

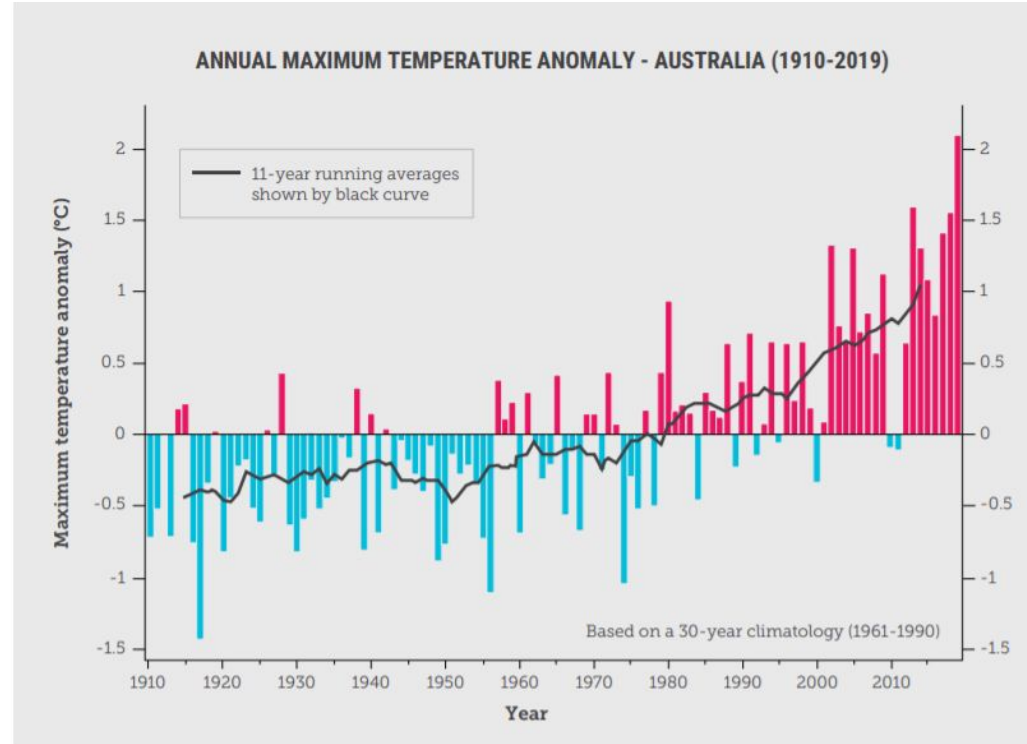
A large bushfire burning in a forest at night, with a firefighter visible in the foreground.

Australian Bushfires 2019-2020 “Black Summer”

Ece Topdemir 21801918
Berat Atmaca 21801680
Idil Bayar 21603481

Overview of the disaster

- 2019 June-2020 May
- Preconditions
 - warmest year on record
 - extremely reduced rainfall
 - Forest Fire Danger Index (FFDI) reached the highest value



AUSTRALIAN RAINFALL DECILES - JANUARY 2018 TO DECEMBER 2019

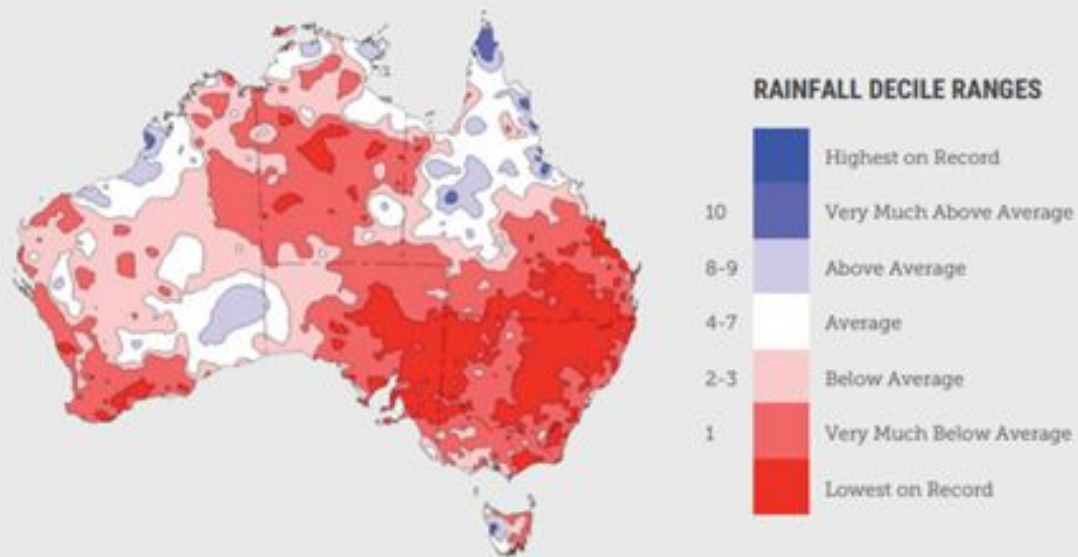
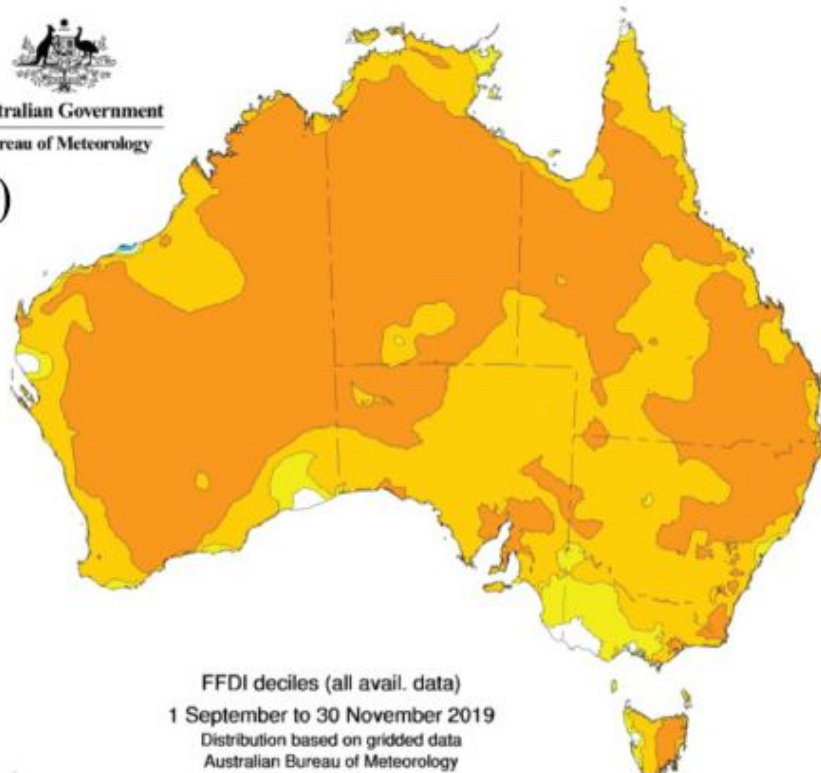


Figure 3: Australian rainfall deciles – 1 January 2018 to 31 December 2019. Source: BoM (2020f).

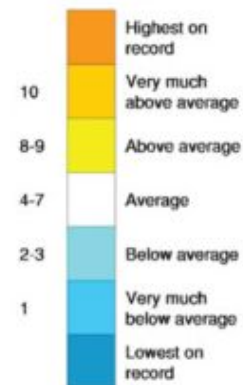


Australian Government
Bureau of Meteorology

a)



FFDI decile ranges



FFDI deciles (all avail. data)
1 September to 30 November 2019
Distribution based on gridded data
Australian Bureau of Meteorology

19 million hectares

- were burned in total of all states
- approximately the same are as the country Syria

>3,000

- houses were lost
-

33

- people lost their lives in total
-

Impact on wildlife

- Over 1 billion animals were killed
- However, this estimation only includes mammals, birds and reptiles; and doesn't include insects, frogs or others.

327 threatened species of plants and animals have at least ten percent of their range (the range in which they are known to occur) in areas that were burned by the bushfires. These species include:

	272 plants
	16 mammals
	14 frogs
	9 birds
	7 reptiles
	4 insects
	4 fish
	1 spiders

$\frac{1}{3}$ of Kangaroo Island was burnt

- 50,000 koalas were killed
- $\frac{1}{4}$ of the beehives of the honeybees were destroyed
- > 10,000 farm animals were killed



Impact on Air Quality

- between 650 million - 1.2 billion tonnes of CO_2 was released into the atmosphere
 - = worldwide commercial aircraft's annual emissions
 - > 12 times worse than hazardous threshold level
 - increases in respiratory & cardiovascular diseases
-

Economic Impact

- Tourism sector lost > \$ 4.5 billion
 - 10-20% drop in international tourists
 - Losses were \$1.3 billion according to the insurance claims
 - Smoke over Sydney, cost the city \$12-50 million every day
-



Precautions

Fire prevention strategies fall into the following four main categories.

- **Land Management**
- **Building Management**
- **Community Education**
- **Fire Danger Warnings**
- **Equipments and Paid Personnel**

Disaster Management

- Emergency strategy rethink
- New laws
- National disaster recovery agency



2020 AUSTRALIAN BUSHFIRE CRISIS

What's happening, and how
you can take action.

“It’s important to leave a legacy from this tragic event over the summer, to make sure we learn the lessons and to build on that, to build a more resilient Australia”

-David Littleproud



- Traditional Owners
- Indigenous Knowledge
- Backburning
- Disaster Resilience

Technology in Emergency Management Cycle:

- Portable Furnaces
- Drones
- Facial Recognition Software

Emergency Management Cycle





Domestic Response:

- New South Wales
- Commonwealth
- Military
- Community Organisations

International Response



Annie the koala



Frankie the koala

Thousands are involved in fighting the fires



3,000	army, navy & air force reservists
3,700	firefighters & support crew on the ground
440	emergency personnel in the tent city at Swan Reach, Victoria
240 +	firefighting personnel from the US, Canada and New Zealand

What was right?

- Many people were involved in the battle



What was right?

- More than 500 aircrafts available
- More than 750 “heavy plant” equipment on the ground
- \$14m to leasing firefighting aircraft from overseas



How helicopters are used to fight fires



Snorkel allowing pilot to collect water from a lake, reservoir or tank while hovering

Belly tank containing hundreds of litres of water

Helicopter can fly low to release water onto fires with great precision and force

Source: National Aerial Firefighting Centre, image Getty

BBC

Aircraft have been key to tackling the flames

Some of the planes and helicopters in use are:

DC-10 Very Large airtanker

Role: Firebombing

44,000 litre tank



Coulson B737 airtanker

Role: Firebombing - drops foam, gel or fire retardant solutions

15,142 litre tank



Coulson C130Q airtanker

Role: Firebombing

15,450 litre tank



Erickson S64E air crane

Role: Firebombing

Snorkel can "hover fill" its 7,560 litre tank with water



Bell 212

Roles: Firebombing, transporting fire crew

Rappel equipment

1,475 litre belly tank



Eurocopter AS365N2 Dauphin

Roles: Firebombing, transporting fire crew

100m winch

1,025 litre bucket



MBB/Kawasaki BK 117

Roles: Firebombing, transporting fire crew

75m winch

900 litre bucket



BBC

What was wrong?

- Dependence on volunteer firefighters
- Late response
- Failure of climate change management

<https://www.bbc.com/news/av/world-australia-50974259>



Lessons Learned

- Reconsideration of national nature laws
- Cutting domestic greenhouse gas emissions
- Eliminating fossil fuel exports



Australia:

- has the worst mammal extinction rate
- is one of the biggest air polluters

IE 482 CLASS

MUĞLA'DAKİ AĞAÇLANDIRMA
ÇALIŞMALARINA
DESTEK OLMAK İÇİN
MUĞLA AĞAÇLANDIRMA SAHALARI'NA

15

ADET FİDAN BAĞIŞINDA BULUNDUNUZ.

GELECEK KUŞAKLARA DAHA
YAŞANABİLİR BİR DÜNYA BIRAKMAK
ÜZERE YAPILAN BU KATKIYA VESİLE
OLDUĞUNUZ İÇİN TEŞEKKÜR EDERİZ.

Deniz Ataç
Yönetim Kurulu Başkanı



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