

# Rixs Creek Mine – Continuation Project

Dr Bob Vickers

GP

Singleton Resident

Doctors For The Environment Australia



 **Doctors for the Environment Australia**  
www.dea.org.au

**Doctors for the Environment, Australia** (DEA) is a voluntary, doctor's organisation, formed in 2001, with members in all States and Territories. The aim of the organisation is to inform and educate the public, the medical profession and policy makers about the relationships between health and the environment. Our priority issue at the present time is the health effects of climate change. DEA is a member of the International Society of Doctors for the Environment.

☐ **Scientific committee:**

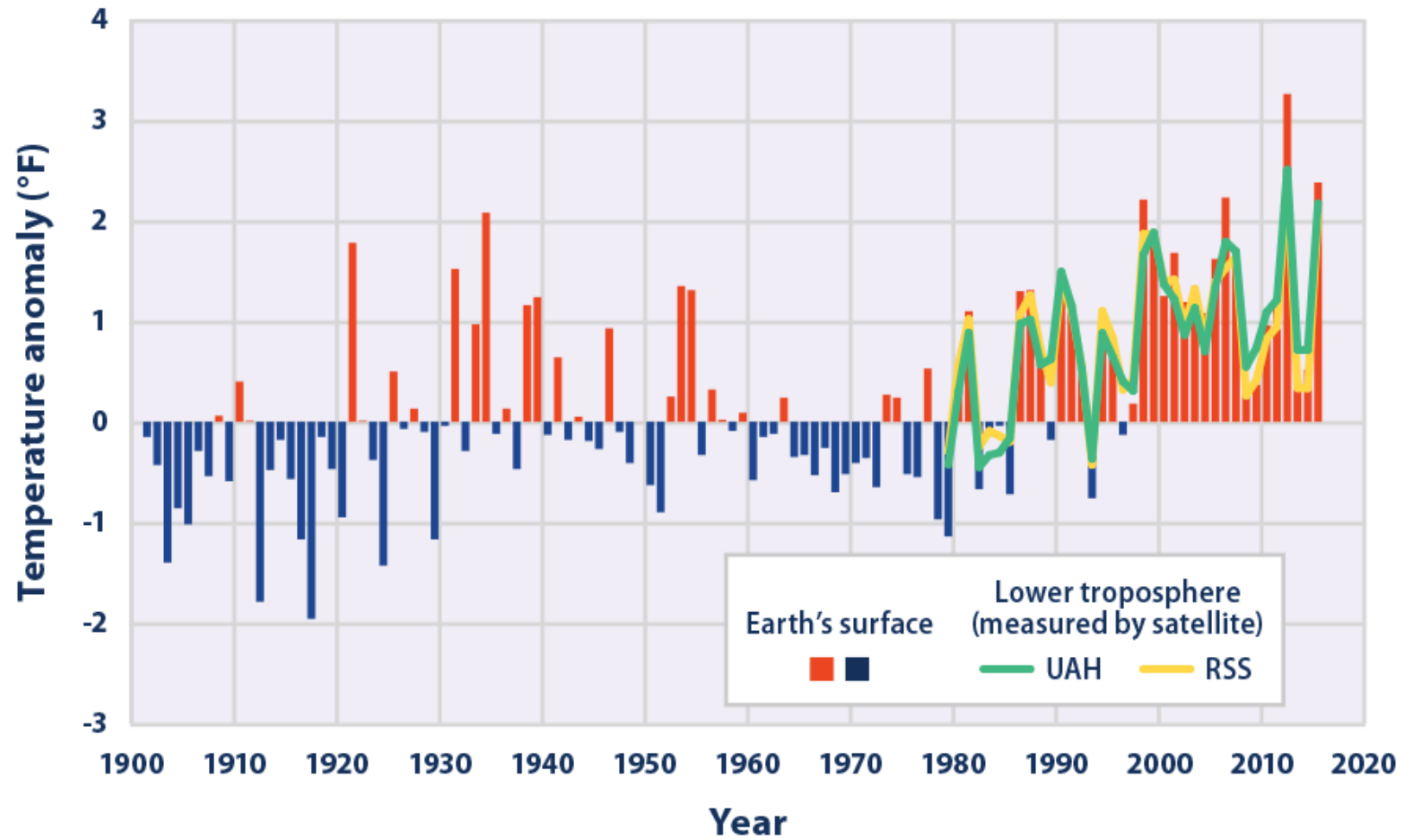
Prof. Stephen Boyden AM  
Prof. Peter Doherty AC  
Prof. Bob Douglas AO  
Prof. Frank Fenner AC  
Prof. Michael Kidd AM  
Prof. Steve Leader AO  
Prof. Ian Lowe AO  
Prof. Tony Mc Michael  
Prof. Peter Newman  
Sir Gustav Nossal AC  
Prof. Hugh Possingham  
Prof. Lawrie Powell AC  
Prof. Fiona Stanley AC  
Norman Swan  
Prof. David Yencken AO



# Climate Change




# Climate Change



# Climate Change

- ▶ In modelled 1.5°C pathways with limited or no overshoot, the use of CCS would allow the electricity generation share of gas to be approximately 8% (3-11% interquartile range) of global electricity in 2050, **while the use of coal shows a steep reduction in all pathways and would be reduced to close to 0%** (0-2% interquartile range) of electricity (*high confidence*).

# Climate Change

 Australian Government  
Bureau of Meteorology

HOME | ABOUT | MEDIA | CONTACTS | Enter search

NSW | VIC | QLD | WA | SA | TAS | ACT | NT | A

• Bureau home • Climate • The Recent Climate • Regular statements

Monday 1 April 2019 — Monthly Summary for Australia — Product Code IDCKGC1A00

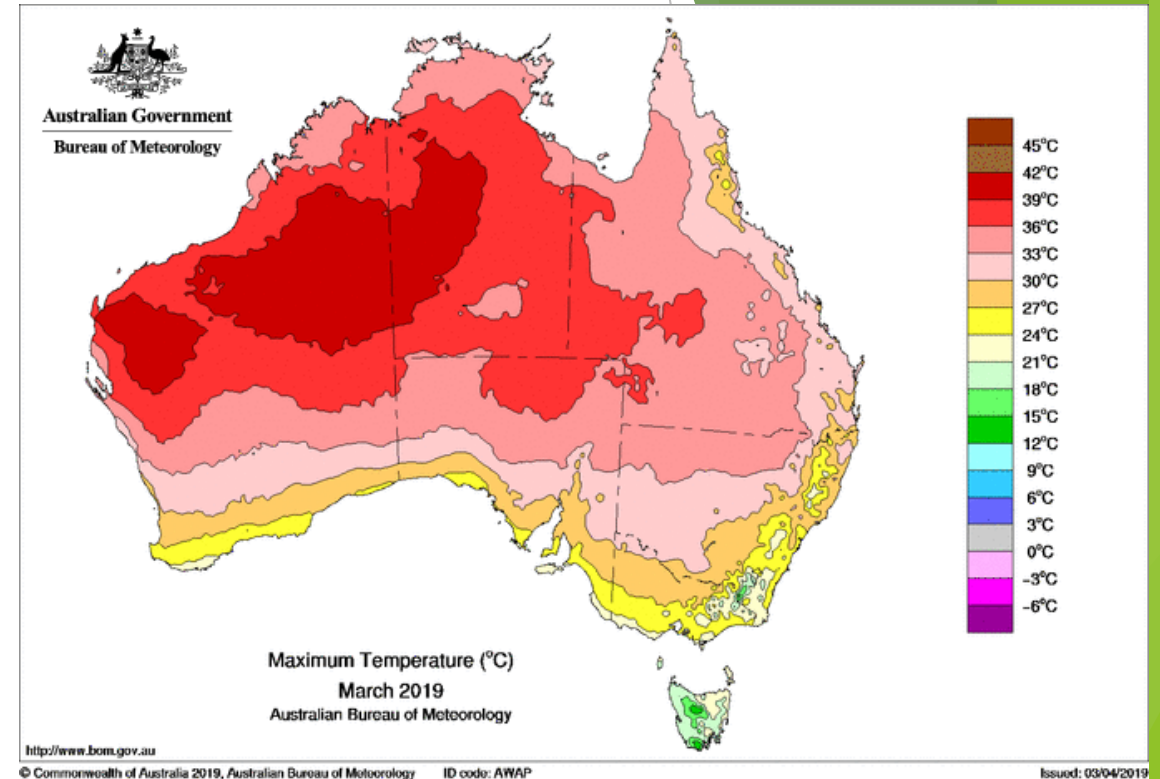
## Australia in March 2019

[Temperatures](#) [Rainfall](#) [Extremes](#) [Important notes](#) [the top](#)

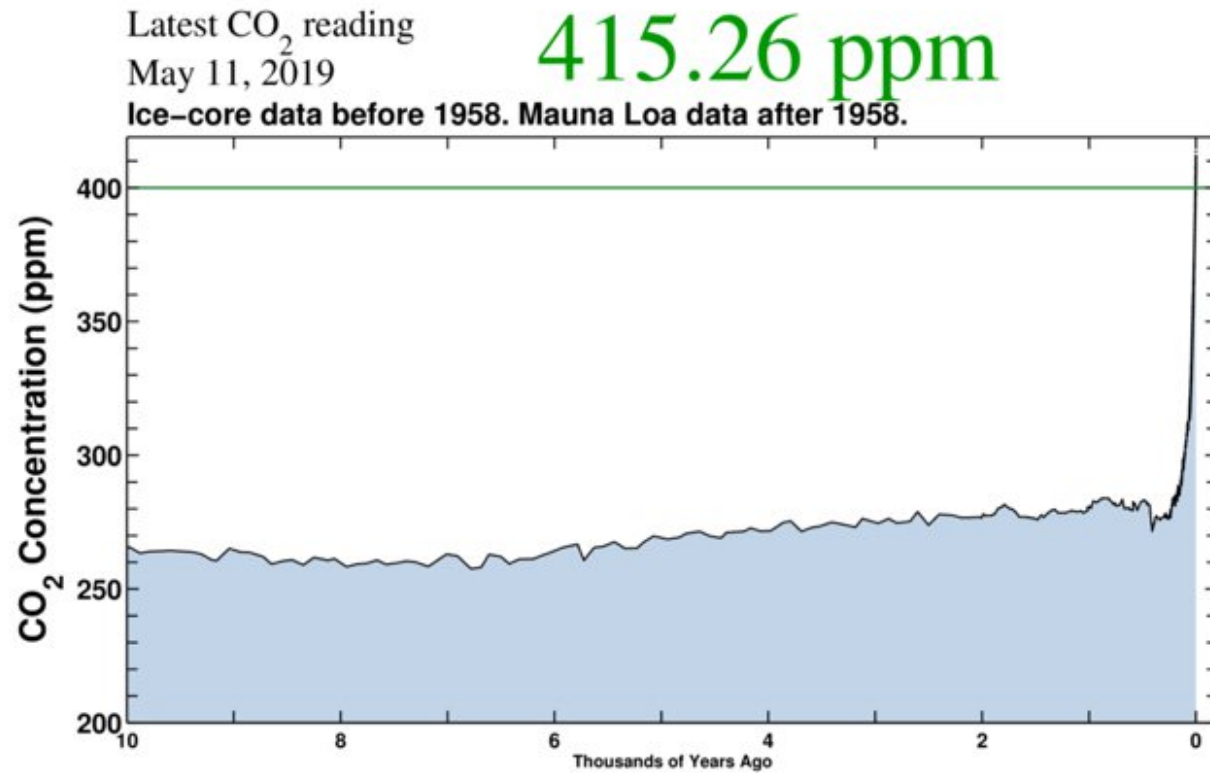
### In brief

- Warmest March on record for Australia
- Both mean maximum and minimum temperature above average for nearly all of the country, but days near average in northern Queensland associated with severe tropical cyclone *Trevor*, and along parts of the south coast following a cold end to the month
- Warmest March on record for Western Australia and the Northern Territory
- Amongst the six warmest Marches on record for New South Wales, Queensland, South Australia
- Rainfall for the month was below to very much below average in a wide band from the Kimberley and Top End down to the top of the Great Australian Bight, across southern South Australia and Victoria, in northern and eastern Tasmania, and pockets along the west coast of Western Australia
- Two severe tropical cyclones contributed to above to very much above average rainfall in far northern Queensland, the southern Gulf of Carpentaria coast, western to central Queensland and parts of the south and southeast of the State, the east of the Northern Territory, northeast South Australia, and part of the Pilbara coast
- A wet end to the month brought totals to above average for eastern New South Wales, far eastern Victoria, and southeast Queensland

**Climate**  
Outlooks  
Reports & summaries  
☐ Drought  
☐ Monthly weather review  
Weather & climate data  
Long-term temperature data  
Data services  
Maps – recent conditions  
Maps – average conditions  
Climate change  
Extremes and records  
About Australian climate

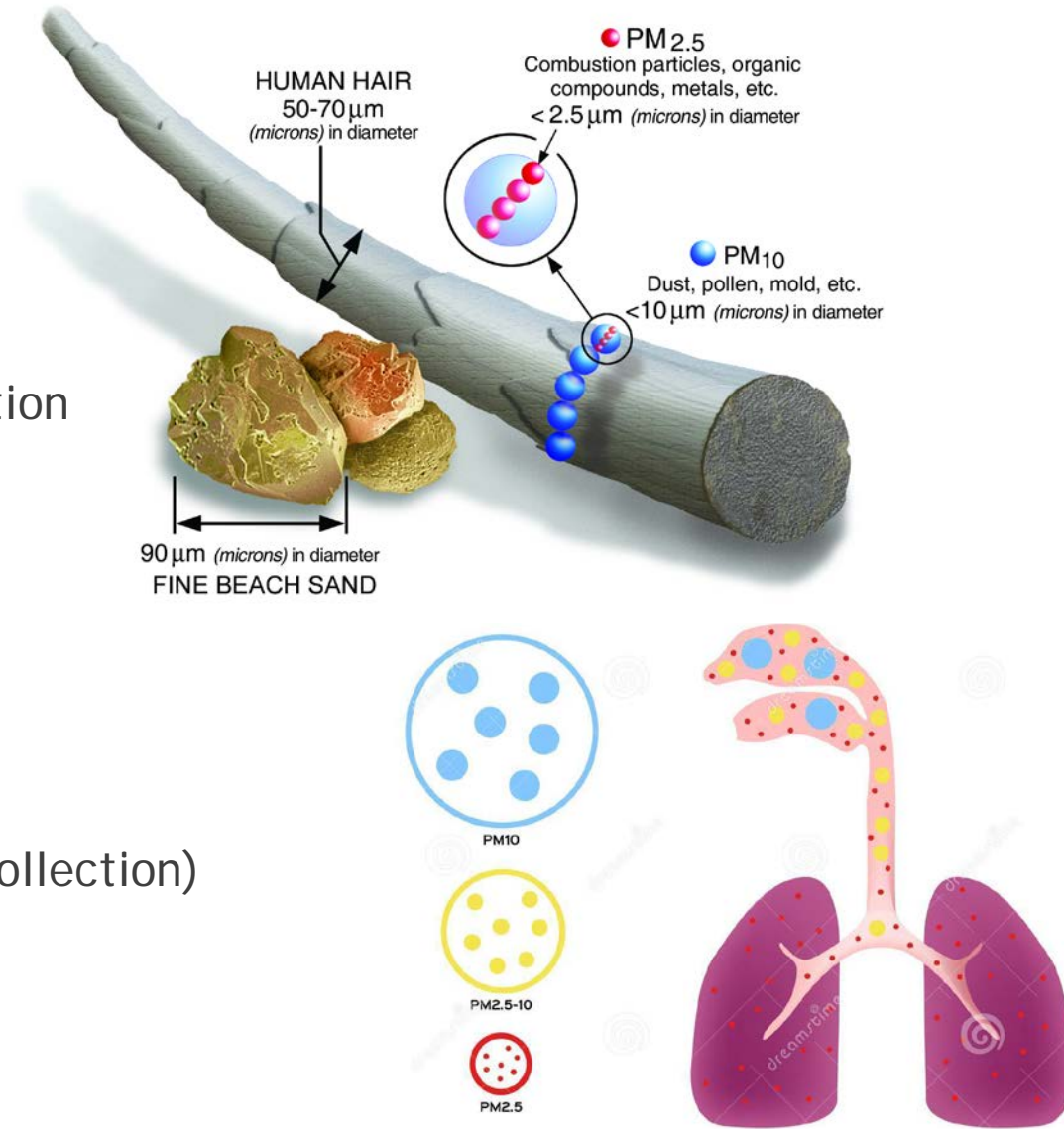


# Climate Change



# Air Quality

- ▶ Eye, nose and throat irritation
- ▶ Shortness of breath
- ▶ Exacerbation of asthma
- ▶ High blood pressure
- ▶ Kidney disease
- ▶ Strokes
- ▶ Pulmonary oedema (fluid collection)
- ▶ Heart disease
- ▶ Low birth weight
- ▶ Type 2 diabetes





# Air Quality



# Blast Plumes

- ▶ Unpredictable and dangerous
- ▶ Nitrogen dioxide and other harmful chemicals
- ▶ Blast plumes at Mt Thorley has travelled 3km
- ▶ A QLD blast plume caused illness in workers 6km away

## Mine blast gone wrong spews toxic cloud

Joanne McCarthy



A toxic fume from a blast at the Mount Arthur mine in the Upper Hunter turned the sky bright orange and prompted demands for a much stronger response from environmental regulators.

Ammonium nitrate and fuel oil were detonated at the mine near Muswellbrook on Wednesday afternoon, causing poisonous fumes containing nitrogen dioxide to spread several kilometres from the site.



The sky above Mount Arthur mine in Muswellbrook glows orange after a blast that went wrong. Photo:

Tu  
in  
yo  
pr  
1/

HUF

Prison  
In Ser:

Houdi  
Crowd

# Air Quality

## Days above benchmark concentrations

There were 29 days over the PM<sub>10</sub> benchmark in winter 2018, with sites closer to mines recording the highest number of days. There were two days over the PM<sub>2.5</sub> benchmark in winter 2018.

**Table 1** Number of days above the relevant national benchmarks – winter 2018

Station type*	Station	PM <sub>10</sub> daily [50 µg/m <sup>3</sup> benchmark]	PM <sub>2.5</sub> daily [25 µg/m <sup>3</sup> benchmark]	SO <sub>2</sub> hourly [20 pphm benchmark]	SO <sub>2</sub> daily [8 pphm benchmark]	NO <sub>2</sub> hourly [12 pphm benchmark]
Population centre	Aberdeen	0	-	-	-	-
Population centre	Muswellbrook	4	2	0	0	0
Population centre	Singleton	3	0	0	0	0
Smaller community	Bulga	1	-	-	-	-
Smaller community	Camberwell	19	0	-	-	-
Smaller community	Jerrys Plains	0	-	-	-	-
Smaller community	Maison Dieu	9	-	-	-	-
Smaller community	Warkworth	1	-	-	-	-
Smaller community	Wybong	2	-	-	-	-
Diagnostic	Mount Thorley	15	-	-	-	-
Diagnostic	Muswellbrook NW	1	-	-	-	-
Diagnostic	Singleton NW	6	-	-	-	-
Background	Merriwa	1	-	-	-	-
Background	Singleton South	3	-	-	-	-

µg/m<sup>3</sup> = microgram per cubic metre and pphm = parts per hundred million by volume (i.e. parts of pollutant per hundred million parts of air)

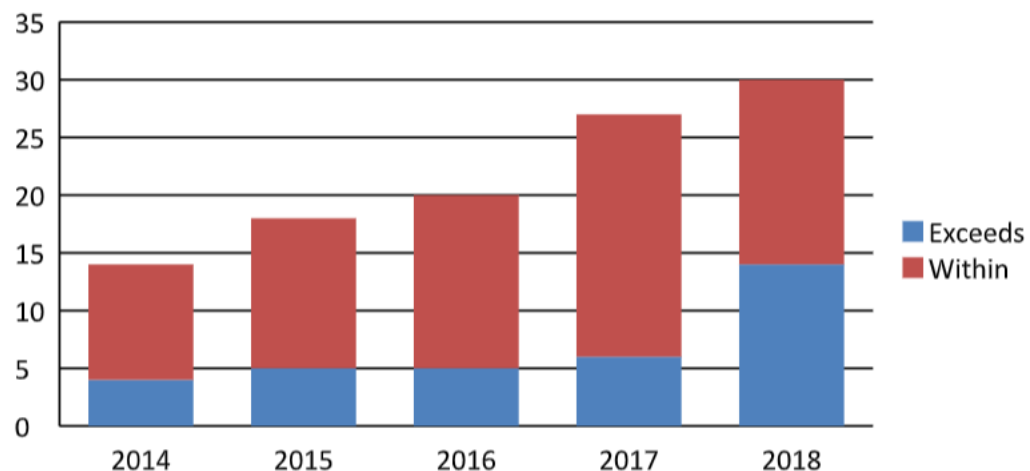
- = not monitored \* For explanation, refer to the end of the report Definitions: Upper Hunter monitoring station types

The WHO recommends targets of <20mcgm/m for PM10

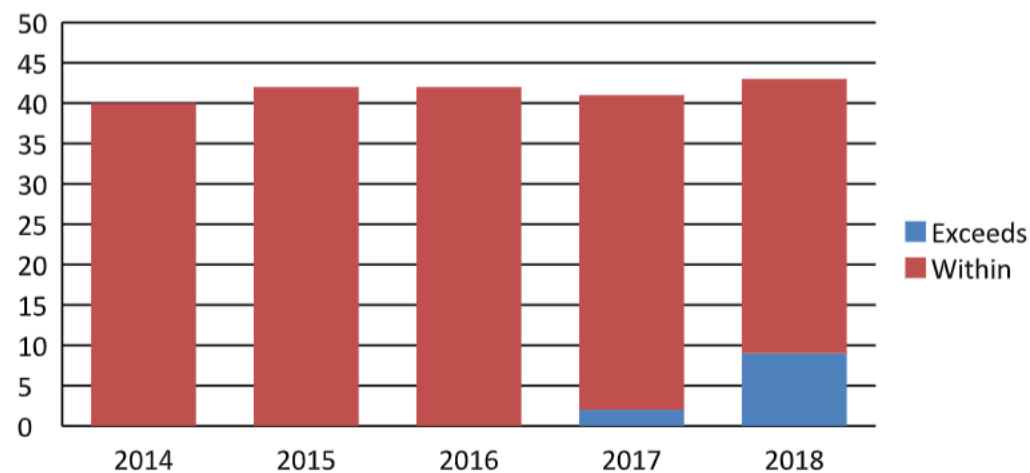
# Air Quality - 2018

Location	PM 2.5	PM 10
<b>Sydney Basin</b>		
Liverpool	10.1	
Chullora	8.6	
Richmond	8.1	
Paramatta North	9.2	
Prospect	8.5	
Campbelltown	8.4	
<b>Lower Hunter</b>		
Carrington	8.2	27.3
Mayfield	8.3	26.9
Beresfield	8.7	
<b>Upper Hunter</b>		
Muswellbrook	9.4	27.2
Singleton	8.1	
Singleton NW		26.9
Camberwell	8.4	31.3
Maison Dieu		27.9
Mt Thorley		29.1
Warkworth		26.4
<b>Rest of NSW</b>		
Wagga Wagga North	8.4	27.4
Tamworth	8.3	

## NSW locations within and exceeding the fine particle standard



## NSW locations exceeding the coarse particle standard.





# Air Quality

## Risks from air pollution to human health

### Effects on health in the Hunter 2007 ED respiratory presentations

Age group	location	n	Rate/100,000
0-14	Singleton	2026	13255
	Muswellbrook	1305	13368
	Rest of HNEAHS	41983	8806
	Sydney	114713	5981
65+	Singleton	306	5005
	Muswellbrook	235	5676
	Rest of HNEAHS	19869	5035
	Sydney	49868	3967

# Social Impacts

- ▶ 9000 workers drive into the region daily to work in coal mining industry
- ▶ DIDO workers create negative social and economic stress on the region<sup>1</sup>
- ▶ Significant growth in casualization of the workforce
- ▶ 82% of mining industry job advertisements on Seek.com were contractor companies
- ▶ Casual workers are paid on average 30% less than permanent workers
- ▶ Women who are employed casually have little financial protection through pregnancy
- ▶ Anecdotal reports permanent staff being made redundant before entitlements are available
- ▶ Anecdotal reports of population actively leaving town due to concerns around air quality and health risks (e.g. Dr Craig Barry)

1. Housing market dynamics in resource boom towns, Haslam McKenzie et al 2009

2. Impact of Fly-In Fly out/Drive-in Drive-out work practices on local government. Report for Australian Centre of Excellence for Local Government 2012

# Water Quality and Quantity

- ▶ Poor water quality negatively affects human health
- ▶ Food security is at risk with possible Hunter River cumulative drawdown
- ▶ A final void could create irreversible damage to our regions major water source.

# Conclusion - Oppose

- ▶ Climate change
- ▶ Air quality
- ▶ Social impacts
- ▶ Water quality and quantity
- ▶ Environmental risk