

5510-Projecxt

T13_Wed_kable

5/17/2021

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0.1 Fire Detections and Land Type in Bushfire Season

According to the information provided by the department of agriculture of Australian, in the figure 1 below can be seen the number of the fire detections by year. The number of cases registered by the season 2019/2020 were 103.627. The extent of land affected by the bushfires will be detailed i the next part of the report. something interesting to remark it that even though the season 2019/2020 seemed very hard for the country, in reality this number of cases is not compared with the number of observation for the same season in 2006/2007 and 2002/2003 that hold 3'327484 and 2'974.094 cases respectively in Victoria.

Table 1: Total detections by year

Years	Total Counts
2006/2007	3327484
2002/2003	2974094
2013/2014	1016454
2008/2009	784110
2012/2013	736251
2010/2011	685265
2005/2006	557492
2018/2019	545723
2014/2015	523801
2009/2010	487338
2017/2018	469092
2004/2005	461358
2003/2004	446818
2011/2012	416408
2007/2008	381934
2016/2017	377902
2015/2016	315854
2019/2020	103627

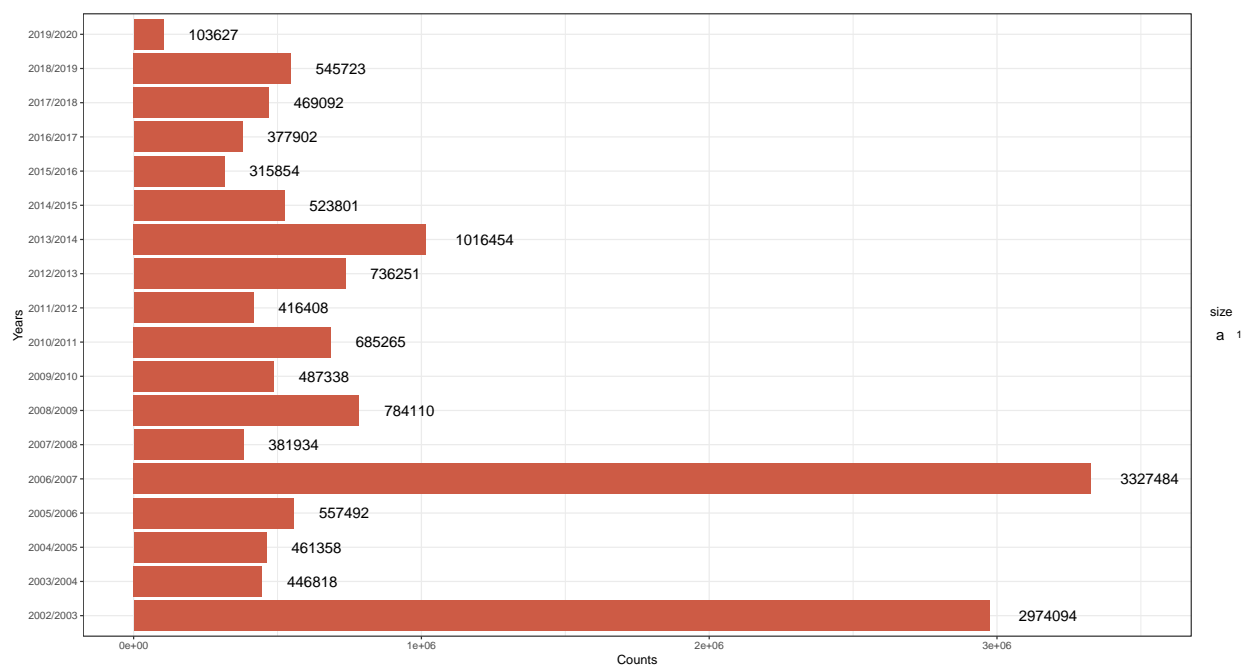


Figure 1: Number of Observations by Year

0.1.1 Percentage of Affected Land by State

Taking in detail the number of the observations by state in the season 2019/2020, we can see that the states with major affectation of the forested land were Australian Capital Territory, Victoria and New south Wales with 92.78%, 92.02% and 90.15% respectively. See Figure 2. The territory with the least affectation was Northern Territory (0%), followed by South Australia with 43.68%.



Figure 2: Affection by State

0.1.2 Percentage of Forested Land Affected in Victoria by Type

According to the classification of the land in Victoria, Multiple-use Public Forest got affected by 29%, whereas the Nature Conservation Reserve had 15% of burnt land. similarly the Unresolved tenure land lost 13% of it's extent by the fires. In the case of private land, around 6% was consumed by fires. See Figure 3.

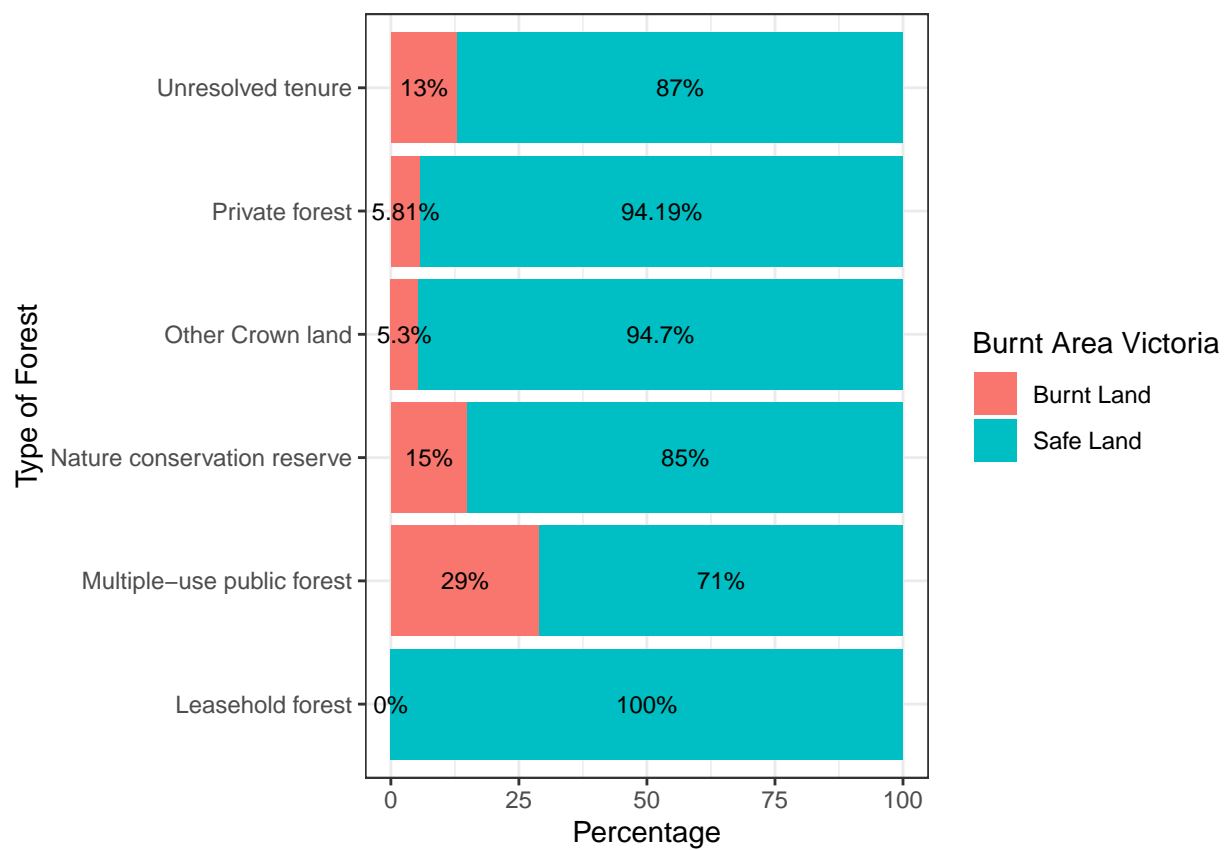


Figure 3: Land Type affected in Victoria

0.2 Melbourne Air Quality Index

The bushfires season had a huge negative impact in the air quality in Victoria, as an example we took data from the Environment Protection Authority in Australia which recorder the PM2.5 (Fine Particulate Matter 2.5) which is an air pollutant concern for the community's health, the higher the rate the worse impact for individuals. In the figure 4 below can be seen the levels for the previous four years, with clearly a huge peak in January 2020.

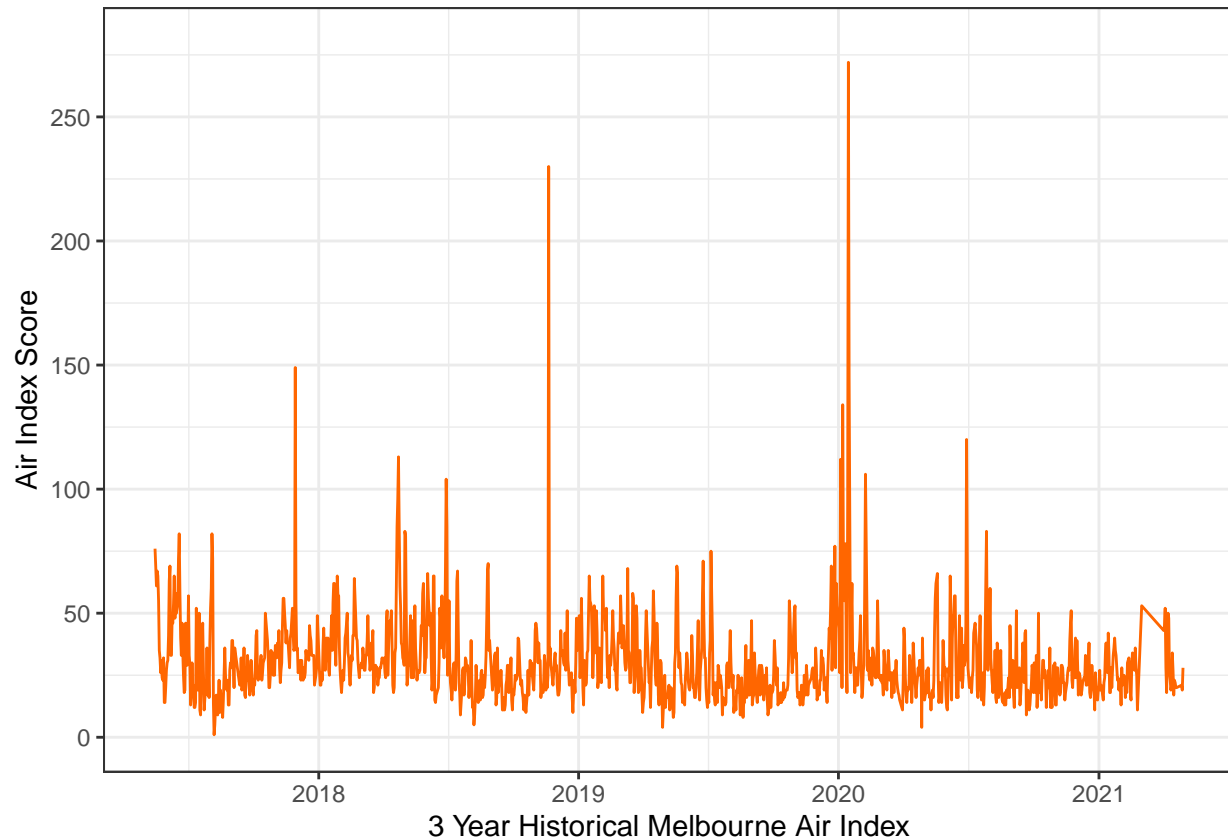


Figure 4: Melbourne Air Quality

The figure below shows the classification of the air quality index, this source will give a clearer idea of the readings of the bushfire season and for previous levels.

Finally, having a closer look to the most affected months from January to April, we can see that on 15th January the levels recorded was 272, clearly very unhealthy, the population needed to be indoors even more for those with respiratory affections. Certainly the first two weeks were highly affected by the pollution and the fires, all this happened mainly in the first two weeks of the year, leaving highly affected the fauna and flora.

AQI	Air Pollution Level	Health Implications	Cautionary Statement (for PM2.5)
0 - 50	Good	Air quality is considered satisfactory, and air pollution poses little or no risk	None
51 -100	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
101-150	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
151-200	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion
201-300	Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
300+	Hazardous	Health alert: everyone may experience more serious health effects	Everyone should avoid all outdoor exertion

Figure 5: Air Quality Levels

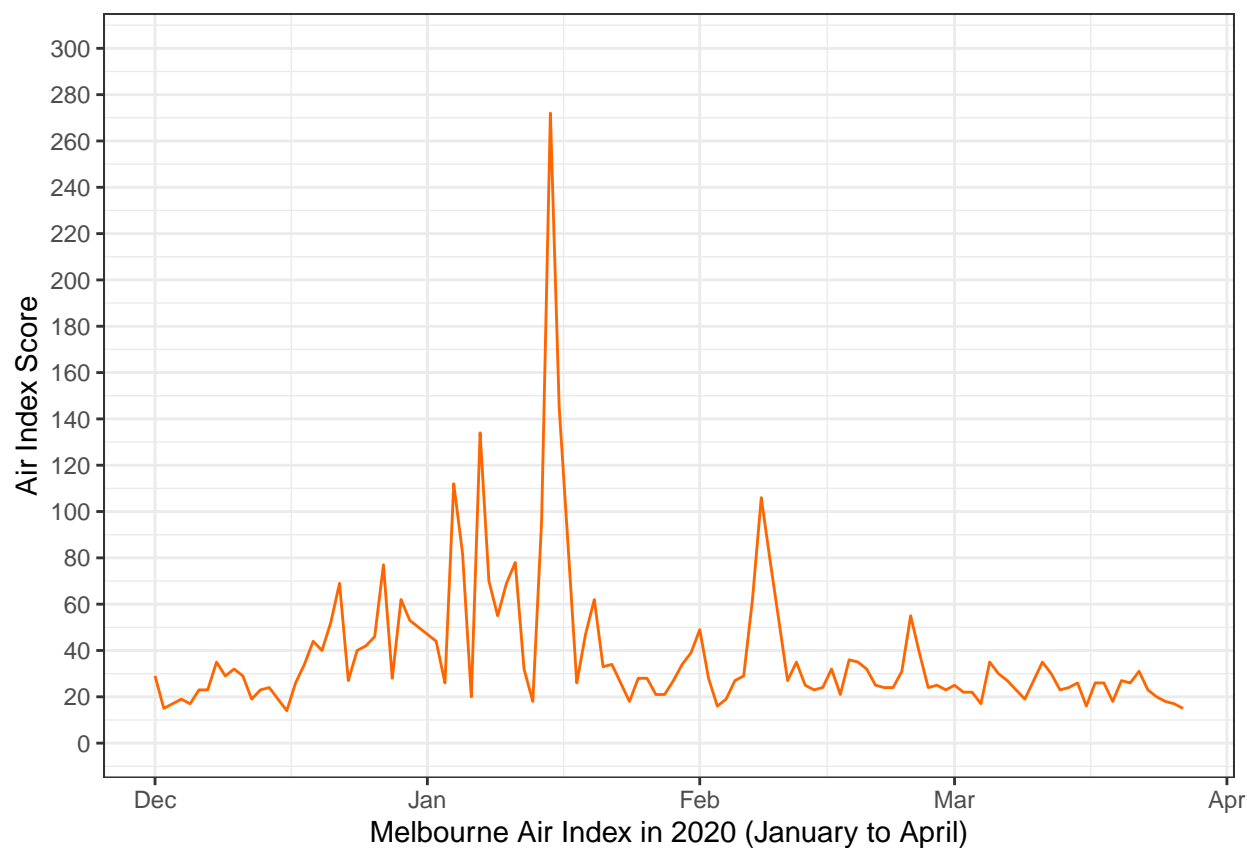


Figure 6: Bushfire Season 2019/2020 Air Quality in Melbourne