman says climate change has worsened Australia's fire hazard, but warns the conditions for catastrophic fires have always been there.

"All of these problems already existed. All climate change is doing is accelerating them and amplifying them," he says.

Bowman says one of the solutions will be to reimagine the way we build and manage the urban-bush interface, the point of contact between our cities and the landscape.

Instead of managing our risk in the bush, we must think back-wards.

"The old idea is that you would work from the bush into the settlement," he says.

"But the scale of the thing means that's not credible."

Continued on Page 13

WE MUST STAND STRONG AGAINST BEIJING'S POLITICAL WARFARE

Australia can't afford to be naive about China's influence

ALAN DUPONT
CONTRIBUTING NATIONAL SECURITY EDITOR



China's extraordinary growth as an economic and military power has been a defining development for Australia. But managing our future relationship with an increasingly assertive and authoritarian China will require a reassessment of our assumptions about the nature of Chinese political system and a willingness to learn from past mistakes.

Since former senator Sam Dastyari opened our eyes to Beijing's extensive influence operations, we've come a long way towards understanding the nature and extent of the China challenge and developing effective responses.

es. Yet we still don't have a clear-eyed view of China, judging by the persistent refusal of apologists and boosters to acknowledge the dark side of the Chinese Communist Party's exercise of power.

Naïve, vested interests and wishful thinking are partly to blame. But so is Beijing's highly effective use of political warfare to cloak and advance its strategic interests. Andrew Hastie, the chairman of the joint parliamentary committee on intelligence and security, says Australia needs to push back hard "to preserve peace and avoid war". Former ambassador to Israel David Sharman argues that we should borrow from Israel's experience and boost our offensive political warfare capabilities by taking the fight to authoritarian regimes in a way that is consistent with our values.

They are right. It is now becoming clear that influence operations are only part of a suite of instruments in the political warfare toolkit of authoritarian states. They include propaganda, aggressive diplomacy, disinformation, media manipulation, subversion, financial inducements, the theft of intellectual property, lawfare,

coercion and the use of economic and military pressure for strategic purposes. Understanding how and why the CCP conducts political warfare is the key to crafting a fit-for-purpose China policy.

Chief of the Defence Force Air Commodore Mark Goss is a early identifier of the importance of political warfare in the armoury of authoritarian states and the need to defend against it.

Another is strategist Ross Babbage, the author of a major study on the subject for a US think tank.

Babbage identifies the four primary goals of the CCP's conduct of political warfare as maintaining the party's uncontested rule domestically; establishing China's preponderance in the Indo-Pacific; building influence and prestige; and exporting its authoritarian model.

The problem is that these goals can only be achieved if the CCP's core-sustains without dissent, eroding the sovereignty of other countries, undermining the rule of law and weakening democracies. But why is it that so many democracies have difficulty in discerning the CCP's strategy and intent?

One reason is that we have dif-

ferent, much narrower concepts of war and peace and little experience of political warfare since the end of the Cold War. Deception and propaganda are central to its practice.

The CCP deliberately hides its wedge and influence operations by concealing a narrative of victimhood (a hundred years of national humiliation at the hands of foreign powers) and soaring achievement (elitism) and astutely calculated to create the impression of inevitable progress towards global pre-eminence.

Western elites mistakenly assumed that China would transi-

tion from a revisionist to a status quo power. Although they never thought China would become a Jeffersonian democracy, their folly was to assume that China would become more like us and a responsible stakeholder in a liberal international order. It's abundantly clear that Xi Jinping has no intention of doing either.

In her latest book, *The Third Revolution: Xi Jinping and the New Chinese State*, respected political-writer Elizabeth Economy concludes that Xi's China is an increasingly ideological state

that feels imperilled by liberal values. Xi considers constitutional democracy, human rights, academic freedom, judicial independence and freedom of the press as fundamental threats. That's why he devotes so much time and effort to defending and upholding his authoritarian model and undermining Western democracies.

Seventy-four years ago, a Moscow-based American diplomat named George Kennan wrote a penetrating analysis of the Soviet Union that Pulitzer Prize writer Louis Menand later described as the primal document of Western Cold War foreign policy.

Kennan's 8000-word telegram, unimaginable in today's world of superficial tweets and sound bites, captured Stalin's aggressive mindset and astutely dissected his then little-known strategy for making the Soviet Union the dominant global power. Kennan noted that Stalin was obsessed with consolidating every instrument of state power to advance the interests of the Soviet Union, foreshadowing today's use of political warfare by authoritarian states. He also co-opted friends, including useful but expendable "democratic progressives", using the

Communist International and other front organisations.

Conversely, Stalin sought to undermine the political and social cohesion of Western democracies to reduce their strength and influence "selectively", as well as "industrially". He sought to recruit in deniable covert operations and an "air force, far-flung apparatus" for influencing other countries while obscuring the internal workings of the Soviet Union through secrecy and repression to keep opponents in the dark and conceal weaknesses.

Although Xi is not Stalin, the parallels in their approach to power and use of influence operations are strikingly similar, unsurprisingly, since Russia and China have traditionally emphasised the importance of political warfare in their strategic cultures. Grand strategy for making the Soviet Union the dominant global power was an integral part of communist ideology and the CCP is deeply communist and ideological.

It's erroneous to assert that the CCP is a communist party in name only. Xi categorically rejects the notion that China is not really a communist state. He is an enthusiastic adherent of Marx and a self-identifying communist who



Xi Jinping's China feels imperilled by liberal values

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THE WEEKEND AUSTRALIAN

BUSINESS REVIEW



MANSION

Brisbane's waterfront bonanza {P25-27}
PLUS Lisa Allen's Trophy Homes



I, ROBOT
Highlights from the CES tech show {P23}

CLIMATE HITS RETURNS

Inferno forces investor rethink

EXCLUSIVE

CLIONA O'DOWD

The bushfires ripping their way through Australia's east coast will force investors to rethink their exposures to industries and businesses vulnerable to climate change risk, with some adjusting their return expectations and others reconsidering the merits of remaining invested in such sectors, according to fund managers.

It comes as Westpac total losses to date from the bushfires at around \$5bn — higher than the 2009 bushfires in Victoria but less than the Queensland floods in 2010-11 — while ratings agency Moody's Investors Service warned of the increasing risk facing residential mortgage-backed securities as a result of more frequent natural disasters.

"It's a wake-up call for investors that climate change is a reality, and it's not something that's causing it. It is a reality and you therefore have to allow for that in your investment strategy," AMP head of investment strategy Shane Oliver told The Weekend Australian.

"I think investors will look at (the risk premium) a little more carefully from now on. If you argue the bushfire season is getting longer, which it does seem to be... then this is probably going to become a bigger threat through time. It's a reminder that investors need to be more conscious of it."

Super funds are among those modifying their return forecasts from investments at risk due to climate change.

"We've looked at all of the asset classes, and we've adjusted our return expectation from all of them that we think are at risk," Hostplus chief investment officer Sam Sicilia, who oversees \$42bn of funds, told The Weekend Australian.

"What that means, in practice,

INSIDE

The destruction caused by bushfires raging across the nation should spur CBA and Westpac to consider exiting general insurance

JOYCE MOULLAKIS
P31

is instead of expecting a 9 per cent return, it will be 8 per cent, or 7.6 per cent, or 5.2 per cent... and if those industries no longer generate the return that you need to compensate you for the risk, then you won't be investing in them."

Agriculture, tourism and retail are forecast to be hardest hit by the bushfire crisis, which has ravaged more than 11 million hectares and destroyed livestock and homes across the affected regions.

Dairy processor Bega Cheese earned this week confirmed the fires had affected a number of its milk suppliers in the region, raising fears of a milk shortage.

Insurers have received more than 10,000 claims, with an estimated loss of \$939m, putting their profits at risk and pressing pressure on future premium rates, analysts have warned.

Ratings agency S&P earlier this week flagged that claims from the bushfires would exceed insurers' usual natural peril allowances.

"The events could also pressure premium rates in future as insurers are forced to pay out an increasingly higher number of claims," S&P said in an analysis of the disaster.

Longitudinal Australian Equity Partners chief investment officer Mark East said the fund may look more closely at climate risks

Continued on Page 24

INSURANCE BILL SURGES P22
GLENA KORPORAL P30

Jewel in the Crown: Packer's new passion

EXCLUSIVE

DAMON KITNEY

The luxurious villas on level 37 of Crown Towers Melbourne boast stunning views over the city skyline.

On Wednesday evening this week, one played host for the first time in almost 12 months to Crown's biggest shareholder as he made a surprise flying visit to Australia.

Unlike last year's visit in February which was a secret affair, this week's trip was deeply symbolic for James Packer.

For the first time, he toured the \$2.4bn Crown Sydney project with his mother Ros, partner Kylie Lim and newspaper and television reporters in tow, and was blown away by what he saw rapidly taking shape.

He visited levels 48 and 49 of the project that will house the apartments for which he paid \$60m in 2017, and revealed the hotel and restaurants at the site would open in December, ahead of the expected formal opening of the entire facility in February next year.

But more importantly, the 52-year-old lunched with his mother at the family's Bellevue Estate compound in Sydney's east, his childhood home. Its walls adorned with images of the life he once had and of his legendary father Kerry, who passed away on Boxing Day, 2006.

The only missing piece from the lunch was his sister Gretel, who is in America and with whom he remains on good terms after they reconciled in 2018 following a bloody battle over dividing the family fortune.

Two days earlier, the Packer Family Foundation and Crown made headlines when they donated \$4m to the bushfires crisis, adding to the \$1m they had promised in November.

"After all that has happened, I genuinely have felt happy to come back to Australia," Packer told me in his Crown Melbourne villa on Thursday, cigarette in hand and with the big screen television to his left tuned to the Fox

News Channel from America. "But I still feel as though my life is in neutral until Sydney is finished. The thing I am really



James Packer says he's 'genuinely happy' to be back in Australia

looking forward to is Sydney opening."

As was clear for the world to see this week — and it shocked

some who saw him in the flesh for the first time in several years — Packer remains heavily medicated to deal with his psychological

AARON FRANCIS

condition. He trudged slowly, hands firmly by his side, around the Barangaroo site in Sydney and, on Thursday, the Queensbridge development site adjacent to Crown Melbourne.

When he speaks to his eye doesn't flinch; he looks you firmly in the eye the way he always has.

He still hasn't lost his grasp of numbers, still reeling off share prices and balance sheets.

But now his words are slow, occasionally slurred. His sentences are mostly short.

He still feels "dulled", as he put it in my biography of his life, The Price of Fortune, released in 2018.

But he is in a better place. The television cameras and newspaper photographers this week captured him smiling.

"I'm OK," he replies when I ask how he is feeling.

"I feel much better from where I was."

His mother echoed the point on Wednesday as she toured Barangaroo.

She said her son was now "mentally in a much better space, which is wonderful".

"It shattered him with the employees in jail in 2016."

"It shattered him with the employees in jail in 2016," she said in reference to the detention in China of Crown staff at the end of 2016 for alleged gambling crimes which drove her son over the edge.

James Packer's most immediate focus is the inquiries into Crown by the NSW and Victorian gaming regulators and the Australian Criminal Intelligence Commission following media reports last year detailing sensational allegations of the casino group's links to organised crime.

The NSW regulator, the Independent Liquor and Gaming Authority, will on January 21 consider whether to ban Packer from continuing to run his private company's proposed \$1.76bn sale of almost 20 per cent of its holding in Crown to Hong Kong billionaire Lawrence Ho's Melco Group.

Continued on Page 24

The way the rich donate is changing

JOHN STENSHOLT
LISTS EDITOR

Call it competitive philanthropy. Or a good version of one-upmanship.

The rush of donations from the country's wealthiest people and biggest corporations to various causes related to the bushfires that have ravaged Australia encapsulates the changing nature of the way the rich give away their money.

It is never a bad thing to be seen to be generous. But the days of a billionaire's charitable foundation quietly and steadily giving away millions across a variety of causes could be a thing of the past now.

RICHEST AUSTRALIANS BUSHFIRE DONATIONS

Andrew and Nicola Forrest, Minderoo Foundation	\$70m
Paul Ramsay Foundation	\$30m
James Packer and Crown Foundation	\$5m
Lachlan and Sarah Murdoch	\$2m
John and Pauline Gandel	\$1m
Anthony Pratt and Foundation	\$1m
Alex Waitsitz and Waitsitz Foundation	\$1m
Justin Hemmings	\$500k
Nicole Kidman	\$500k

Instead, the past few weeks has seen many members of The Australian's The List — Richest 250 openly announce bigger and bigger donations for bushfire causes.

They have held press conferences. Put out media releases. Announced pledges on Twitter and Instagram. They have been anything but reclusive.

Shopping centre magnate John Gandel and wife Pauline moved quickly two days after Christmas, publicly pledging \$1m to help the national response to the fire crisis.

Since then, Anthony Pratt and his family's Pratt Foundation pledged \$1m, as did Alex Waitsitz's Waitsitz Foundation.

Late Friday the New York-based boss of Morgan Stanley Michael Corman raised \$1m. Corman donated \$1m, saying the deviation was "deeply upsetting". James Packer announced a \$5m donation, the Ramsay Foundation of the late billionaire Paul Ramsay announced a \$30m package and then Andrew Forrest, the mining billionaire, *Continued on Page 22*

On the road to 7000 as shares power to all-time high

DAVID ROGERS
MARKETS EDITOR

Australian shares have powered to an all-time high amid surging global markets as investors con-

tinued to discount geopolitical risk after the de-escalation of US-Iran tensions this week.

The benchmark S&P/ASX 200 share index surged 196 points, or 2.9 per cent, to a record high of 6929 points this week, breaking the previous record of 6893.7 points it reached five weeks ago. The market watched All Ordinaries Index passed 7000 points, closing up 0.7 per cent at 7041.

CSL was particularly strong, jumping 2.8 per cent to a record high of \$299.30 a share on Friday.

Continued on Page 30

CBA rose 1.2 per cent to \$82.50 a share, its best daily closing price since July 30th.

Coles shot up 2.9 per cent to a five-week high of \$15.66. Woolworths rose 1.6 per cent to \$32.92. Telstra jumped 1.3 per cent to \$38.25 and Brambles rose 1.3 per cent to \$12.10.

Apart from CSL, other stocks hitting record highs on Friday included Wesfarmers, James Hardie, Magellan Financial, JB Hi-Fi, ResMed, Domain and carsales.com.

After surging 18 per cent last year — its best since 2009 — the Australian market is starting the year with a bang. The 2.9 per cent rise in the ASX 200 in the past week was its best in 11 months.

However, while geopolitical risk certainly receded after Iran's retaliation for the US assassination of General Qassem Soleimani, the previous week proved harmless, and subsequent comments from Iranian and US officials showed little appetite for war. *Continued on Page 30*

Points 7000 — S&P/ASX 200 Index closed at a record high



Source: Bloomberg

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HOLDING THE THIN RED LINE

Nothing is typical any more: even the scientists are discombobulated. Yet they're learning much from the burning

JAMIE WALKER

ASSOCIATE EDITOR



You need to know what happened at Wytaliba to understand why this bushfire season is so different and extraordinarily dangerous.

Parts of the country are burning that have never burned before: rainforests are going up and communities attuned to dealing with floods and cyclones are being confronted by walls of flame, hurling them into a new world of hurt and heartache.

Those who prepared painstakingly, as the 100-odd residents of Wytaliba did, discovered nothing could stand in the way of the firestorm that hit on Friday afternoon. In 15 terrifying minutes, a hot, hazy day on the NSW Northern Tablelands turned into a test of survival when the township was engulfed. Two died and at least 45 houses were destroyed.

Most people in Wytaliba had trained to fight fires. Founded as an alternative-lifestyle commune, the cluster of family homes carved out of a tangled eucalyptus forest, crisscrossed by logging paths, had its own brigade. No more.

"The intensity is what you can't handle," says Tony Keating, a resident of 35 years and member of the fire crew. "We've had a fire every second year for as long as I've been here and we've always been able to deal with it. But this time it was impossible... It came up like a bullet out of a gun."

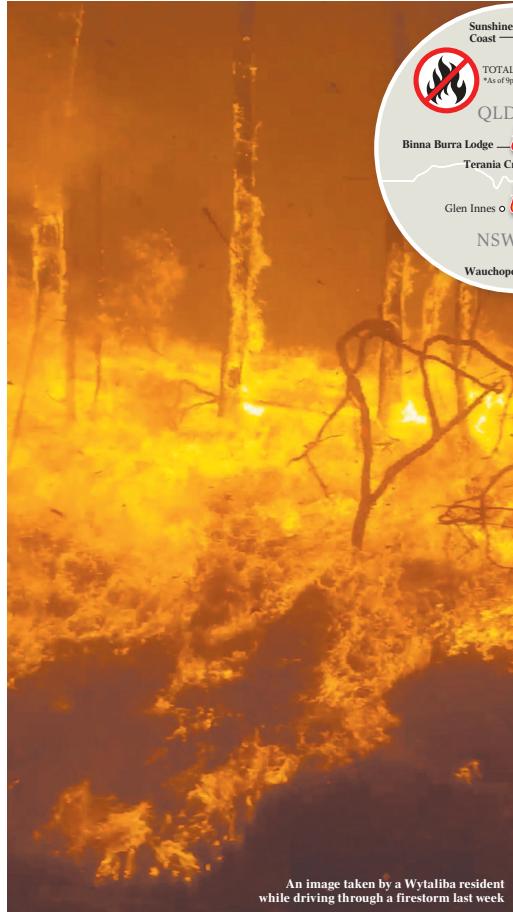
Scorched green land

Step back and consider the big picture. Southeast of Wytaliba, the picturesque rainforest at Terania Creek in Nightcap National Park is aflame near Lismore; behind Cofts Hill, the rainforests of the mainland and Antarctic beech forests at Wauchope are burning; the rolling dairy country of the Clarence Valley has gone from emerald green to a scorched ebony in places, having received less than a tenth of its average annual rainfall; beloved Binna Burra Lodge in the Gold Coast hinterland was razed in September; something no visitor to that usually lush retreat back-on to a World Heritage-listed Gondwana rainforest could have come at; suburbs back from the beach on the Sunshine Coast have been evacuated five times this year and counting, with homes lost to the advancing fire front.

"If you've told me that Binna Burra was going to burn down and that was just the pipe-opener to the fire season, I would have said you were nuts," says David Bowman, the professor of biogeography and fire science at the University of Tasmania. "But now we are seeing all these iconic sites like Wauchope (and) Nightcap Range burning and it's so unbelievable. These are wet, subtropical or warm-temperate rainforests (hit by the fires)... I am trying to remain on an even keel. It's so serious."

As Ross Bradstock, director of the Centre for Environmental Risk Management of Bushfires at the University of Wollongong, explains: "What we are seeing in northern NSW and Queensland is extraordinary dryness, compounded by rainfall deficit, temperature anomalies, continuous fuel loads across the lands, winds and low humidity. Those are the fundamentals of major bushfires. What's different is that the conditions have extended into areas that haven't traditionally burned on an even keel. It's so serious."

More than one million hectares have been blackened in NSW — 2½ times the area affected on Black Saturday 2009 in Victoria — and Queensland has had more homes destroyed in the past 12 months than the accumulated losses from



An image taken by a Wytaliba resident while driving through a firestorm last week

all past bushfire seasons. If scientists are agog, imagine the shock for the local communities and emergency services, which have been stretched to breaking point this week, as the fire conditions in NSW touched catastrophic levels on Tuesday and continue to deteriorate north of the border.

Parched soil

While the debate over who or what's to blame rumbles on — green-minded councils and national park managers for failing to back-burn overgrown forests or federal and state governments for not acting on climate change — the focus is to prevent the fire is to preserve life and property. The underlying fact is that years of drought, higher-than-average temperatures and rainfall have turned vast tracts of country into a powder keg, waiting for the strike of a match or lightning to ignite.

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Though it found that Queensland Fire and Emergency Services had improved its "visibility and oversight" of bushfire risk, including establishing a Office of Bushfire Mitigation and fire area fire management groups, QFES had

missed deadlines to improve readiness for this tasting season. Further, it had not fully implemented the recommendations from the 2014 report, despite committing to do so within 12 months; and more work was needed to ensure communities were not exposed to higher levels

trying to defend their homes. The resurgent Kangawalla fire to the west of Wytaliba, sparked by a series of smoke about 30m on Friday, came on so quickly that others barely had time to grab children and pets before fleeing.

The howling wind felt like it would "rip your head off", one

It's so unbelievable. These are wet, subtropical or warm-temperate rainforests (hit by the fires)... I am trying to remain on an even keel. It's so serious

DAVID BOWMAN
PROFESSOR OF BIogeography AND FIRE SCIENCE
UNIVERSITY OF TASMANIA

of risk "they need to be".

Criticising QFES' collaboration with other key stakeholders, the Queensland Audit Office said: "In particular, it should continue to engage with land managers and local governments to better identify bushfire risks and priorities mitigation activities."

Tongues of 50m flames

No one is questioning the effort of the volunteer and full-time professional firefighters on the ground. The wonder in both Queensland and NSW is that more lives haven't been lost, given the size and intensity of the fires.

Both victims in Wytaliba, grandmother Vivian Chapman, 69, and fellow community elder George Nole, aged in his 80s, died

survivor recounted. At the height of the emergency, people found refuge on a craggy pitch, eyes watering in the heat and dense smoke as 50m tongues of flames licked at the outcrop.

"It shows you... what a fine edge the environment is on," says Keating. "A few degrees lift in temperature, a shift in weather patterns, and bang, we're in trouble."

The third victim, Julie Fletcher, 63, also died at her husband home in Jones River outside Terania Creek.

At the Scenic Rim, southwest of Brisbane, where new-build subdivisions around Boonah and rural homesteads are under ferocious threat, mayor Greg Christensen has never seen anything like it.

"We've had fires run across the ground like it was a pool of kero-

sen," he says. The strain is telling on weary fire crews, who barely had time to catch their breath when the severe fire conditions at the weekend relented, only to ramp up again on Wednesday.

Reinforcements from Tasmania, the Northern Territory and New Zealand have been welcomed with open arms: more hot and blustery days are forecast.

The question is: How long can the thin, red line hold?

Typically, the fire season in Queensland is over by December, but this year's onslaught not only began sooner than ever but also threatens to extend into next year. Premier Anastacia Palaszczuk says relieving rain isn't on the horizon before January at the earliest.

Danger signs

By then, Victoria will be in the frame if the east-coast drought persists, its wet eucalyptus forests drying out to unleash some of the world's most potent fire fuel loads. Tasmania is seeing danger signs in Tasmania, where destroyed rainforest accounts for an estimated 3.2 per cent of losses this year. In 2016, the famed pine forest-like Bowdanna reserves around Lake Mackenzie on the state's Central Plateau, an ominous open.

The author of a book on Australia's most famous estate, Bowman has ventured into what should be some of the state's wettest forests to gauge the fire risk. "It's a worry,"

he says. "You put your hand on a log that should be slimy, and it's dry... it's dry, dry, dry, dead-brown.

He is deeply "discombobulated" by what is happening in northern NSW and Queensland. For all the misery the fires are causing, scientists have much to learn from the novel sites that are burning.

"That is part of the materials we need for the adaptation step... I am very aware it is terrible at a human level but scientifically it is very significant," Bowman tells The Australian.

"If we can start understanding the fire progression, how fires interact with different land uses and land types... we can start wrapping our minds around the fact that this type of country is burning."

Risks understudied

Bradstock, an expert consultant to the royal commission into Victoria's 2009 Black Saturday disaster, says Queensland's bushfire risk has been creeping up on the 100-point Forest Fire Danger Index. Traditionally, a bad fire day in the state's thickly populated southeast scored 30; but last November and during the current emergency it would have nudged the century mark at times.

That might be a far cry from the conditions on February 7, 2009, in Victoria, where the FFDI ranged from an unprecedented 160 to 200, ushering in the new "catastrophic" classification after 173 people died in the flames of

Black Saturday, but it is highly confronting for communities with little or no bushfire preparedness and would certainly challenge even the most hardened firefighters.

"We know from research that people underestimate their own personal bushfire risk," says Richard Thornton, chief executive of the Bushfire and Natural Hazards Co-operative Research Centre. "Our research is consistently showing that many Australians, particularly those in higher-risk areas, are not sufficiently ready for fire and have not put fire plans in place well ahead of time."

"They understand that when the conditions are right, hot and windy days, with dry vegetation, fires will occur. But they just don't think it will happen to them." It's understandable to say Australia is entering uncharted territory this bushfire season. What's evident from the experience in NSW and Queensland to date is that most of just about everything is needed to tackle the lethally dry conditions: more muscle power on the ground, more water-bombing aircraft overhead, more cash from the taxpayer.

The risk is here, the risk is now, and we will have worsening conditions as we head into summer," NSW Rural Fire Services Commissioner Shane Fitzsimmons warns. Who can afford to gainsay him?

ADDITIONAL REPORTING:
CRAIG JOHNSTONE,
CHARLIE PEEL

Penny nearly drops out

Penny Wong wanted to quit federal politics after Labor's shock (to some) election loss and was counselled into staying on for another three years in opposition by close friend Anthony Albanese, according to Strewth's sources. November marks 15 years since Wong was first elected to the upper house. She's the fourth Labor senator serving behind Ron Carr (1993), Eric Abetz (1994) and Marise Payne (1997). Wong became Labor's Senate leader in June 2013 during Kevin Rudd's second stint as prime minister, serving for three months as Senate leader of the government before becoming Senate leader of the opposition. The South



Penny Wong and Anthony Albanese at September's Midwinter Ball in Canberra

Australian spent six years as a minister during the Rudd-Gillard governments and another six on the opposition frontbench under Bill Shorten. People close to Wong say she was shattered when she realised live on the ABC's election night panel that she wouldn't be Australia's next foreign minister. They say senior figures in the party — including her Left factionally (not to mention Midwinter Ball) date — didn't mention Wong's name in step and convinced Wong to stay in politics. There was already an expectation among Labor staffers that Wong would quit if the party lost on May 18. One colleague suspects the senator decided to serve her remaining three years out of loyalty to the new party leader.

Question time

"I had to decide whether I wanted to stay," Wong tells Margaret Simons in the new biography, Penny Wong: Passion and Principle. "I don't want to be melodramatic about it, but in these jobs you have to really commit and I had to ask myself if I still could. The disappointment is not just personal — those dashed hopes and political — and it's a sense of loss about what you want to be part of, about the meaning of your life... When I was younger... I wanted to do something in my life that had some meaning... And I guess the question I had to ask was, 'Do I still have that in me?' Because if you decide you don't then you

should get out. And then there's the question of whether, emotionally, you could do something else — whether you would be content or satisfied in another kind of job." Wong didn't have long to decide. On May 22, four days after the election, she held a press conference at a park near her Adelaide home and announced her support for Albanese. "I also announced today that I will be putting myself forward as Labor's leader in the Senate," she said. "The Australian people may have elected the Coalition, but they don't expect them to get a free pass in the Senate and it's our role to hold them to account and to scrutinise what they are doing and I intend to continue to do that, if elected by my colleagues,

as Labor Senate leader." Wong was the only member of Labor's former leadership team to survive — with Shorten, Tanya Plibersek, Chris Bowen and Senate deputy Don Farrell all stepping down.

Hot topic

"A throwback photograph posted on a politician's Facebook page spawned what hashtag," host Andrew O'Keefe asked a contestant on a recent episode of The Chaser Australia. The options were: a) #HotAlbo, b) #CalmAlbo c) #warmShorten. Unfortunately the comedian went with the last one. "warmShorten. For the record, the correct answer is #HotAlbo. But he did slightly better than two others who chose to pass when asked: 'What's the rhyming nickname is Scott Morrison known?' 'Who?' one muttered, strewth@theaustralian.com.au



Wytaliba resident Tony Keating after the bushfire



LYNDON MCGILLEN



Binna Burra Lodge's Steve Noakes after the destruction in the Gold Coast hinterland rainforest in September

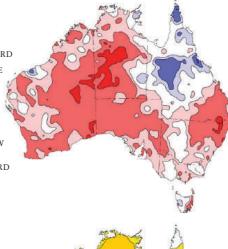
FANNING THE FLAMES

Rainfall

January to July

RAINFALL RANGES

■ HIGHEST ON RECORD
10 ■ VERY MUCH ABOVE AVERAGE
8-9 ■ ABOVE AVERAGE
4-7 ■ AVERAGE
2-3 ■ BELOW AVERAGE
1 ■ VERY MUCH BELOW AVERAGE
■ LOWEST ON RECORD

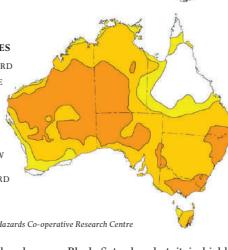


Temperature

January to July

TEMPERATURE RANGES

■ HIGHEST ON RECORD
10 ■ VERY MUCH ABOVE AVERAGE
8-9 ■ ABOVE AVERAGE
4-7 ■ AVERAGE
2-3 ■ BELOW AVERAGE
1 ■ VERY MUCH BELOW AVERAGE
■ LOWEST ON RECORD



Source: Bushfire and Natural Hazards Co-operative Research Centre

Horror bushfire year 'not a one-off'

OLIVIA CAISLEY

The 2019-20 summer bushfire season, during which 33 people were killed and more than 3000 homes lost, was the most damaging in NSW and as bad as the worst in Australia's history, the Royal Commission into Natural Disaster Arrangements has heard.

As the first day of an inquiry into the horror bushfire season kicked off on Monday, the Bureau of Meteorology's head of climate modelling, Karl Braganza, warned the catastrophic season was not a "one-off" and the frequency of such events was increasing.

"Since the Canberra 2003 fires, every jurisdiction in Australia has seen some really significant fire events that have challenged what we do to respond to them and have really challenged what we thought fire weather 'looked like' preceding this period," Dr Braganza said.

"These large fire events, when you look back over the 19th and 20th century, were not as frequent as they were this century."

The Morrison government has promised the probe will get to the bottom of what happened, including the role of climate change, and will investigate the "consequences of longer, hotter, drier seasons and severe weather events."

It will also recommend ways to improve resilience in the face of changing climatic conditions.

Ryan Crompton from Risk Frontiers, a body that researches and models disasters across the Asia Pacific, said the four million hectares of bushland that burnt in NSW over the summer was three times larger than any other season.

"In NSW, 'black summer' has been far the most damaging season with normalised damage more than 2.5 times the second highest amount," he said.

"Black summer is expected to be comparable to the most dam-

aging seasons (if not the most damaging) in Australia since 1925," a Risk Frontiers report said.

The fire that raged through Victoria were also the largest since satellite imagery became available in 2000, with 1.2 million hectares of land destroyed only "just bigger" than the 2002-03 fire season.

CSIRO chief research scientist Helen Cleugh warned the conditions Australia was experiencing were "within the projected range" of predictions the agency had forecast in the early 1990s.

She sounded the alarm that if greenhouse emission continued on their current trajectory the temperatures experienced last year could be considered "cool" by the year 2050.

The commission was told 2019 was both the hottest and driest year on record, with 43 extreme heat days compared with the previous record breaker of 2013 when there were 27.

Dr Braganza said prolonged drought, lack of rainfall and a protracted period of record high temperatures had created a perfect storm for tinderbox-like conditions that burned in large swaths across the continent.

The south coast of NSW and parts of eastern Victoria are now seeing fire weather three months earlier than normal with those conditions moving towards the end of winter rather than spring, the commission heard.

Commission chair and retired air chief marshal Mark Binskin said the commission had visited many of the communities affected by the fires in the lead-up to the hearings.

He acknowledged the disaster's impact had been compounded by the outbreak of the coronavirus pandemic and said commissioners were "acutely aware" of the inevitability of the next bushfire season. As a result the inquiry will work to a short timeline so recommendations, due by August 31, can be implemented next summer.



RICHARD WALKER

Police at the house in Cannon Hill, Brisbane, on Monday

Police discover girl, 4, dead after triple-0 call

DAVID MURRAY
NATIONAL CRIME
CORRESPONDENT

Queensland police have launched a major investigation into the sudden death of a four-year-old girl.

Police and paramedics descended on a home in Cannon Hill, in Brisbane's southeast, after a call to triple-0 about 9.20am on Monday, and found the girl dead on arrival.

A crime scene was declared immediately, with detectives reported to be investigating whether the girl died of neglect and whether she received appropriate medical treatment.

Police said family members were assisting with inquiries and called for anyone with information to come forward.

Officers sealed the street off from the public and were speaking to neighbours.

One resident visited by police on Monday said officers asked whether she knew the family.

"They just said a little girl got hurt," she told The Australian.

"They asked if I knew who they were and I don't know the people."

The home is located on Bent Street, near Cannon Hill Angli-

can College. The road was busy with parents dropping off children on Monday morning as students of all grades returned to school.

"Around 8 o'clock we've got the cars coming and going. It's quite a demand here for about half an hour in the mornings," the resident said. "There's kids screaming, the mothers are there, so you wouldn't have taken any notice anyway."

A woman whose relatives live on a nearby property said she believed a family with at least two children — a girl and a boy — rented the property.

"I don't think anybody knew them that well, except to say they're nicer than the last people who lived there," she said.

"They (her relatives) don't know much, they've just been interviewed and just know the basics. They all saw them playing in the yard. From what I hear, they're nice people."

It was a close neighbourhood with a number of residents who had lived there for decades, she said. Other residents reported seeing children playing on a trampoline in the backyard of the property.

A police spokeswoman said investigations were continuing.

Families come first as court rules on fire millions

Continued from Page 1

brigade. "It's good to know that there will be resources and support for RFS volunteers and their families," he said. "Any form of help is a huge deal. A lot of fires are battling mental health issues now and that money will go a long way to helping those who need it most."

Less than two weeks after Keaton and O'Dwyer were killed, volunteer firefighter Samuel McPaul died when the fire truck he was travelling flipped in a "fire tornado" at Jingellic, about 100km east of Albury. Thirty-three people died in the summer bushfires, including seven volunteer firefighters and three US firefighters.

The sacrifices of the volunteers led The Australian to name them as one of the women of the firefighting service the newspaper's Australians of the Year.

While injured volunteers and the families of firefighters who died would be able to apply to access the funds raised by Barber, none of the money donated to the NSW Rural Fire Services Brigades Donations Fund — Barber's nomi-



Andrew O'Dwyer, left, with daughter Charlotte, and Geoffrey Keaton with son Harvey



The announcement of the Australian of the Year winners on January 25

nated charity — could be shared with other charities or organisations, including the Red Cross, or firefighting brigades outside NSW, the court ruled.

The money can be used to provide physical and mental health support. However, at least 70 NSW RFS volunteers who lost or sustained significant damage to their homes are barred from accessing the money to help them rebuild.

Volunteer firefighter Steve Hillyar was battling a blaze on the NSW south coast on December 30, unaware his house in Malua Bay had been lost.

"It's mind-blowing the amount of money that's out there that should be going to people who have nothing," Mr Hillyar said.

"The people of Australia donated this money and it shouldn't be sucked up by the NSW government."

Mr Hillyar, a RFS veteran of 26

years, said parts of Malua Bay resembled a "refugee camp", with many victims of the Clyde Mountain bushfire left "high and dry".

"A few months ago, I met a group of friends who were still living out of caravans they paid for out of insurance money," he said. "People here are still living without running water. We've been forgotten."

Greg Allan from the RFS said about 450 volunteers had been financially "impacted on some level" following the bushfires, including members who had lost

livestock, machinery and fencing.

Barber expressed disappointment with the court's decision, which effectively ends a four-month impasse over how the RFS fund could spend the donations from her appeal.

"It was decided today that in the Supreme Court that the money we raised will stay with the NSW RFS," she said in an Instagram post.

"I had hoped, because it was such a big and 'unprecedented' amount, that it could have been distributed to other states and charities. Turns out that studying

act at university does not make me a lawmaker."

"So the money will be in the very capable, very grief-stricken hands of the NSW RFS. It will be used for equipment and training to support rural firefighters injured while fighting the fires," Barber said.

"The people of Australia have been

An Open Letter to the people of Australia.

It has been a seismic two months at The Smith Family as we have seen first hand the effects of COVID-19 on the children we support.

These past few weeks, these children have experienced such upheaval in their lives and I have been humbled to see them rise to the challenge.

But they are not out of the woods yet.

While I'm incredibly proud of my team at The Smith Family and the work we do, I have a dream that one day we won't be needed any more. That dream is fading fast.

COVID-19 has made things harder than ever before for children experiencing disadvantage. **But the sad truth is that they faced overwhelming challenges long before the pandemic hit.**

Without the things you need for school, learning is much tougher. Staying motivated when you are behind the others right from the very start is almost impossible. When you don't feel you fit in or belong, connection is "for someone else".

Is it any wonder these kids lose motivation and stop engaging with their education? Is it surprising that they stop trying altogether?

Many children living in poverty were already struggling with school. Now with the impact of COVID-19, they risk falling even further behind.

What happens next will affect these children for the rest of their lives.

What is the cost to us all if we lose the potential of every child whose poverty holds them back from completing their education? Whatever the cost is, I would say that it is too high.

Thankfully, with the support of generous Australians we can help many children in need.

To those children we are able to help, I want to say: we will do everything we can to make sure that poverty will not determine the rest of your life.

I don't know what the future holds, and I don't know anyone who does. But I do know this: no matter what comes, The Smith Family will never stop striving to support every child who needs us.

As we stand with these children, will you stand with us?

Because together, we can help them build a better future.

Thank you.

Lisa

CEO, The Smith Family

To find out more please visit thesmithfamily.com.au or phone 1800 024 069



■ RENEWED CALLS FOR PRESS FREEDOM TO BE LEGISLATED ■ ABC REPORTERS FACE ONGOING INVESTIGATION

No AFP charges for News journo

LEO SHANAHAN
RICHARD FERGUSON

News Corp journalist Annika Smethurst will not face criminal charges, nor will any potential sources, after her reporting revealed an intelligence agency wanted to spy on everyday Australian citizens and sparked a police raid on her home.

Two ABC journalists could still face criminal charges for broadcasting stories relating to potential war crimes by Australian soldiers, however, after the AFP confirmed it was still conducting an "active investigation".

AFP deputy commissioner for investigations Ian McCarthy said on Wednesday the evidence was not strong enough ultimately to charge either the News Corp journalist or any possible sources.

"No one will be prosecuted in relation to this unauthorised disclosure," Deputy Commissioner McCarthy said in Canberra.

The AFP has reviewed all the obtained material and determined there is insufficient evidence to proceed the investigation of the unauthorised disclosure.

"At all times, investigators acted with the utmost faith... investigating breaches of Commonwealth law is the AFP's job."

Smethurst's Canberra home was raided by the AFP in June last year following a story she wrote in April 2018 concerning the government's plan to increase the surveillance powers of the Australian Signals Directorate.

The report in News Corp's Sunday papers detailed plans by the ASD to extend its powers from monitoring foreign intelligence to spying on Australian citizens.

News Corp led a High Court challenge to the raid, with the High Court finding in April that the AFP was not using on Smethurst's story was lawful.

Deputy Commissioner McCarthy said all evidence has now been destroyed and will not be used in any other investigation.

Smethurst told The Australian on Wednesday after news of the AFP decisions broke that she had



There is an overwhelming sense of relief after living with stress and fear for 358 days, says News Corp journalist Annika Smethurst

SEAN DAVEY

"an overwhelming sense of relief" after living with "stress and fear" for 358 days. "That raid came more than a year after I published the story which triggered this saga, meaning it has now been more than two years since the government asked the AFP to investigate."

Smethurst said one benefit of the raids on her home and the ABC was to highlight the need for greater protections for press freedom in Australia.

News Corp Australia executive chairman Michael Miller said "common sense has prevailed, but

at a price" given almost a year had passed since the raid.

"In that time, Annika has shown great courage, forced to live with the threat of jail for simply doing her job of informing the Australian public on a matter of serious public interest."

"It was always unacceptable that a High Court decision was needed for Annika to finally get justice to end her ordeal."

"The irony should not be lost on anyone that the story that led to Annika's persecution was subsequently confirmed as being correct," Mr Miller said.

The News Corp boss said the decision was further evidence of why protections for journalists were necessary in Australian law.

"The AFP's decision to drop the investigation into Annika Smethurst shows why the law reform proposal championed by Australia's Right to Know coalition of press freedom organisations — particularly contestable warrants and shifting the burden of proof from the defendant — are sensible and essential," he said.

Two ABC journalists, Sam Clark and Dan Oakes, could still face charges over a series of stories

on potential war crimes in Afghanistan that triggered a raid on the ABC's Sydney headquarters a day after the raid on Smethurst's home.

The AFP chief of investigations said the pair was still facing possible charges.

ABC news executive editor John Lyons criticised the AFP's continued investigation into two of his journalists, questioning why they had waited more than a year to know whether they would face criminal charges. "They are still twisting in the wind all this time later," Mr Lyons told the ABC.

Attorney-General Christian Porter said he found it frustrating the matter took so long to resolve as he distanced the Morrison government from the complaint and investigation into Smethurst's story.

"The complaint was made independent of government. The decision to commence an investigation was made independently of government. The decision now not to pursue an investigation was made independent of government," Mr Porter said.

EDITORIAL PII

Potential glider habitat wins temporary reprieve

A small parcel of unburnt land on the NSW south coast has won a reprieve from development to allow it to be assessed as a sanctuary for a threatened gliding marsupial.

The Federal Court on Wednesday approved undertakings from developer Ozy Homes that the 20ha site at Mananya, scheduled for clearing as early as this week, be left untouched so an ecologist can determine its importance as a habitat for the greater glider.

The move follows a spirited campaign by a local community group and legal action by the Environmental Defenders Office. The greater glider, found in east coast forests, is listed as "vulnerable" by the federal government.

The land was scheduled to be bulldozed by Ozy Homes for 1800 student houses, but the court made orders noting the developer's undertaking that no work commence over three days while an ecologist surveys the land for the presence of the greater glider. The court will return to consider the evidence early next month.

Mananya Matters environmental association spokeswoman Jorj Lowrey welcomed the result.

"It's a step in the right direction and gives us the opportunity to keep fighting for this precious unburnt mature forest in Mananya and the vulnerable wildlife seeking refuge there," she said.

LEO SHANAHAN

Nationals divided over by-election tilt

ROSIE LEWIS



Kotvojs

The Nationals are split over whether to run a candidate at the looming Eden-Monaro by-election, as some senior MPs push for a three-cornered contest. Nationals branches in the marginal electorate, which is held by Labor by just 0.8 per cent, are still considering their options a month after federal leader and Deputy Prime Minister Michael McCormack declared the party would run in the southern NSW seat for the 12th time in 100 years.

Mr McCormack on Wednesday said he would be happy to run a candidate if the local branch chose to do so.

"I will support what the party members decide to do and I will never вторгнен from this," he said. Parties have until June 9 to nominate a candidate for the seat, which was vacated last month by Labor's Mike Kelly, who resigned because of ill health.

"Everyone is aware of the party's side chance of winning a campaign like this would allow us to put a national spotlight on the things that we need in regional Australia, like water, energy and the removal of the green tape that

frustrates so many farmers," Senator Canavan said.

Former Nationals leader and NSW MP Barnaby Joyce said it was important the junior Coalition partner was seen as a distinct entity. He believed the preferences of a Nationals candidate could help decide the winner.

Sophie Wade who ran for the Nationals in Eden-Monaro at last year's federal election, picked up 6.95 per cent of the first-preference count.

"Once you run a candidate, you can negotiate preferences, which come with a discussion about policy outcomes like roads and medical facilities for Eden-Monaro," Ms Joyce said. "The Nationals should always be running a candidate in an open seat."

Mr McCormack privately questioned why the party would run a candidate after a tumultuous start to the campaign.

NSW Deputy Premier John Barilaro had considered running, with many in the party believing he would be a star candidate who could clinch the seat, but he pulled out and blamed Mr McCormack.

NSW Transport Minister Andrew Constance also launched a 24-hour bid for the seat before exiting the race, accusing Mr Barilaro of white-anting his campaign.

Mr Kotvojs said the stoush between Mr Barilaro and Mr Constance, as well as Mr Barilaro and Mr McCormack, had not damaged his chances.

"People in Eden-Monaro are sensible enough to realise it doesn't matter ... what really matters is who's going to be the best job for the people in Eden-Monaro and take us forward," she told ABC radio. She said he did not attend a Liberal faction meeting.

"Everyone knows we

should know I have a range of different perspectives on different issues, and on each issue I take a position based on the facts."

It's a step in the right direction and gives us the opportunity to keep fighting for this precious unburnt mature forest in Mananya and the vulnerable wildlife seeking refuge there," she said.

LEO SHANAHAN

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Security doubt delays soldier's suit

PAUL MALEY

NATIONAL SECURITY EDITOR

The Federal Court defamation trial brought by Victoria Cross recipient Ben Roberts-Smith against The Sydney Morning Herald and The Age newspapers suffered another delay after the commonwealth sought more time to examine new evidence it said could prejudice national security.

In a hearing on Wednesday, Peter Melican, a lawyer for the Australian Government Solicitor, said the commonwealth had just that morning received notification potentially sensitive evidence was to be heard.

"The commonwealth simply seeks an opportunity to address the potential national security issues in full from those outlines of evidence," he said.

Mr Roberts-Smith, suing the newspapers, now owned by Nine Entertainment, over a series of articles he claimed portrayed him as a war criminal, a bully and an abuser of women.

The newspapers alleged Mr Roberts-Smith kicked a bound Afghan prisoner named Ali Jan

over a cliff during a mission in the village of Darwan in September 2012.

Mr Roberts-Smith, then a patrol commander with the SASR, is alleged to have directed an Afghan National Army officer, referred to in court documents as "Person 12", to execute

There are 'concerns some of that material does include national security information'

PETER MELICAN
LAWYER

Ali Jan, which the newspapers claim he subsequently did.

Mr Roberts-Smith denies any wrongdoing and has said Ali Jan was a Taliban spotter who was largely killed by another member of his patrol.

Mr Roberts-Smith's lawyer Bruce McClintock SC, accused the newspapers of a "crucial" error in their reporting of the alleged war crime. He said the incident could not have occurred as

reported because Person 12 had been dropped from the coalition some months earlier and had not been on the Darwan mission.

The alleged incident in Darwan is also the subject of a criminal investigation by the Australian Federal Police.

The Attorney-General has taken the unprecedented step of invoking the National Security Information Act over the trial to protect potentially sensitive information. It is the first time the NSI Act has been used in a civil case. The act grants the commonwealth extraordinary power in determining what can and cannot be heard in open court.

Mr Melican said some of the material Nine intended to use in its application to amend its defense appeared to be sensitive.

"I am informed that the Attorney-General, or the commonwealth perhaps more accurately, has concerns that some of that material does include national security information," he said.

Sandy Dawson SC, who is acting for Nine Entertainment, said his side had complied with the rules in the NSI Act.

The matter is adjourned until June 2.

UK free-trade talks virtually under way

JACQUELIN MAGNAY

LONDON

Australia and Britain will soon begin formal negotiations — conducted virtually — for a free-trade deal.

A detailed set of negotiating objectives for a UK-Australia free-trade agreement and a scoping assessment that sets out the potential economic impacts of any agreement are expected to be published in coming weeks, before the formal talks start.

Officials have told The Australian preparations for the negotiations are almost complete.

British International Trade Secretary Liz Truss told Westminster last week: "We will shortly be launching negotiations with Japan, Australia and New Zealand, and pressure for early accessions to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. This is an important step in diversifying our trade and making sure we are not just dependent on a small number of countries for our imports and exports. It is also important that we work with like-minded free-market democracies

to help set global standards in trade."

Australia's high commissioner to the UK, George Brandis, told The Australian: "We expect the announcement of the commencement of formal negotiations to take place over the next few weeks."

"We are committed to having an ambitious free-trade agreement wrapped up at the earliest possible time. Our commitment is to an ambitious, gold-standard trade deal that strengthens both our economy and helps create jobs."

The talks had been expected to have already begun so that a deal could be finalised just as the transition period of Brexit finishes at the end of the year, but the timetable was pushed back because of the coronavirus pandemic that sees the UK shut down much of British life.

Senior ministers and bureaucrats from Australia and Britain have been in regular informal talks since Brexit was concluded to iron out possible hurdles before the objectives are released. Some of these relate to ongoing subsidies for British farmers.

Australia's Trade Minister, Simon Birmingham, has been in trade talks with the EU for nearly two years but these talks have been caught up in protectionist issues

largely centred on French farmers. The impact of the coronavirus on the EU, and its recent announcement of grants worth €500bn (\$825bn) to struggling European states could make talks more difficult.

It had always been expected that although Australia started talks with the EU well before the UK, the British deal would be much easier to sort out.

Last week, Britain released its negotiating objectives in a free-trade deal with Japan and last month it began formal talks with its big export market, the US. However, just weeks into the UK-US discussions there are suggestions the talks could result in a "mini deal" sorted before the US presidential election in November that seeks to pull the UK away from China.

Last week, Ms Truss announced Britain would remove all tariffs below 5 per cent, to start when the Brexit transition period ends on December 31. Known as the UK Global Tariff, it is a simple and cheaper model than the EU's Common External Tariff and will apply to countries with which it has no agreement.

Bushfire report's climate warning

EAN HIGGINS
NATIONAL RURAL REPORTER

Climate change will increase forest fires, making many areas drier and hotter, extending the duration of the fire season and increasing the area and intensity of unplanned fires, a government report has warned.

The Australian Bureau of Agricultural and Resource Sciences study of forest fires, released on Wednesday, says the changes will reduce the interval between fires and the opportunities for using planned fires to contain the hazard.

"Fires in northern Australia are driven by fuel load," Dr Read said. "Climate change in the north will work through giving you more fuel seasonally every year because of potentially better growing conditions in the wet season when the grasses grow."

In the south, Dr Read said, extensive forest fires were usually produced after a set of dry years.

"The real driver for the fires in 2019-20 was that we had a hot drought — a series of dry years and some heat — and climate change is expected to give you more heat and drier conditions in southern Australia," he said.

The report says most Australian forests are adapted to fire and regenerate.

"Fire is an important ecological driver in most Australian forests, whether the tall moist forests of the east or the south-western Australia or the dry forests of the north," the report says.

Some tree species specifically require fire to regenerate or establish, it says, such as mountain ash which forms tall forests in Victoria and Tasmania.

In southern Australia, nearly 80 per cent of the fires occurred on nature conservation reserves or multiple-use public forests.

The difference between PM&C did not brief Morrison in Hawaii

OLIVIA CAISLEY

Prime Minister and Cabinet secretary Phil Gaetjens says his department did not directly brief Scott Morrison while he was on holiday in Hawaii during the Black Summer bushfire crisis and he was never consulted about the Prime Minister's leave.

Mr Gaetjens told the Senate committee scrutinising the government's bushfire response on Wednesday that he was also not told about the Prime Minister's leave.

NSW Transport Minister Andrew Constance also launched a 24-hour bid for the seat before exiting the race, accusing Mr Barilaro of white-anting his his campaign.

Mr Kotvojs said the stoush between Mr Barilaro and Mr Constance, as well as Mr Barilaro and Mr McCormack, had not damaged his chances.

"People in Eden-Monaro are sensible enough to realise it doesn't matter ... what really matters is who's going to be the best job for the people in Eden-Monaro and take us forward," she told ABC radio. She said he did not attend a Liberal faction meeting.

"Everyone knows we

should know I have a range of different perspectives on different issues, and on each issue I take a position based on the facts."

Mr Morrison cut short his trip to Hawaii on December 2 after a week of criticism for going overseas while fires raged across the nation.

Mr Gaetjens told the Senate committee that it was "a bit of a stretch" to say the Prime Minister was not here during the crisis, Mr Gaetjens said.

On announcing his early return to the UK on December 20, Mr Morrison said he had been told he had been

the impact had been severe.



Prime minister Julia Gillard and foreign minister Kevin Rudd in October 2010



Prime minister Tony Abbott arrives for the leadership ballot, September 14, 2015



Prime minister Malcolm Turnbull and Scott Morrison before the 2018 spill vote

Turnbull gives a press conference accompanied by his grandson Jack and granddaughter Alice after the spill vote in which Morrison was elected leader

Turnbull has degenerated the most and is now a wholly owned subsidiary of sub-faction leaders and union secretaries, diminishing real-world authority.

The membership of political parties continues to decline and constitutes less than 1 per cent of the electorate. As they are less representative of the community, and those who vote for them, parties are finding it difficult to attract a diversity of candidates. Labor has shifted leftward and the Liberal Party has shifted to the right. Populism, while not as prevalent as overseas, is evident on the fringes of the major parties and is the stock-in-trade for minor parties.

The influence and authority of the public service has tumbled. It is now challenged by competing, sometimes irreconcilable, interests in political staffers. Public servants rarely offer, or are asked for, frank and fearless advice. The bureaucracy's effectiveness has been sapped by cost-cutting, efficiency dividends and many bright young people preferring a more lucrative and rewarding career in the private sector.

The challenge for the 2020s is to bring greater stability to the political system and make progress on policy issues such as energy and climate change, workplace relations and taxation reform. We have done this before. There is little disagreement between the major parties on issues such as the National Disability Insurance Scheme, school and higher education policy, and health and Medicare foreign policy and national security.

The focus for the decade ahead should be to set aside the destructive tribalism of the past and surrender the idea that progress means one side left or right, achieving victory over the other on a contestable policy area. The task is to achieve a workable consensus that advances the country and its people. This is, after all, the purpose of politics.

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GLOSSARY

Carbon tax

/kɑːbən tæks/ (noun) The name given to Labor PM Julia Gillard's carbon pricing scheme in 2011 by then opposition leader Tony Abbott. Peta Credlin later admitted "it wasn't a carbon tax... but we made it a carbon tax"

Catfish

/kætfiʃ/ (noun, verb) Someone who adopts a fictional online persona and targets, seduces and deceives a victim. For example: Captain GetUp!

Covered outdoor learning area

/kəvərd' aʊtəd̩r̩ ˈlərnɪŋ ərə/ (noun) A piece of school playground infrastructure, championed by then education minister Julia Gillard at the start of the decade, which often went well over budget. Also known as a COOLA. The biggest shade problem in schools until the strikes for climate

Culture wars

/kʌltʃər̩ wɔːz/ (noun) A conflict between groups with different ideals, beliefs, philosophies. For example: whether tomato sauce should be kept in the cupboard or fridge

Dab

/dæb/ (verb) A dance move where you quickly extend one arm and hide your face in the crook of the other that coincidentally is an example of the correct way to sneeze

Democracy sausage

/dəmək'ɒrəsɪ ˈsæsɪd̩/ (noun) The colloquial name for a barbecue sausage served in bread (with or without onion or sauce) and sold as a fundraiser at polling places on election day. Much like the Senate, no one knows what is inside the sausage

Dox

/dɒks/ (verb) To publish someone's personal information (name, photo, address, phone number) and share it with others to embarrass or cause harm

Eco-anxiety

next page ▶

DECADE OF DISRUPTION

IN A CLIMATE OF RISING CONCERN

Devastating, intense weather events, record temperatures and shifting patterns mark a decade of extremes

MATTHEW DENHOLM

Wherever you stand in the climate debate, one thing is indisputable: it's been one hell of a decade weatherwise.

The 2010s started with a big wet and have ended with a big dry, earlier-than-usual bushfires and record temperatures.

Did we imagine it or was this an exceptional decade and, if the latter, what factors were at play?

For most of us, living year to year, it's hard to know, of course. Our conventional tends to be in flux, though.

"I never used to be this hot," is the refrain as we brave the barbecue in the middle of a summer heatwave. Or else it's a bitter "so much for global warming", as we stoke the fire home on a bitterly cold midwinter evening.

However, the data and the experts both suggest the decade now coming to a close was not business as usual, at least across several key measures.

"It's definitely been a decade of extremes," says Anna Ukkola, climate scientist and research fellow at the Australian National University.

The hottest topic right now is temperatures. "It's the hottest decade on record over all of Australia," Ukkola says. "It's about one degree hotter than the average of the last 100 years."

"We've now had four decades in a row that have been hotter than the average, with the last one being the hottest of them all. It holds pretty much across Australia. The temperature trends are very similar."

The Bureau of Meteorology tends to compare annual observations to those seen between 1961 and 1990, as a kind of scientific control period. The conclusion, however, is very similar.

"It will be clear Australia's warming is not on record," says Blair Trewin, BoM senior climateologist.

"It's most likely going to come in around 0.85 of a degree above the 1961-90 average, which will make it about 0.3 of a degree warmer than any previous decade. It also looks like being the record warm decade for every individual state and territory."

Trewin says that since 2013, every year has been among the top 10 warmest years on record in Australia and that every year of the decade except 2011 recorded above annual mean temperatures (2011 was merely average).

The country's warmest year, in records dating back a century, was 2013, although the last days of this month may yet see this overtaken by 2019.

The year drawing to a close is already on track to be among the four warmest years on record, with the final annual mean temperature expected to be 1.3C to 1.4C above average.

Heatwaves aren't what they used to be, either; they're worse. "With the increase in mean temperatures, we also see an increase in the occurrence of extreme high temperatures," Trewin says.

The BoM says very high monthly maximum temperatures that used to occur only 2 per cent of the time in the past (1951-80) now occur 12 to 15 per cent of the time.

It suggests this decade has seen Australia's worst heatwaves, with the country recording the three hottest days on record.

As well, the BoM reports that Sydney, Hobart and Adelaide all had their hottest days on record during this decade.

Natural variations in climate undoubtedly have played a role in all this mercury-soaring record-busting. Australia always has, and always will be, a land of "droughts and flooding rains", as Dorothy MacKellar would have it. Cyclical changes in the Pacific Ocean and the atmosphere above it give us the El Niño and La Niña events, with which most Australians are now familiar.

The big wet experienced from mid-2010 to early 2012 was, for example, linked to a strong La Niña, bringing record rains to Queensland in 2010 and to Western Australia in 2011.

Natural differences in the sea

period that it has been below average that we can see in the 100 years of data that we have."

Crucially, it is the winters in this vital region that have been exceptionally dry, depriving farmers of rain for crops and rivers of much-needed storage.

"The last three winters are all in the bottom 10 per cent (for rainfall) of all the years (in the basin)," Ukkola says. "We've never had three consecutive winters together that have been so dry."

It has not only been exceptionally dry in the Murray-Darling region at the back end of this decade; it also has been remarkably hot, adding to its intensity and devastating impact.

According to the BoM, the region's four overall warmest January to August periods on record since 1910 have been this year, last year, 2017 and 2016.

"The last decade is one of the worst droughts we've experienced," Ukkola says. "We've had bad ones in the past — the millennium drought, for example — but this one is definitely in the top four droughts in Australia over the last 100 years."

AUSTRALIA'S WEATHER IN THE 2010S

TEMPERATURE

- Last decade (2010s) the hottest on record (0.85 degree above 1960-1990 average)
- Last decade about .3 of a degree warmer than any previous decade
- Every year of the decade except 2011 was above annual mean temperatures. (2011 was average.)
- Record warm decade for every individual state and territory.
- December includes Australia's two hottest days on record: December 19, 2019 (average maximum across the country of 41.9°C, exceeding previous record of 40.3 °C on January 7, 2013).

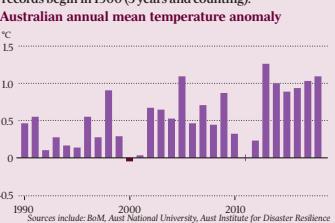


RAINFALL / DROUGHT

- The second wettest decade for Australia as a whole.
- NSW, Vic and Tas all had rainfall below the long term average this decade.
- Rainfall in WA, the NT, SA and Qld all above the long term average this decade.
- Qld recorded its wettest year on record in 2010 and WA in 2011.
- Jan to Nov 2019 the second lowest rainfall for that period on record for Australia as a whole.
- Last three years constitute the longest period of below-average rainfall for Murray-Darling Basin and NSW since records begin in 1900 (3 years and counting).



Australian annual mean temperature anomaly



preceding it, do not believe the extreme conditions of the 2010s can be explained entirely by such natural ebb and flow.

"One of the advantages of looking at averages over a decade is that it will tend to smooth out a lot of the day-to-day variability," Trewin says.

So if we look at the decade as a whole we've had La Niña but we've also had El Niño, we've had both positive and negative IOEs. The fundamental underlying picture with the warming decade is the long-term warming trend."

Ukkola agrees. "In terms of the temperature, looking at the long-term context, it's way outside natural variability," she says.

"It's a clear climate change signal and the temperatures are well above what we have seen for Australia in the past."

One of the regions to feel the heat the most has been the Murray-Darling Basin, the farmers in one of Australia's key food bowls continuing to battle drought.

"Over the Murray-Darling Basin we have now had 12 consecutive seasons — so the last three years — in a row that have been below the long-term average (rainfall) conditions," Ukkola says.

Natural differences in the sea

However, the picture for rainfall across the decade elsewhere is mixed.

Ukkola says the 2010s was the driest decade on record only for the country's southwest, while the BoM advises the decade was neither the driest nor the wettest decade for the state or territory.

Now, Victoria and Tasmania had rainfall below the long-term average, while Western Australia, the Northern Territory, South Australia and Queensland were all above the long-term average, the BoM says.

In fact, despite the drought the record temperatures, the expanding fire seasons and the more intense heatwaves, Australia as a whole has just experienced its second wettest decade.

"Excluding the current drought, which is unusual, the rainfall is well within what's normal for Australia," Ukkola says.

"Apart from the driest decade on record for the southwest, everywhere else we can't say that it's unusual in the context of the last 120 years that we have records for."

The rainfall for the decade was influenced by two intense big wet seasons in 2010-12 and 2016, with the largest impact on the tropics and parts of the outback. Queensland

had its wettest year on record in 2010 and WA in 2011.

In general terms, the longer-term trend is for southern Australia to get drier, particularly during the cooler part of the year, between April and October," Trewin says. "However, northwest Australia has definitely got wetter; the NT and the tropical parts of WA."

While the decade was one of extremes, there were slightly fewer cyclones than is average. However, those that did strike more than compensated for this with their intensity and devastating impact.

Cyclone Yasi tore down the Queensland coast from late January to early February 2011, making landfall at Mission Beach on February 2. A category 5 cyclone with 285km/h winds, it forced 10,000 people to evacuate and killed one man, damaged 2636 houses and businesses and caused an estimated \$1.5bn in damage to public infrastructure.

Two years later, in January 2013, Cyclone Oswald brought heavy rainfall and floods to large parts of Queensland and NSW. Six people died, 2000 were isolated for days and damage to vital infrastructure ran into hundreds of thousands of dollars.

And in March 2017, Cyclone Debbie, a powerful category 4 system with winds up to 263km/h, devastated resorts in the Whitsunday Islands, including Hamilton and Daydream, as well as Airlie Beach, Proserpine, Bowen and Collinsville. At least 10 people died as a result of the flooding and severe weather.

Over the 2010s there have been an average of about nine tropical cyclones per year in the Australian region, slightly below the long-term average of 10-11," Trewin says. "We're seeing a slight decrease over time in the number of cyclones but an increase in the proportion of cyclones that are intense."

If it wasn't flood it was fire. While coming after the horror of Victoria's Black Saturday bushfires in February 2009, the past decade saw its own share of major fires, as well as a lengthening of the bushfire season in parts of the country.

The fires are too numerous to mention but records point to this season as among the worst. Since September, bushfires have burnt an estimated two million hectares across NSW and Queensland, destroying more than 900 homes and killing eight people, while some are ongoing.

The early arrival of the bushfire season for 2019-20 was notable. According to a BoM analysis released on December 18, areas of all states and territories this past spring experienced highest on record daily Forest Fire Danger Index levels.

BoM reveals accumulated FFDI values for spring were more than twice the average across large areas of eastern Australia.

However, such early high bushfire conditions did not suddenly arrive this season. The BoM analysis shows it has been a marked trend across much of the nation this decade.

In 2010, the accumulated FFDI for spring in Australia was just over 1500; this past spring it was more than double that, with a steadily trending rise between these extremes.

Things also have warmed up in the sea this decade, with more records to come. The sea temperatures over the Australian region over the last decade have been about 0.55 of a degree above the 1961-90 average," Trewin says.

"So not quite as sharp a difference as for land temperatures but still quite significant. It has also been about 0.2 of a degree warmer than any other decade."

"Also, 2016 was clearly the warmest year on record (for ocean temperatures) in the Australian region. No other year gets close to it."

Even Australia's Antarctic Territory has had a wild ride. Until 2015, sea ice cover in the Antarctic region has been increasing slightly, but it's decreased quite sharply after 2015," Trewin says. "And since late 2016 it has been at or near the lowest levels of the past 40 years."

From the Top End to Tassie, on land and sea, and even the ice, the decade's climate was tumultuous and often unprecedented.

THE AUSTRALIAN

'Unequivocal link' between extreme bushfires and climate crisis

By **ERIN LYONS**

NCA NEWSWIRE

5:28PM JULY 29, 2020

Leading Australian scientists say there was an “unequivocal” link between last summer’s catastrophic bushfire season and climate change.

Speaking at Wednesday’s Senate inquiry into the 2019-2020 bushfire season, Bureau of Meteorology (BOM) chief executive officer Dr Andrew Johnson said “there’s no doubt” the planet was warming.

“There’s no doubt the causes of that warming have significant human footprint. That’s well established and scientific evidence is unequivocal,” he said.

He said average temperatures had risen 1.4C since the turn of the century while parts of the country had experienced a rapid decline in rainfall.

“How that (global warming) translates to a severe weather event is a broad field, (but) there are certain dimensions of the warming planet and what we’re experiencing today that’s becoming clear,” he said.

In January Prime Minister Scott Morrison and his Energy and Emissions Reduction Minister Angus Taylor suggested the country did not need to cut emissions more aggressively in a bid to stem global warming despite a three-year drought and raging fires.

Australia contributes about 1.3 per cent of the world’s carbon emissions but remains one of the largest carbon emitters per capita.

Dr Johnson said a rise in global emissions was driving up temperatures, which was likely to increase the risk of bushfires.

"Bushfires are starting earlier and ending later. There's a climate signal in that," he told the panel.

"How that plays out in the future will very much depend on how humanity responds."

He said the bureau had provided extensive advice to government about the link between climate change, bushfires and emissions.

"We've been very clear and consistent in our advice to government across all three levels for many years," Dr Johnson said.

"That advice is freely available to the general community.

Noting the BOM's submission, Queensland Senator Murray Watt said it had provided more than 100 briefings about the bushfire risk to federal and state governments in the months leading up to what would be the most catastrophic bushfire season on record.

That included briefings about the risk associated with areas that were the hardest hit.

Dr Johnson said the bureau provided "extensive briefings to all levels of government leading into the summer", spanning from daily updates to forward briefings.

Committee chair Senator Tim Ayres questioned several of the country's most well-regarded scientists and scientific bodies about one of the nation's most "catastrophic events".

Professor Mark Howden, of the Climate Change Institute at the Australian National University, said drought, high temperatures, low humidity and strong winds all contributed to the development of extreme bushfires.

This is on top of the lowest rainfall and highest temperatures experienced on record.

"There's a long and strong link to reduced humidity due to climate change which is projected to get worse in the future," Prof Howden said.

"Each of these four major drivers will get worse ... and the risks associated with climate change are growing."

Professor Jason Sharples, of UNSW's School of Science, echoed those comments, saying "what drives bushfires will increase due to global warming".

"It's hard to put an exact number on whether that will double or triple," he said.

Prof Howden argued that Australia, along with the rest of the world, must reduce greenhouses gases.

"The question is whether we can extend that action (from the Paris Agreement)," he said.

Although, this summer could look a little different.

Dr Karl Braganza, the BOM's head of climate change, said there was a potential for a La Niña event – the cooling of the Pacific Ocean – to occur this year.

He explained this could increase the risk of tropical cyclones and flooding.

"We would have to increase provisions for those things," he told the inquiry.

"All going well, (it) would mean more rain and reduce the risk of bushfires this summer. Having said that we haven't seen the rain we expected to fall in the recent months.

"We are watching conditions as they unfold."

He said the bureau would now focus on its long-range forecasts.

"There's still some very parched areas of the country so the next few months is crucial," Dr Braganza said.

The inquiry continues.

'RADICAL' COMMITMENT TO SHARE DECISION-MAKING ON INDIGENOUS DISADVANTAGE

Historic partnership 'unprecedented'

PAIGE TAYLOR
INDIGENOUS AFFAIRS
CORRESPONDENT

Governments across Australia have reached historic agreement with Aboriginal and Torres Strait Islander organisations about how to reduce Indigenous disadvantage, replacing the failed Closing the Gap initiative with 16 new targets and a "radical" commitment to share responsibility and decision-making.

Indigenous Australians Minister Ken Wyatt described Scott

Morrison's decision to enter a real partnership with a coalition of some 50 peak Indigenous organisations instead of simply consulting them as unprecedented.

He believed it would change the way Australians thought about the challenge of reducing Indigenous disadvantage.

The Prime Minister was quite courageous in saying 'This won't be designed by government — we are going to work with the peaks and we will negotiate a paragraph by paragraph, we will negotiate the targets and we will negotiate the way it should be implemented

by all parties', which means responsibility: all of us have responsibility for achieving the targets,' Mr Wyatt said.

"It is radical because most strategies and plans done by governments have always been led by governments and the Aboriginal input is often by consultation or committee. We have had 50 peaks involved in this process — that is unprecedented and it is a quantum shift from the behaviour of the past.

"I believe the legacy for the Prime Minister is that this approach will see not an increased

effort but a substantial effort by everybody now to own the challenge of Closing the Gap, not just the Commonwealth."

Pat Turner, who has helped design the new targets as lead convenor of the coalition of Indigenous organisations, said the national agreement made shared decision-making a reality not only for peak Aboriginal and Torres Strait Islander organisations "but for all First Nations people that want to have a say on how things should be working in their communities".

"If the priority reforms are im-

plemented in full by governments and through shared decision-making with First Nations people, we should see changes over time to the lives and experiences of our people," she said.

The Closing the Gap initiative set goals for reducing Indigenous disadvantage in seven areas but just two of the targets set in 2008 — early childhood education and Year 12 attainment — were achieved.

Ambitions failed in targets for school attendance, child mortality, employment, life expectancy, and literacy and numeracy.

by 50 per cent by 2031 had been dropped.

Mr Wyatt said some targets did not have figures attached because "we have further work to do... The areas that we don't have the percentages require further definition and require a much more accurate definition of what are we going to measure so we do get the outcome and that was agreed to by the 50 peak Aboriginal bodies."

States, territories and the Australian Local Government Association have 12 months to present implementation plans to the joint council co-chaired by Mr Wyatt and Ms Turner well

oversee implementation of 16 new targets in areas including life expectancy, birthweight, early childhood education and development, Year 12 and tertiary qualifications, employment, incarceration rates, household safety and the proportion of children in out-of-home care.

The Australian has reported on numerical targets in a draft of the final agreement, and on subsequent amendments including that a target to reduce violence against women and girls aged 15 and older

GREG BROWN
GEOFF CHAMBERS

Anthony Albanese and senior Labor Left MPs have slapped down Joe Fitzgibbon, with the resources spokesman's criticisms of the party's environmental wing being labelled "conspiracy theories" and "just wrong".

Amid internal divisions on environmental policy, the Opposition Leader dismissed Mr Fitzgibbon's concerns that the "fundamentalist" positions of the Labor Environment Action Network were a barrier to the party's electoral success.

"It's just wrong. LEAN is made up of people who are committed to environmental action," Mr Albanese said in Sydney on Wednesday.

"The Labor Party is the party that should be very proud and are proud of everything from the Daintree being saved, the Franklin being saved, the concern around climate change, concern around the Great Barrier Reef, the concern around Kakadu National Park."

The comments are the biggest public rebuke Mr Albanese has given to the outspoken Hunter MP, who is a leading figure in the powerful NSW Right.

The Labor member for Jagajaga, Kate Thwaites, declared on Twitter that Mr Fitzgibbon was peddling conspiracy theories over his claims that Greens voters were infiltrating the ALP. Her tweet was liked by two Labor Left frontbenchers who are close supporters of Mr Albanese, Andrew Giles and Stephen Jones.

Labor Left frontbencher Pat Conroy, who represents the Hunter Valley electorate of Shoalhaven, responded to Mr Fitzgibbon's seat, said: "There was a definite role for environmentalists in the party".

"In my experience LEAN is just as passionate about creating jobs as they are protecting the environment," Mr Conroy said.

"Just as workers in traditional industries are also interested in protecting the environment."

A Labor Left source said it was "about time" Mr Albanese spoke out against Mr Fitzgibbon on climate change and environmental policy.

The source said Labor Left and some right-wing MPs were growing silent from Mr Albanese and climate change spokesman Mark Butler in response to Mr Fitzgibbon's policy freelancing.

Another Labor MP said the process had to be managed carefully to avoid destabilisation, with Mr Fitzgibbon's "bizarre" and "deluded" attack on LEAN being the right time for the Labor leader to speak out against him.

Donations to Currimbirra Wildlife Hospital will be used to purchase a rescue 4WD car to help them save more koalas and other animals in the fire's path.

Money to the Lachlan Fire Station, based in the remote "Protecting Hobart's Rear End" — will save the station from constant flooding and bring it in line with work rules.

Projects funded in East Gippsland and Capricornia will help Landcare Australia prepare exit routes, water routes and fire shelters with local landowners.

Landcare Australia chief executive Shane Norrish said the two donations of \$150,000 would empower communities rebuilding from the bushfires and getting ready for the next one. "This support is helping to rebuild communities with on-ground projects, including habitat restoration, wellbeing and mental health activities, as well as engaging volunteers."

On Monday, The Australian revealed a leaked email from Mr Fitzgibbon to LEAN, in which he rejected an invitation to its conference in the Hunter Valley on Wednesday night. He told LEAN it was putting blue collar jobs at risk and warned it against exaggerating the number of jobs in the renewable energy sector.

ADDITIONAL REPORTING: KIERAN GAIR

Gunner to face voters with smashed budget

AMOS AIKMAN
NORTHERN CORRESPONDENT

The coronavirus pandemic and corresponding national economic slump will smash the Northern Territory budget, doubling this year's projected deficit to \$2.3bn or about 40 per cent of revenue.

On his last day of official duties before the government goes into caretaker mode ahead of an August poll, Chief Minister Michael Gunner unveiled an updated fiscal outlook adding \$1.3bn to the NT's net debt forecast.

The revised 2020-21 total of \$8.2bn (equal to a nation-leading 134 per cent of revenue) means the Labor team will face voters with the government owing more than three times as much as it did when they took power.

Mr Gunner said it had been "an extremely difficult" four years. "We saw the slowdown of the Impex (LNG) project, high with 11,000 workers leaving the construction site," he said.

"We've seen an argument ... about the GST distribution. "We feel we're \$500m worse off every year as a result of how it's calculated."

Treasurer Nicole Manison said slightly improved estimates for 2019-20 showed her government's budget repair plan had been working and that an economic recovery had been under way when the pandemic hit. "COVID-19 has changed everything," she said.

The government has committed \$350m to pandemic-related stimulus, which Treasury thinks will deliver an economic return of \$700m and may have already helped save about \$670m jobs.

The Territory gets almost 80 per cent of its revenue from Canberra, mostly in the form of GST. Revised estimates show drops in local tax receipts of 5-10 per cent annually and totaling \$142m in the two years to July 2021.

Treasury thinks the equivalent GST hit will be \$649m.

Mr Gunner, who has been campaigning on his success in managing the pandemic, said infection control was the key to economic success.

"It has never been more critical to get more jobs in more areas," he said. "To fix the budget, you need to fix the economy; to fix the economy, you need to control the virus."

Country Liberal Opposition Leader Lila Finoorah blamed Labor for the Territory's woes.

"Here we are less than a month from the election, and the Gunner government has unveiled an economic horror show with no solutions to fix the situation," she said.

"This government continues to fail to recognise that it is the cause of our financial burden and our economic decline, instead choosing to blame the federal

Territory must boost economy or risk going broke

AMOS AIKMAN

ANALYSIS



After years of self-indulgent bickering, the Northern Territory's major parties are finally on the same page.

Australia's Asia-facing jurisdiction needs to get off the handouts and develop a private sector-led economy based on energy, resources and defence.

The pandemic makes this urgent. The Territory is borrowing to pay mounting expenses before coronavirus hit. Without fundamental changes now, it will go broke.

Point-scoring between Canberra and Darwin has, for now, been replaced by national cabinet co-operation. And the recession should increase the reformist zeal, because developing the north is in Australia's strategic interests.

The latest announcements from USMINN confirm the Top End's growing importance to the US alliance.

A local development push is being led by a team including luminary such as Darwin-born former Dow Chemical chairman Andrew Liveris and former Westpac boss Gail Kelly.

Crucially, their priorities appear to align with Canberra's and to have cross-party support.

The Territory has fumbled numerous opportunities and there are no guarantees this time will be different. But the pandemic will drive people out of cities, incentivise growth-booster investments and heighten the need for stronger sovereign wealth.

Whether better to look afresh than the Territory, with its vibrant population and comparatively cheap housing?

government and GST losses.

Territory Alliance leader Terry Mills called the budget numbers "appalling" and the government "deceitful".

Treasury documents reveal national modelling near the start of the pandemic suggested the Territory could face 92,500 COVID-19 infections and 5400 hospitalisations, costing at least \$200m to treat.

In fact just 32 coronavirus cases have been recorded so far.

The fiscal update put the cost of COVID-19-related measures at \$159m in 2019-20 and \$216m in 2020-21.

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News Corp grant a welcome boost for fireys



Villeneuve Rural Fire Brigade members Brock Purdie, left, Ian Swadling and Jacob Murphy on Wednesday

RICHARD FERGUSON

Thousands of volunteer firefighters and dozens of towns ravaged during the Black Summer will get a much-needed boost as News Corp Australia unveils nearly \$500,000 worth of donations into National Natural Disaster Arrangements to implement a number of climate change reforms to prevent the Black Summer from happening again.

An Emergency Leaders for Climate Action report, released on Thursday and developed with more than 150 experts, outlines 165 recommendations to help the nation better prepare for and manage this year's bushfire season.

The latest round of grants from News Corp Australia will go to wildlife hospitals, rural fire stations and landscape projects to rejuvenate communities and prepare for the upcoming summer.

Villeneuve volunteer firefighter Ian Swadling, who has responded to bushfires for more than 30 years, said the \$500,000 donation to the Rural Fire Brigade Association of Queensland would help his crew replace trucks and marquees badly damaged during the Black Summer.

"This is a very generous donation, it will be a big help," he told The Australian.

"Our vehicles were really worked into the ground during the summer. A lot of the older vehicles need repairs and replacements. Chainsaws need replacing, the marques were also badly hit."

This donation from News Corp Australia is a great boost of more for the crew, \$500,000 or \$5, it's really appreciated.

It's kindness like this — and what we saw during the fires with

fuel producer levy — to pay for fuel-produced disaster costs.

Climate councillor and former Fire & Rescue NSW commissioner Greg Mullins said it was critical the Morrison government tackled the root cause of climate change by urgently phasing out fossil fuels to reach net zero emissions — a task he said he hoped would be included in the royal commission's final report.

"Climate change has pushed Australia into a new bushfire era where we must fundamentally rethink how we prepare for and manage this year's bushfires seasons.

It's been watching the enemy for 50 years now and the enemy's geared up, you could say, like they've suddenly got nuclear weapons," Mr Mullins said.

"It is still trying to deal with that with conventional forces and we need more help."

Other recommendations include establishing insurance price insurance so the Australian insurance sector can still insure their homes, and a national strategy on climate change, health and wellbeing.

"It is important that the federal government takes these recommendations seriously and acts on them urgently."

Mr Mullins told the commission last month longer

lia has raised an extra \$1.8m, and more than \$2m in donations already went out to community groups and firefighters.

Thursday's rounds of donations include \$48,000 to Currimbirra Wildlife Hospital, \$49,500 to Lachlan Fire Station in rural Tasmania, \$300,000 to two Landcare projects in north

Queensland and eastern Victoria, and the donation to the RFAQ.

New Corp Australia's community ambassador Penny Fowler said investing in rural and regional recovery would continue to be a priority.

"We are pleased to continue our support of rural and regional Australia, in particular, bushfire-

affected areas in Queensland and Tasmania that have been one of the toughest years on record," she said.

"We are also delighted to support Landcare Australia, which has been on the ground working with communities for 30 years.

"These projects will go a long way towards restoring habitats and assisting in the mental well-being of communities still struggling with the events of the year."

Donations to Currimbirra Wildlife Hospital will be used to purchase a rescue 4WD car to help them save more koalas and other animals in the fire's path.

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Union heaps further coalmine pressure on Palaszczuk

JAMIE WALKER
ASSOCIATE EDITOR

The Australian Workers Union has called on Queensland's Labor government to green-light the New Acland coalmine expansion, stepping up pressure from the Labor Right for the project to proceed.

AWU state secretary Steve Baker said the government should approve the \$900m redevelopment, even though mine opponents have gone to the High Court to restart the clock on the 13-year lease.

"Approving this mine now will

inject much-needed funds into the Queensland economy and deliver real benefits for local workers and their families," he said.

"We respect there are processes that need to be followed, but given the years of delays and the challenges we're facing right now, we think it's valid and truly time to push ahead with this project."

"We need to be doing everything we can to support local jobs and industry in Queensland."

Mine owner the New Hope

Resources, Mines and Energy spokesman Joel Fitzgibbon, veterans affairs and defence personnel spokesman Shayne Neumann and senator Anthony Chisholm, a former ALP state secretary in Queensland, have pushed given rise to claims that it is hostile to coalmine expansion.

Mr Fitzgibbon has said the risk lay with the company, not the state, if the mine expansion on the Darling Downs west of Brisbane was to proceed before the High Court ruled on the appeal by the Oakley Coal Action Alliance, a group of local farmers and environmentalists.

The court believed it had cleared the last hurdle last year when the Queensland Court of Appeal delivered judgment and orders in its favour.

Australia will fast-track a push to connect directly to the power grid in Southeast Asia via a submarine cable in a move aimed at creating thousands of jobs in northern Australia and generating 2600 a year in exports to the world.

State-owned utility the Australian Energy Market Operator (AEMO) has said the project will help to meet the growing demand for electricity in Southeast Asia.

It becomes one of about 20 projects to receive major project status in recognition of its potential to drive economic growth and employment. This means it will receive extra support from the Major Projects Facilitation Agency.

cy, including a single entry point for federal approvals and help with state and territory approvals.

Energy Minister Angus Taylor said it would bolster Australia's position as an energy exporter, and there was scope to "capitalise on our strengths in renewables to continue to lead the world."

The project is estimated to generate up to \$2bn worth of exports for Australia each year by 2027 and will require a \$22bn investment of which \$8bn will be invested in Australia.

Industry Minister Karen Andrews said it would create 1500 jobs during construction and 350 ongoing jobs, and would indirectly support 12,000 jobs.

JOE KELLY

Australia will fast-track a push to connect directly to the power grid in Southeast Asia via a submarine cable in a move aimed at creating thousands of jobs in northern Australia and generating 2600 a year in exports to the world.

It will create a long-term energy export capability to the countries in the Association of Southeast Asian Nations, including direct link to Singapore, and help unlock the economic potential of the Territory.

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