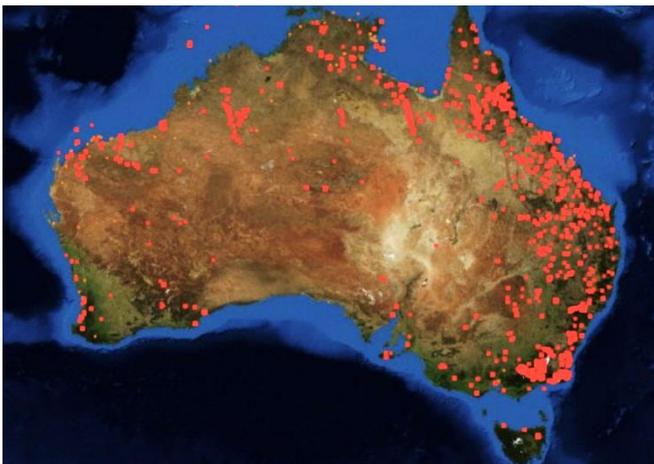




## “Where all was burned to ash.”<sup>2</sup>

The bushfires that swept across Australia 2019/20 were shocking in their ferociousness and scale. The fires killed at least 34 people,<sup>12</sup> and destroyed over 5,900 buildings - including 2,779 homes.<sup>13</sup> As of March 2020 the fires had burnt an estimated 186,000Km<sup>214</sup> - that's an area greater than the whole of England. (130,395Km<sup>2</sup>) The fires also had a massive effect on the nation's biodiversity.



“In south-east Australia, the frequency of very high and extreme fire danger days is expected to rise.”<sup>15</sup>

The mega fires consumed everything in their path and left little to enable a recovery of the pre-existing ecosystems.<sup>16</sup>

Fire is a natural part of an ash forest life cycle. They periodically clear out older stands to make way for new growth. But the extent and intensity of the fires in 2019-20 were such that they killed the trees.<sup>10</sup>

Many forests will be able to regenerate but some may never return to their former condition and revert to open woodland or grassland. Then the forests could be lost forever. These drastic and extensive changes to the landscape have major implications for Australia's diverse wildlife. The fires in Eungella National Park, for example, threatened frogs and reptiles that do not live anywhere else.<sup>16</sup>

“Koalas have a very limited capability to adapt to rapid human-induced Climate Change...making them very vulnerable to its negative impacts.”<sup>6</sup>

Koalas are particularly vulnerable to bushfires. Their slow movement and tree dwelling lifestyle make it difficult for them to escape.<sup>6</sup> Dozens of injured koalas were carried to “hospitals” every day. Many were treated for their burns and some survived - but many more were incinerated in the forest fires and nobody knows how many died.<sup>17</sup>

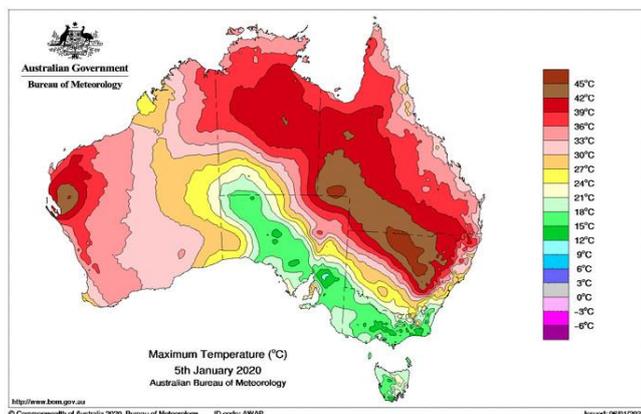
Sadly, the problems for the koala, and many other forest species, do not end with the fires. The animals that managed to survive by fleeing or going underground, return to these devastated areas to find their habitats no longer have the resources to support them.<sup>18</sup> The mega-fires of 2019-20 had a devastating effect on koala populations – particularly in localised areas most severely affected by the fires.<sup>7</sup>

The tragic result is that the koala as a species may be functionally extinct – that is no longer be genetically viable – in many areas.<sup>19</sup>

Experts believe that the fires will inevitably result in further declines in koala populations in the future.<sup>20</sup>

**“Climate change is happening now, and we are seeing the effects of it.”<sup>16</sup>**

Fires are becoming more intense and more frequent. The Australian megafires of 2019-20 joined a long list that have raged across the planet – in Greece, California, and the Amazon.<sup>19</sup> These are the clearest indication yet that Climate Change is driving fire activity.<sup>16</sup>



**“Warming is projected to continue through the 21<sup>st</sup> Century.”<sup>21</sup>**

The Earth’s climate is changing. Since the start of the Industrial Revolution global concentrations of CO<sub>2</sub> have increased from 280 parts per million (ppm) to over 415 ppm today.<sup>22</sup>

Human activities are estimated to have already caused a 1.0°C rise in of global temperatures above pre-industrial levels and global warming is likely to

reach 1.5°C between 2030 and 2052 if emissions continue at the current rates.<sup>23</sup>

High temperatures and drought and more frequent wildfires are all linked to Climate Change and these are destroying ecosystems around the world.<sup>16</sup> But we should not be surprised by such events. Humanity was forewarned of the consequences of its activities and the effects of a warming atmosphere.

In 2012 The Intergovernmental Panel on Climate Change (IPCC) stated that the observed and projected changes in some regions of Australia due to Climate Change will include increasing dryness, the occurrence of high-impact drought events due to substantial reductions in rainfall and an increased frequency and intensity of fires.<sup>15</sup> One of the key risks identified by the IPCC is the increased damage to ecosystems due to wildfires in Southern Australia.<sup>21</sup>

**“Australia is one of the highest per capita CO<sub>2</sub> emitters in the world.”<sup>24</sup>**

Australia accounts for 1.3% of global emissions based on carbon dioxide released from within the country. But Australia is also the world’s largest coal exporter and one of the world’s largest natural gas (LNG) exporters. Consequently, Australia’s global footprint is very significant – contributing nearly 5% of the world’s emissions.<sup>24</sup> Australia is now suffering the devastating consequences of its own greenhouse gas emissions.



“Wildfires have turned southeast Australia into a charred apocalyptic nightmare and threaten to wipe out entire species of animal.”<sup>25</sup>

*DSM*

## REFERENCES:

- 1 Bunyan.R (2019)  
*Koalas were already on the brink in Australia. Bushfires have killed 1000 in 2 months experts say.*  
TIME (26/11/2019)
- 2 McCarthy.C (2006)  
*The Road*  
Picard
- 3 Eliot.T (1954)  
*The Hollow Men in Selected Poems*  
Faber and Faber Ltd
- 4 BBC (2019)  
*Koala seen in rescue from Australian bushfire dies.*  
BBC News (29/11/19)
- 5 Dickman.C (2020)  
*A statement about the 480 million animals killed in NSW bushfires since September.*  
The University of Sydney (03/01/20)
- 6 Johnson.C, De Gabriel.J and Moore.B (2009)  
*Koalas and Climate Change*  
The IUCN
- 7 Woinarski J & Burbidge A. (2020)  
*Phascolarctos cinereus (amended version of 2016 assessment).*  
*The IUCN Red List of Threatened Species 2020:*  
e.T16892A166496779.
- 8 McAlpine, C., Melzer, A., Lunney, D., Foley, B., Adams-Hosking, C., Lawler, I., Whisson, D., Phillips, S., Kavanagh, R., Baxter, G., Gordon, G., Ellis, B., de Villiers, D., Walter, M., Molsher, R., Todd, C., Moore, B., Menkhorst, P., Close, R., Phalen, D. and Rhodes, J. (2012)  
*Conserving Koalas in the 21st century: synthesising the dynamics of Australia's Koala populations.*  
[http://aceas.org.au/mcalpine\\_final\\_report.pdf](http://aceas.org.au/mcalpine_final_report.pdf).
- 9 Tremain.J (2019)  
*In - Koala factcheck: Have Australian bushfires put survival of species at stake?*  
The Guardian (26/11/19)
- 10 Zhou.N (2019)  
*Koala factcheck: Have Australian bushfires put survival of species at stake?*  
The Guardian (26/11/19)
- 11 Le Page (2019)  
*No, koalas are not "functional extinct", but they are in trouble.*  
New Scientist (25/11/2019)
- 12...SBS News (2020)  
*The numbers behind Australia's catastrophic bushfire season.*  
SBS News. (05/01/20)
- 13 Tiernan, Finbar; O'Mallon, Eamonn (2020)  
*Australia's 2019-20 bushfire season*  
*The Canberra Times*. (10/01/2020)
- 14 Burton. J (2020)  
*It was a line of fire coming at us': South West firefighters return home*  
*Busselton-Dunsborough Mail*. (07/02/20).
- 15 IPCC (2012)  
*Managing the risks of extreme events and disasters to advance climate change adaptation.*  
Intergovernmental Panel on Climate Change. Cambridge University Press
- 16 Brown.M and Larson.C (2020)  
*Fires set stage for irreversible forest losses in Australia*  
The Associated Press (18/01/2020)
- 17 Agence France Presse (2020)  
*Makeshift koala hospital in Australia scrambles to save animals hurt in bushfires.*  
Science Alert (15/01/20)
- 18 Dickman.C (2020)  
*More than one billion animals killed in Australian bushfires.*  
The University of Sydney (08/01/20)
- 19...Chang.C (2020)  
*How the 2019 Australian bushfire season compares to other fire disasters.*  
Wentworth Report (08/01/2020)
- 20 Australian Associated Press (2019)  
*NSW fires so destructive thousands of koala bodies may never be found, ecologist says.*  
The Guardian (09/12/19)
- 21 IPCC (2014)  
*Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional aspects.*  
Intergovernmental Panel on Climate Change. Cambridge University Press.
- 22 Earths CO2 (2020)  
*The worlds atmospheric CO2.*  
<https://www.co2.earth/earths-co2-main-page>  
Viewed:29/03/2020

23 IPCC (2018)

*Global warming of 1.5°C – Summary for Policymakers.*

Intergovernmental Panel on Climate Change. Cambridge University Press.

24 Yanguas Parra. P, Hare.B, Fuentes Hutfilter.U, and Roming.N (2019)

*Evaluating the significance of Australia's global fossil fuel carbon footprint*

Climate Analytics for the Australian Conservation Foundation (ACF)

25 Newburger.E (2020)

*Australia fires kill half a billion animals as crisis mounts.*

CNBC (07/01/2020)

26...Zhou.N (2019)

*Australia's environment minister says up to 30% of koalas killed in NSW mid-north coast fires.*

The Guardian – (27/12/19)

27 Cox.L (2020)

*A billion animals: some of the species most at risk from Australia's bushfire crisis.*

The Guardian (13/01/20)

28 Faehrmann.C (2019)

*In - NSW fires so destructive thousands of koala bodies may never be found, ecologist says.*

The Guardian (09/12/19)

29 Breshears.D, Field.J, Law.D, Villegas.J, Allen.C, Cobb.N, and Bradford.J. (2019)

*Rapid broad-scale ecosystem changes and their consequences for biodiversity*

*In Biodiversity and climate change (Ed. Lovejoy.T and Hannah.L)*

Yale University Press.

30 Hannah.L (2012)

*Are a million species at risk?*

*In - Saving a million species. (Ed Hannah.L)*

Island Press.