Centre for Conservation Geography
Strategic Tools and Conservation Innovation

PRELIMINARY ANALYSIS OF THE SPATIAL DISTRIBUTION OF COVID-19 RELATED EMPLOYMENT LOSS IN AUSTRALIA

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Executive Summary

This paper provides preliminary analysis of the likely spatial distribution of employment loss due to a range of measures put in place to control the spread of COVID-19. We provide conservative estimations of the scale of this employment loss across the country, while highlighting specific hotspots and regions most vulnerable to employment loss.

Key Findings:

1. COVID-19 related employment loss is predicted to impact on average 8-10% of the current workforce in most regions of Australia over the coming 12-18 month period.
2. Rates and numbers of COVID-19 related unemployed will vary significantly across the continent in part due to employment levels across different industrial sectors. Workers in the travel, food and accommodation, arts and recreational services and retail sectors are the most directly affected by business restrictions and border closures and are likely to be worst affected.
3. On average, around 6-7% of the workforce (and as much as 10% in some communities) are recently employed casual workers who will be ineligible for JobKeeper wage subsidies.
4. The number of unemployed people due to COVID-19 is expected to be highest in capital cities and large regional centres. This is generally proportionate to the size of the local workforce.
5. While capital cities are expected to experience the largest unemployment numbers, workers in several regional and rural areas, identified in this paper will be amongst the hardest hit.
6. Tourism dependent regions have the highest predicted rates of employment loss proportionate to their workforce (e.g. 17% Port Douglas, 16% Whitsundays, 14% Surfers Paradise, 14% South East Tasmania). These regions are particularly vulnerable to the economic impacts of COVID-19 due to high reliance on industries most impacted by COVID-19 restrictions and the high proportion of short-term casuals who work in tourism related sectors.
7. There is significant overlap between rural and remote areas predicted to experience above average employment loss and communities that are especially vulnerable to the economic impacts of COVID-19 due to high underlying rates of unemployment, less diverse local economies and/or the recent impacts of drought and bushfires.

Recommendations

8. Job creation in targeted regional and rural areas could provide a vital component of stimulus strategies addressing employment loss as a result of the COVID-19, and in particular for those workers who find themselves ineligible for the Jobseeker wage subsidy.
9. Conservation and land management stimulus may play a role in all regions facing significant rates or numbers of employment loss, but will be particularly valuable for regional, rural and remote, and those in the process of recovery from recent bushfires.

Background

Estimates of COVID-19 related job losses

The vital shutdown measures to stop the spread of COVID-19 are estimated to have left a million people unemployed overnight and around 2.6 million people accessing the Centrelink website in a single day [1]. Early commentators have predicted a total of between 1-2 million job losses across Australia due to the impacts of COVID-19 [1–3]. At least half of these job losses (670,000) are predicted to occur within the next three months [4]. The Treasury estimated in April that the unemployment rate will rise almost 5% to 10% in the June Quarter, while predicting that the $130 billion JobKeeper payment will avert an additional 5% unemployment [5].

The JobKeeper Wage Subsidy [1]

The JobKeeper wage subsidy passed through parliament on 8 April 2020 and is a key element of the Federal government's stimulus package designed to keep workers in jobs[6]. It is estimated that JobKeeper payments will be available to 6 million workers Australia wide whose jobs are at risk [6], however the final uptake may be somewhat lower. Some businesses will be ineligible due to the requirement of a 30-50%[1] fall in revenue[6], while others will fail or downsize despite the range of government support available. Other businesses may not utilise the JobKeeper subsidy due to broader economic uncertainties or cash flow issues[7].

There are more than 950,000 short term casual workers in Australia who are ineligible for this wage subsidy. More than 40% of them work in industries directly affected by COVID-19 closures[4]. This group of workers will be exceptionally vulnerable to employment loss despite government stimulus measures.[2]

As of the second week of April 2020, it seems possible that Australia may be charting a relatively positive course and averting some of the significant economic impacts of COVID-19. There is still the potential of a further spike in job loss in September 2020 at the end of the six-month duration for which the subsidy has been approved (if the JobKeeper program is not extended beyond its current end date).

Industries with greatest likelihood of job loss

While the impacts of COVID-19 will be felt across the economy, workers in the travel, food and accommodation, arts and recreational services, and retail sectors are the most directly affected by business restrictions and border closures, and stand to be impacted the worst [2]. Many of these industries have high rates of casual employment. Additionally, almost a quarter of food and accommodation workers and more than 10% of those in the retail trade, administration and support services, and arts and recreational services are estimated to be employed as short-term casual workers [4]. Regions with large workforces in these industries will face much greater employment losses as these casual workers will not be able to take advantage of the Jobkeeper wages subsidy designed to keep them at work. Regional tourism dependent communities have the most significant proportions of the workforce in these directly affected industries.

Method of Analysis

The results presented in this paper are intended as preliminary figures indicative of relative spatial distribution and scale of employment loss rather than predictions of actual numbers or rates of unemployment.
Layers of uncertainty exist regarding the duration and economic impact of current shutdown measures, and the success of the JobKeeper wage subsidies in reducing employment loss. These, and other limitations on the data available for analysis, impact the ability to accurately predict employment loss numbers. This uncertainty does not impact the relative distribution of employment presented in this paper.

We utilise two complementary models to provide a predictive range of COVID-19 related employment loss:

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1. The subsidy offers $750 a week to employers for each eligible individual to assist maintain their employment.
2. Casual workers less than 12 months with their current employers are not eligible for JobKeeper

1. Conservative estimates of the percentage employment loss per industry modelled over the next 12-18 months [2][3], calculated following the COVID-19 shutdown announcement but prior to government announcements of the JobKeeper subsidy (hereafter 'predicted employment loss'.)
2. Estimates of the number of short-term casual workers who will be ineligible for the Federal government's JobKeeper wage subsidy (hereafter 'Jobkeeper ineligible workers'.) These workers are the most vulnerable to job losses, both as a result of their casual status and their ineligibility for wage subsidies.

We also use three different geographical scales set by the Australian Bureau of Statistics to present our results (from largest to smallest): Statistical area 4 (SA4) for national maps and tables, Statistical Area 3 (SA3) for state based maps and tables, and Statistical area 2 (SA2) for regional maps[8].

Further information, a detailed methodology and data sources are provided in Appendix I.

3. We adapted job loss estimates per industry by the BankWest Curtin Economics Centre. BCEC modelled job-specific loss shares to ANZSIC 3-digit industries based upon applying direct, indirect, lower and medium exposure classifications. Potential increases in jobs within sub-sectors have also been factored in, including growth in essential services (health, utilities, social services) and industry sub-sectors that are seeing increased demand.

National distribution of COVID-19 related employment loss

COVID-19 related employment loss is predicted to impact at least 8-10% of the current workforce in most regions of Australia over the next 18 months, some of which is currently buffered by the JobKeeper payment scheduled to end in September 2020. Large swathes of regional and remote Australia face potential employment losses of 9-10% of their current workforce (see Figure 1, below). While a significant number of these workers may be able to access the JobKeeper wages subsidy, on average around 5-6%, and up to 10% of the workforce in some communities across Australia are short-term casual workers who will be ineligible for government wage subsidies.

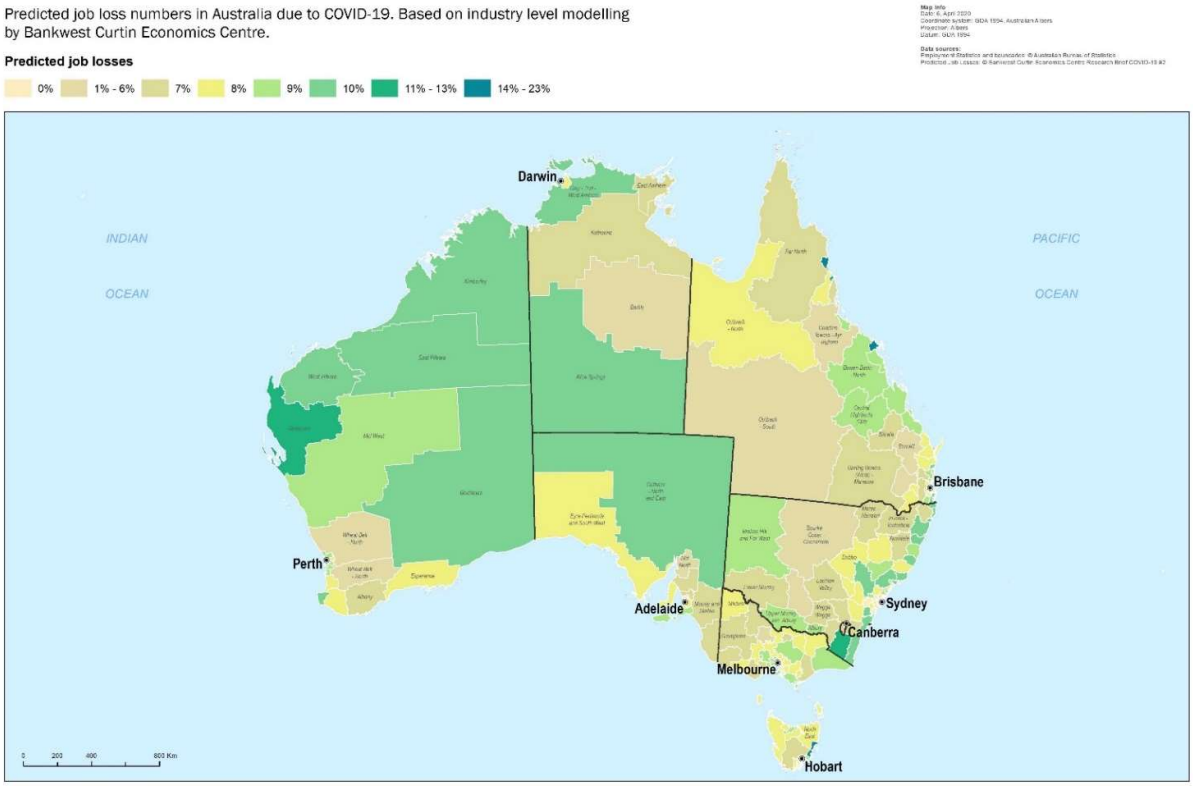


Figure 1: Predicted % employment loss per regions (Statistical areas- SA3) in Australia as a result of COVID-19 across Australia

Regions with large numbers of predicted employment losses are concentrated around capital cities and major population centres (see Figure 2). This is generally proportionate to the population density. Results show a clear trend of major employment loss in communities across Australia that have a strong tourist industry, for example, coastal regions of Queensland (Cairns, Townsville, Sunshine Coast and Gold Coast), New South Wales (South, Central and North Coast) and Western Australia (South Coast)(see Figure 1 & 2).

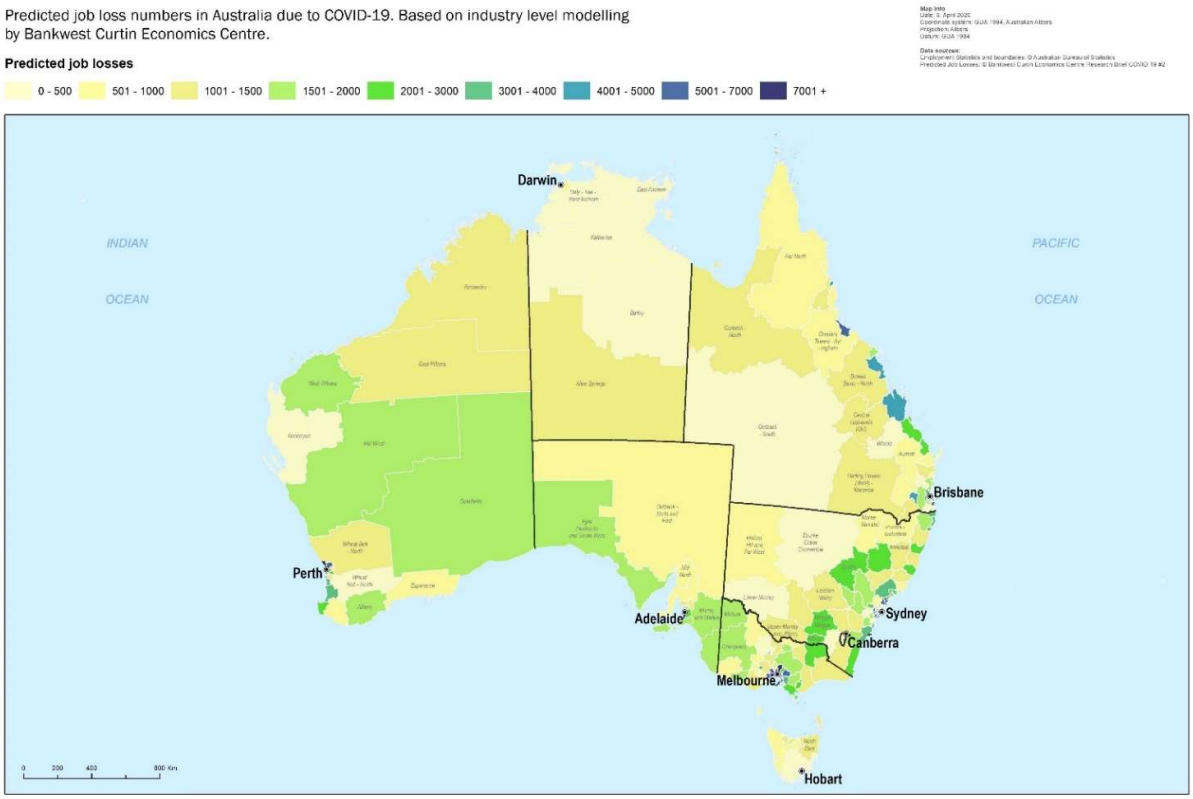


Figure 2: Predicted numbers of employment loss per region as a result of COVID-19 across Australia

Hot spots of employment loss in regional and rural Australia

Regional centres and tourist hotspots have the largest numbers of predicted employment loss outside of capital cities. These numbers range from the several thousand for less populated tourist regions such as Richmond-Tweed, to close to 28,000 workers in the Gold Coast region.

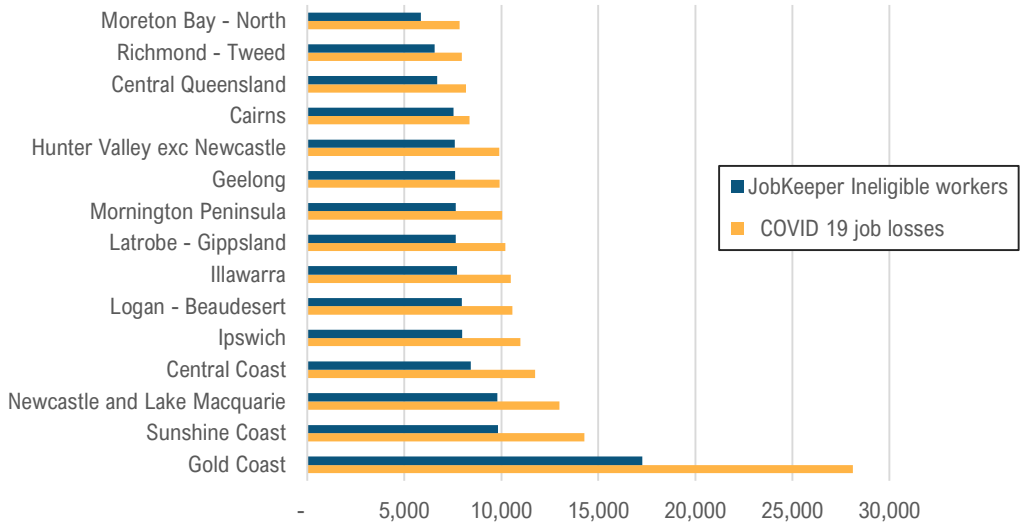
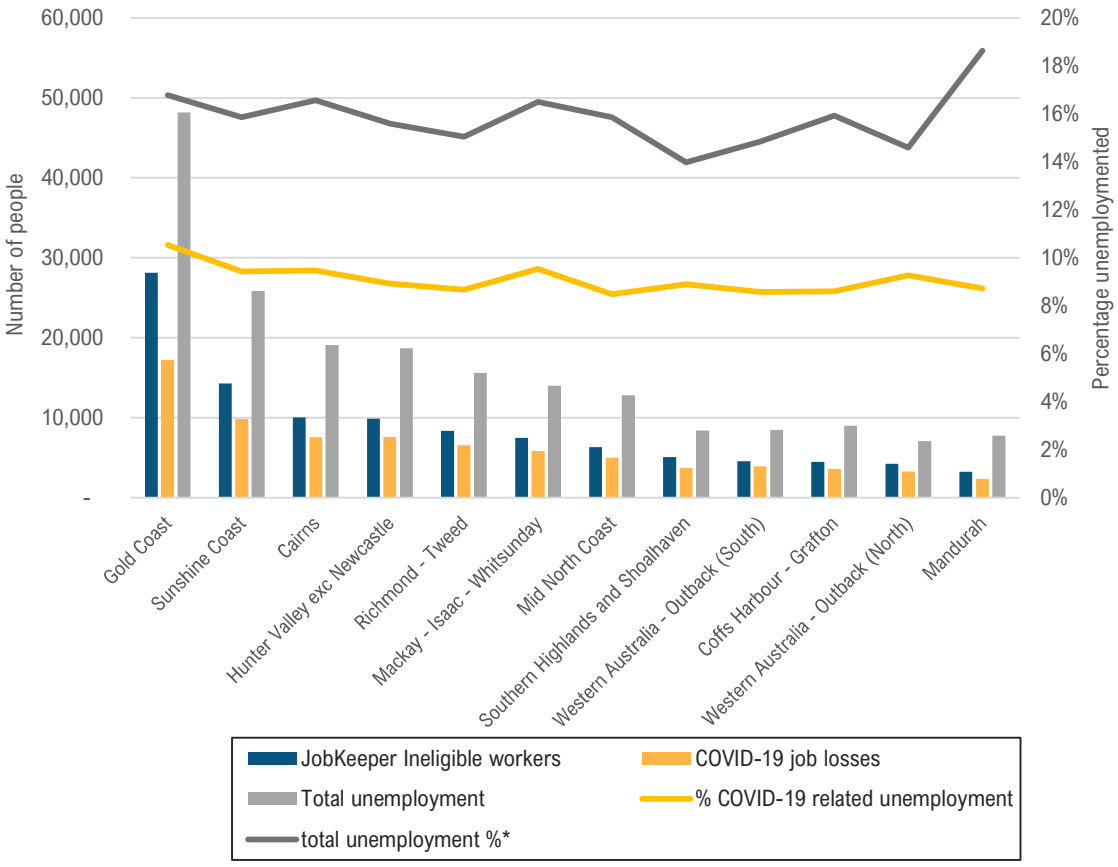


Figure 3. Regions with the highest number of workers predicted to lose employment outside of capital cities

Tourism Dependent Communities

Australia's Tourism Dependent Communities by Economic Importance
The economic importance of tourism is considered to be highest in Central NT, Phillip Island, Whitsundays, Snowy Mountains and West Coast – each with estimates of economic importance over 15%.
Tropical North Queensland, Sunshine Coast, Gold Coast, Mid North Coast, Northern Rivers, South Coast and Australia's South West have large tourism industries, and they are also highly dependent on tourism [11].

Tourism dependent regions have the highest rates of estimated employment loss proportionate to their population. Most regions where tourism is a central pillar of the local economy have an estimated COVID-19 related employment loss of between 9-11%. Job loss rates can be much higher for tourist hotspots at the local level. Estimates are as high as 22% for Lord Howe Island,17% for Port Douglas (in the Cairns region), 16% for the Whitsundays and 14% for both Surfers Paradise (in the Gold Coast region) and Tasmania's South East Coast. These finer scale results (at the SA3 level) in specific townships and suburbs average out with nearby townships to create estimated rates of job loss at the regional level (SA4). Figure 4 presents these regional figures. Rates are higher in some local areas (SA3) which are embedded in larger regional data (SA4), for example the localised area of the Whitsundays has an estimated 16% loss of employment, while the larger region of which it is part, (Mackay-Isaac-Whitsunday) has an estimated 10% loss of employment. Many individual tourist townships have more intensive reliance and will face more extreme economic impacts from COVID-19 than surrounding areas.



Notes: *Total unemployment in this figure is a sum of the existing base employment from 2016 Census and the predicted employment loss due to Covid-19

Figure 4. Regional areas (SA4) with the highest average rates of estimated employment loss due to of COVID-19 loss include many tourist dependent communities

Many rural and regional areas where significant employment loss is predicted are yet to recover from the impacts of the 2020 bushfires. Tourism related businesses in these areas thus are experiencing a twin shock – they have already endured a downturn over the summer holiday season and are particularly vulnerable to COVID-19 related economic shock[9–11]. Employment loss may be much higher than is predicted in some of these areas as the cumulative impact of long periods of hardship is more likely to lead business closures.

There is a major correlation between Australia's most tourism dependent communities and the areas in regional Australia with the highest estimated rates of COVID-19 related employment loss. Whether their economies are large or small, the importance of these local tourism industries to their regional economies is considerable, as unexpected shocks could impact on the entire local economy [12].

Impacts across the states, territories, and in capital cities

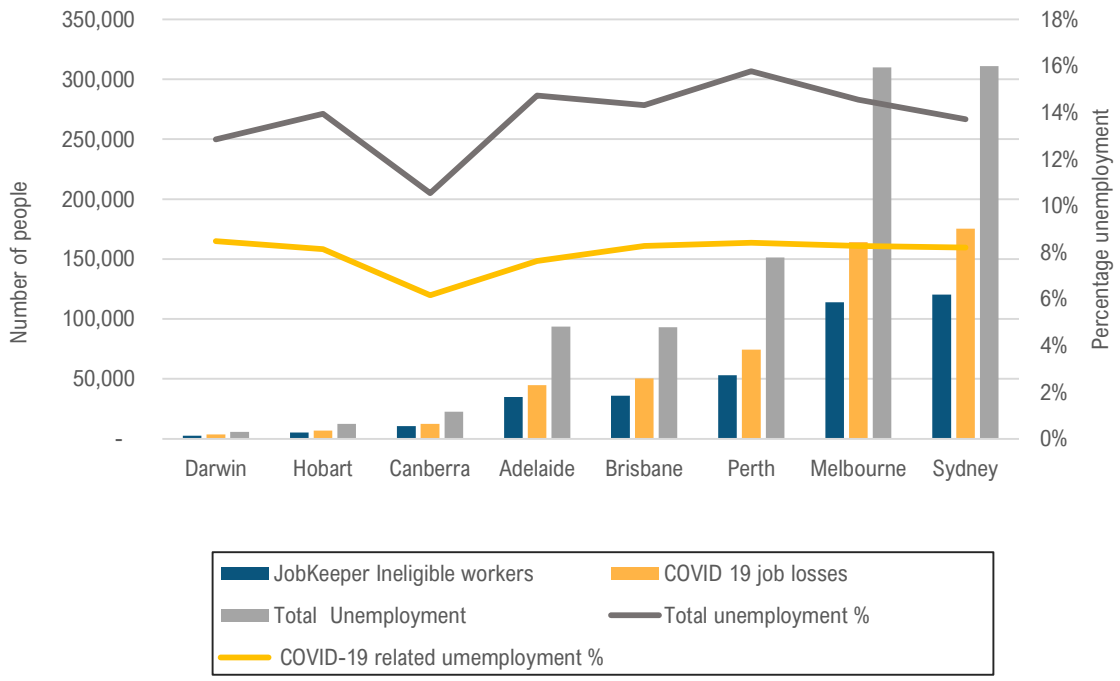
While internal variations within regions, and within individual states and territories is quite large, averaged figures for each state are fairly similar. COVID-19 related employment loss is conservatively estimated to be 6-8% of the workforce without factoring in the JobKeeper subsidy. In parallel, the number of those ineligible for the JobKeeper subsidy sits around 6% for all states except the ACT (5%).

Capital cities represent more than half the estimated actual job losses due to COVID-19 in each state except in Queensland, Tasmania and the Northern Territory (see Figure 4). This is consistent with the distribution of each state's workforce.

Table 1. A comparison of estimated COVID-19 related employment loss in each state and capital city

		Estimated COVID-19 job losses		Estimated JobKeeper ineligible	
State	Total population	population	% of workforce*	Short term casual workers	% of workforce*
New South Wales (Sydney)	**3,338,0249** (2,133,186)	**275,615** (175,335)	8%	**203,587** (120,303)	6%
Victoria (Melbourne)	**273,5980** (1,984,518)	**220,995** (164,198)	8%	**164,287** (114,136)	6%
Queensland (Brisbane)	**2,136,253** (608,603)	**180,158** (50,404)	8%	**135,281** (35,830)	6%
Western Australia (Perth)	**1,157,571** (883,053)	**96,640** (74,404)	8%	**72,843** (52,910)	6%
South Australia (Adelaide)	**746,012** (587,007)	**55,619** (44,824)	7% (8%)	**47,321** (34,900)	6%
Tasmania (Hobart)	**216,647** (84,907)	**17,289** (6,908)	8%	**14,329** (5,195)	7% (6%)
Australian Capital Territory	**205,683**	**12,671**	6%	**10,576**	5%
Northern Territory (Darwin)	**102,630** (42,452)	**8,008** (3605)	8% (9%)	**6,123** (2,544)	6%
Other Territories	**2,160**	**237**	11%	**150**	7%

* Percentage is the same for the state/territory and its capital unless where only one figure is presented



Notes *Total unemployment in this figure is a sum of the existing base employment from 2016 Census data and the predicted employment loss due to Covid-19

Figure 5. Numbers of unemployed and percentage unemployment rates for capital cities across Australia

Spatial results for each state and territory

New South Wales

NSW is predicted to experience large-scale employment loss in main population centres, and high rates of unemployment in a number of regional areas, with the highest rates of predicted employment loss in tourism dependent communities (see Table 2).

Tourism dependent regions such as the Hunter Valley and Northern NSW as well as larger rural townships such as Dubbo, Tamworth and Wagga Wagga are predicted to lose thousands of jobs. The Hunter Valley tourism industry estimated losses of $15 million per month in the first quarter of this year due to recent bushfires and drought [9]. A significant proportion of the areas facing a predicted loss of 9% or greater are regional areas still dealing with these economic stresses, making them especially vulnerable to the impacts of COVID-19.

Table 2. NSW – Locations with estimated COVID-19 related employment loss of at least 9% of the workforce

	% of workforce		No. of workers		
Region (SA3)	Predicted job loss	Jobkeeper ineligible	Predicted job loss	JobKeeper ineligible	Total unemployment
Lord Howe Island	22%	12%	50	27	56
Snowy Mountains	12%	8%	1,157	795	1,483
Tweed Valley	10%	7%	3,471	2,420	6,217
Lower Hunter	10%	7%	3,481	2,628	6,546
Great Lakes	10%	7%	966	701	1,902
South Coast	10%	7%	2,494	1,846	4,187
Port Stephens	9%	6%	2,573	1,790	4,805
Southern Highlands	9%	7%	1,901	1,390	2,669
Richmond Valley - Coastal	9%	7%	3,011	2,252	5,137
Lithgow - Mudgee	9%	7%	1,573	1,330	2,936
Shoalhaven	9%	6%	3,166	2,322	5,754
Port Macquarie	9%	7%	2,585	1,948	4,713
Wyong	9%	6%	5,631	3,951	10,902
Coffs Harbour	9%	7%	2,983	2,395	5,758
Clarence Valley	9%	7%	1,490	1,202	3,247

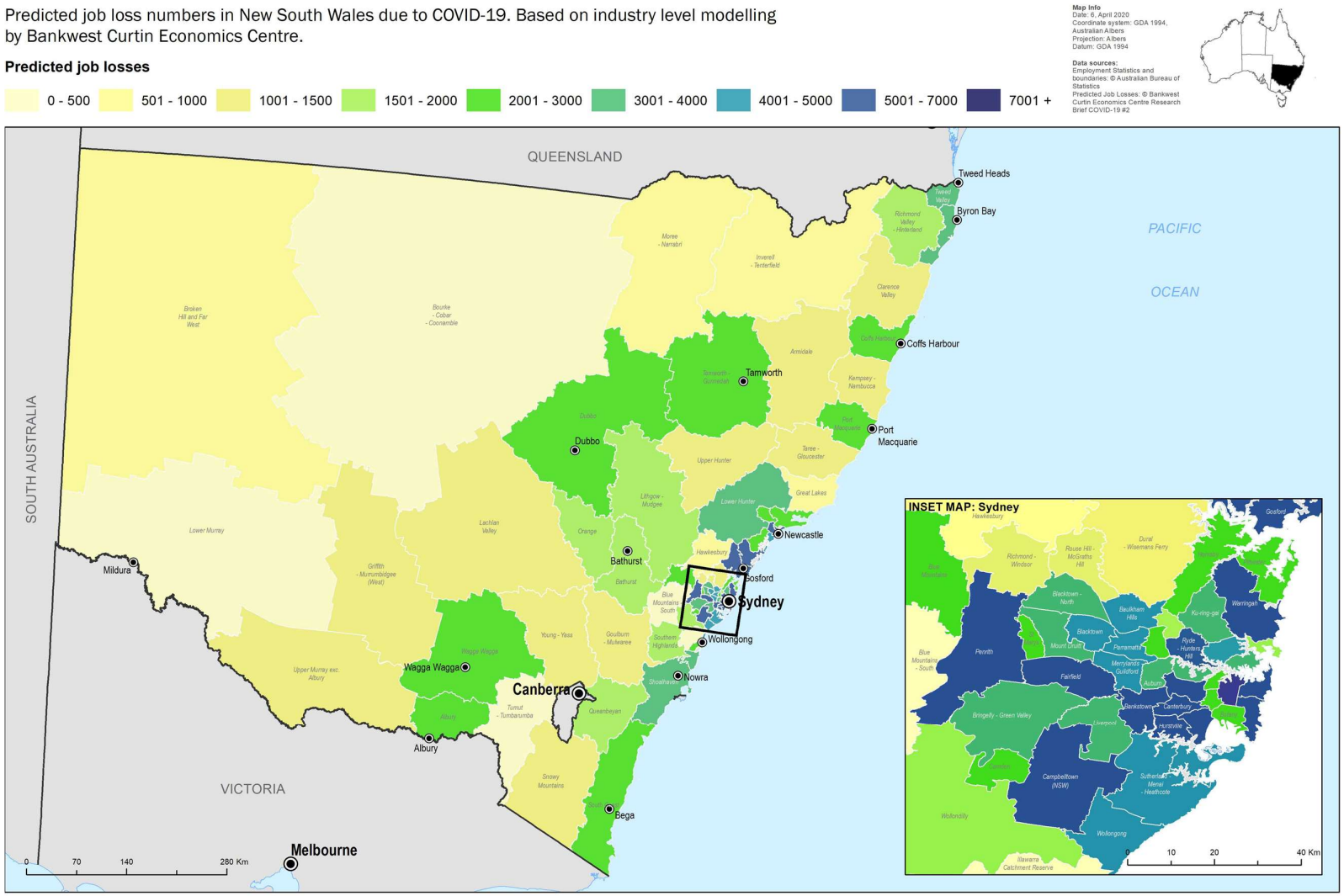


Figure 6. Map of predicted number of job losses related to COVID-19 in NSW and Sydney

Further analysis of local areas is possible to isolate the most impacted areas within a particular region. Figure 8 below provides a detailed overview of the distribution of estimate employment loss across the Blue Mountains region at the finer scale of SA2.

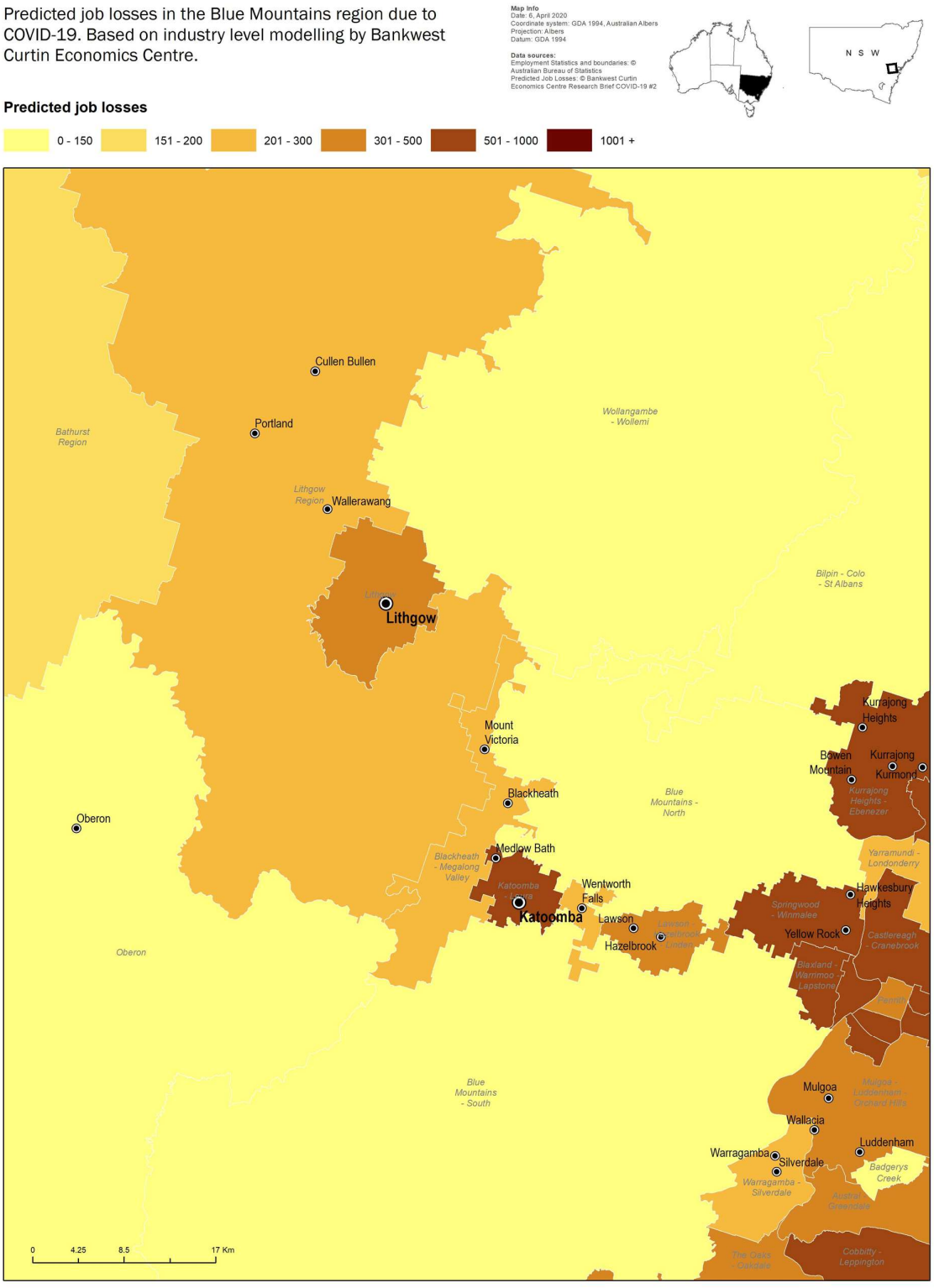


Figure 7. Employment loss estimates at the localised (SA2) level in the Blue Mountains

Queensland

Queensland has the broadest geographical spread of predicted employment loss of any state, primarily due to the presence of large regional tourist attractions. Communities in Far North Queensland, the Sunshine Coast and the Gold Coast are all predicted to bear significant economic impacts and employment losses. Some of the highest predicted rates of employment loss (in the country) are in Port Douglas (17%), the Whitsundays (16%) and Surfers Paradise (14%). Rockhampton, Mackay and Townsville. Major regional centres have large numbers of predicted employment loss, consistent with their population numbers.

Table 3. Queensland - Locations with estimated COVID-19 related employment loss of at least 9% of the workforce

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
Port Douglas - Daintree	17%	10%	946	536	1,238
Whitsunday	16%	9%	1,627	950	2,263
Surfers Paradise	14%	8%	2,737	1,468	4,373
Noosa	12%	7%	2,035	1,212	3,207
Southport	12%	7%	3,104	1,846	5,686
Broadbeach - Burleigh	11%	7%	3,524	2,061	5,434
No usual address (Qld)	11%	9%	331	273	1,316
Robina	11%	6%	2,478	1,491	4,182
Maroochy	10.4%	7%	2,724	1,764	4,757
Cairns - South	10%	7%	4,590	2,975	8,740
Gold Coast - North	10%	6%	2,906	1,805	5,435
Coolangatta	10%	6%	2,482	1,575	4,170
Nerang	10%	6%	3,209	2,010	5,569
Cairns - North	10%	7%	2,570	1,728	4,327
Ormeau - Oxenford	9%	6%	5,411	3,462	9,618
Mudgeeraba - Tallebudgera	9%	6%	1,506	997	2,464
Caloundra	9%	6%	3,159	2,137	5,753
Gold Coast Hinterland	9%	7%	758	553	1,248
Noosa Hinterland	9%	6%	828	601	1,491
Hervey Bay	9%	6%	1,639	1,182	4,070
Buderim	9%	6%	2,184	1,518	4,208
Bribie - Beachmere	9%	6%	918	649	1,981
Mackay	9%	7%	4,542	3,522	9,461
Bowen Basin - North	9%	9%	1,301	1,337	2,280
Redcliffe	9%	6%	2,096	1,476	4,340

While there are large numbers of predicted employment loss in Brisbane, unlike almost all other states, the majority of the predicted employment loss is outside the capital. Locations such as the Gold Coast, Cairns and the Sunshine Coast have both high rates of predicted employment loss and significant numbers of predicted unemployed. The unemployment impacts are particularly intense where economies are highly tourism dependent.

Tourist areas such as Cairns have a high dependence on foreign tourists, in particular from South East Asia so the recovery time may be significantly slower than areas where intrastate or interstate tourism are most prominent[8].

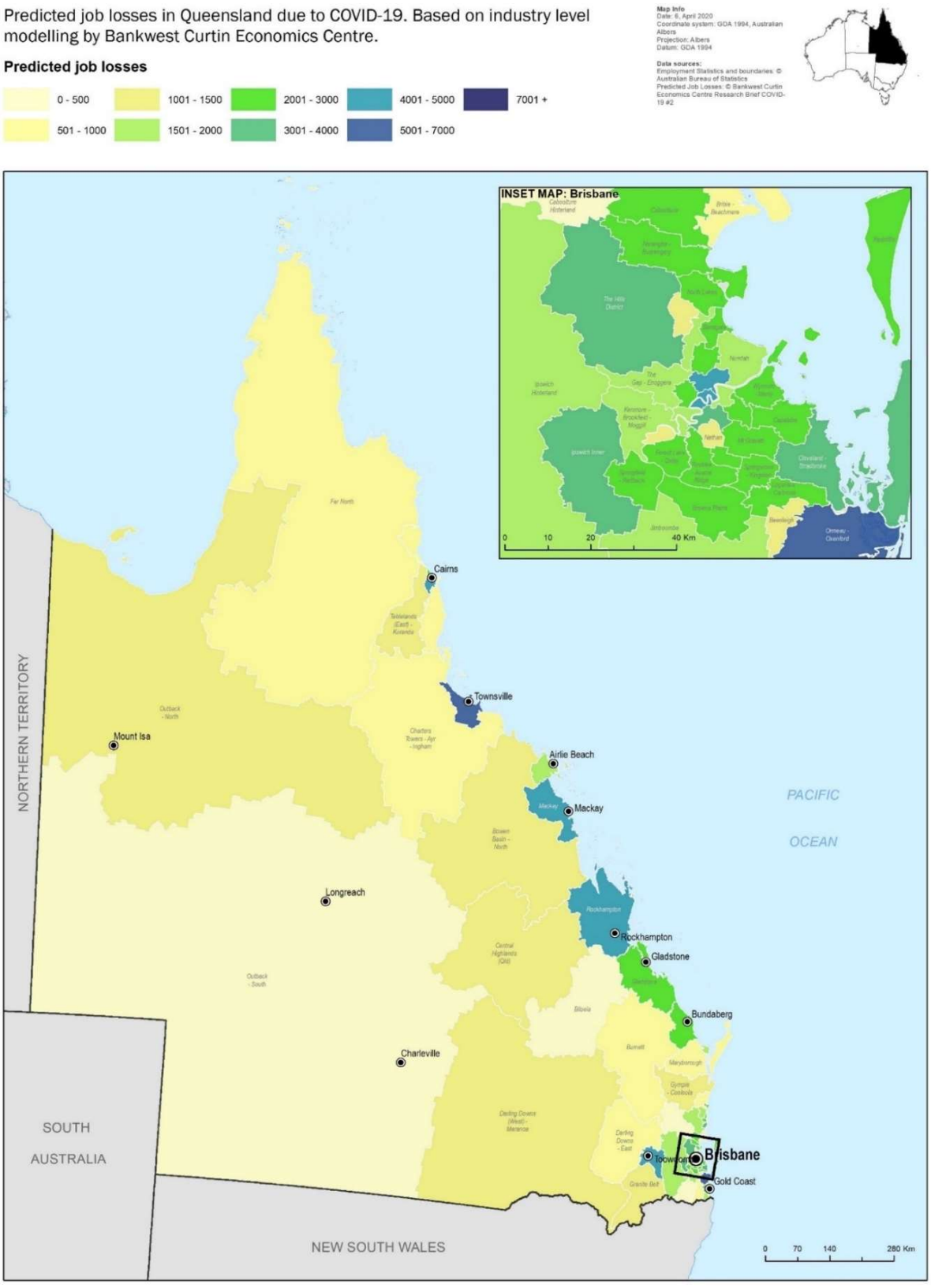


Figure 8. NSW- Map of estimated number of job losses related to COVID-19 by region (SA3) and Sydney (SA2)

Localised analysis of tourism dependent regions in Queensland:

The Gold Coast and Cairns are two regions with the highest rates of predicted employment loss due to COVID-19. Analysis at the SA2 level can provide insight on the localised communities that are most vulnerable within the SA3 level region of the Gold coast and Cairns.

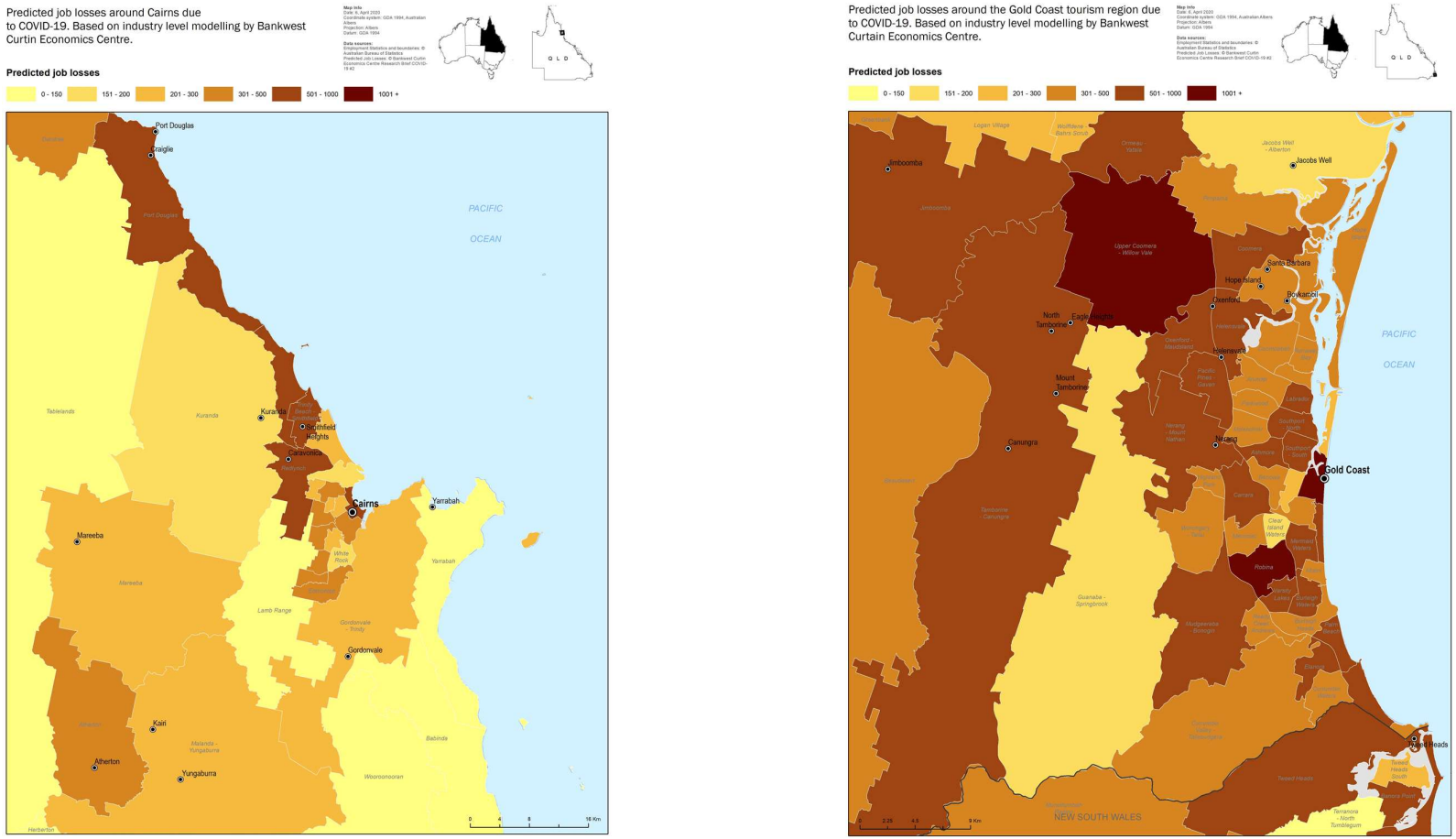


Figure 9a and 10b: Maps of estimated COVID-19 employment loss in Cairns and the Gold Coast (at SA2 level)

Victoria

In regional Victoria, the areas with the highest rates of unemployment include the larger regional population centres as well as tourist locations (see Table 4 below).

13 metropolitan locations in Melbourne have higher estimated rates of employment loss than anywhere else in the state. This is a reversal of the trends seen in most of Australia where estimated rates of employment loss peak in regional areas. The locations with 9% or greater estimated employment loss are Inner City, Brunswick, Maribyrnong and Brimbank.

Table 4: VIC– Regional locations with the highest estimated rate of COVID-19 related employment loss (>7.5% of the popn)

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
Surf Coast – Bellarine Peninsula	8.5%	6.2%	2,688	1,949	4,220
Upper Goulburn Valley	8.4%	7.3%	1,941	1,687	3,176
Mornington Peninsula	8.3%	6.0%	5,622	4,049	9,171
Ballarat	8.2%	6.2%	3,761	2,845	7,208
Gippsland – South West	8.2%	7.4%	2,038	1,827	3,521
Geelong	8.2%	6.0%	6,901	5,055	12,973
Creswick – Daylesford – Ballan	8.2%	7.2%	1,014	889	1,702
Gippsland – East	8.1%	7.3%	1,381	1,239	2,512
Bendigo	7.8%	6.1%	3,242	2,558	6,178
Frankston	7.7%	5.7%	4,865	3,602	9,240
Wodonga - Alpine	7.6%	6.7%	2,448	2,151	4,199
Warrnambool	7.5%	7.4%	1,749	1,713	2,904

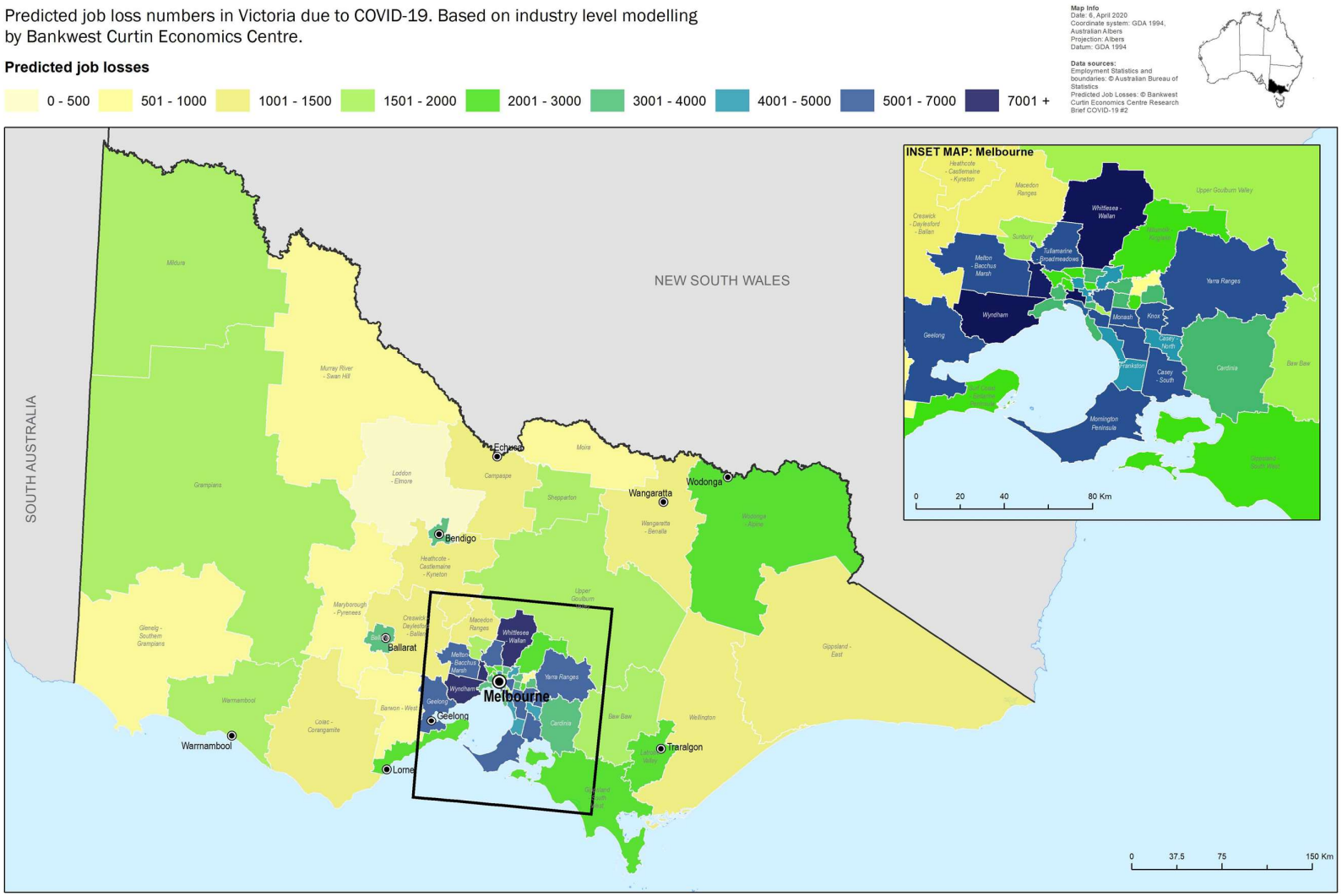


Figure 10. VIC- Map of estimated number of job losses related to COVID-19 by region (SA3) and Melbourne (SA2)

South Australia

The Outback North East and Kangaroo Island have the highest rates of predicted unemployment loss in regional South Australia. Locations in the South East and Barossa are estimated to have high rates of short-term casual workers in workers ineligible for the JobKeeper payment. The estimates of short-term casual workers in these regions are higher than the predicted job losses, indicating a particular vulnerability to COVID19 related job loss in this area. A significant proportion of the workforce are in the food and accommodation industry, indicating that actual job losses are more likely to be closer to the number of workers who are ineligible for JobKeeper payments.

Table 5: SA- Estimated COVID-19 related employment loss and Jobkeeper ineligible workers for all regional locations

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
North and East	9%	8%	958	808	1942
Fleurieu - Kangaroo Island	8%	8%	1,544	1,417	2828
Eyre Peninsula & South West	7%	8%	1,664	1,845	3689
Yorke Peninsula	7%	8%	627	716	1353
Barossa	7%	7%	1,149	1,229	1993
Limestone Coast	6%	8%	1,876	2,367	3528
Mid North	6%	7%	618	782	1630
Murray and Mallee	6%	8%	1,728	2,350	3835
Lower North	6%	9%	568	846	1088
North and East	9%	8%	958	808	1942

The burgeoning region of Onkaparinga on the southern fringe of Adelaide has largest population within its boundaries, is predicted to have 7% employment loss. This equates to around 6000 people estimated to be out of work. The inner city and West Torrens have the highest predicted rates of employment loss (10% and 9% respectively.

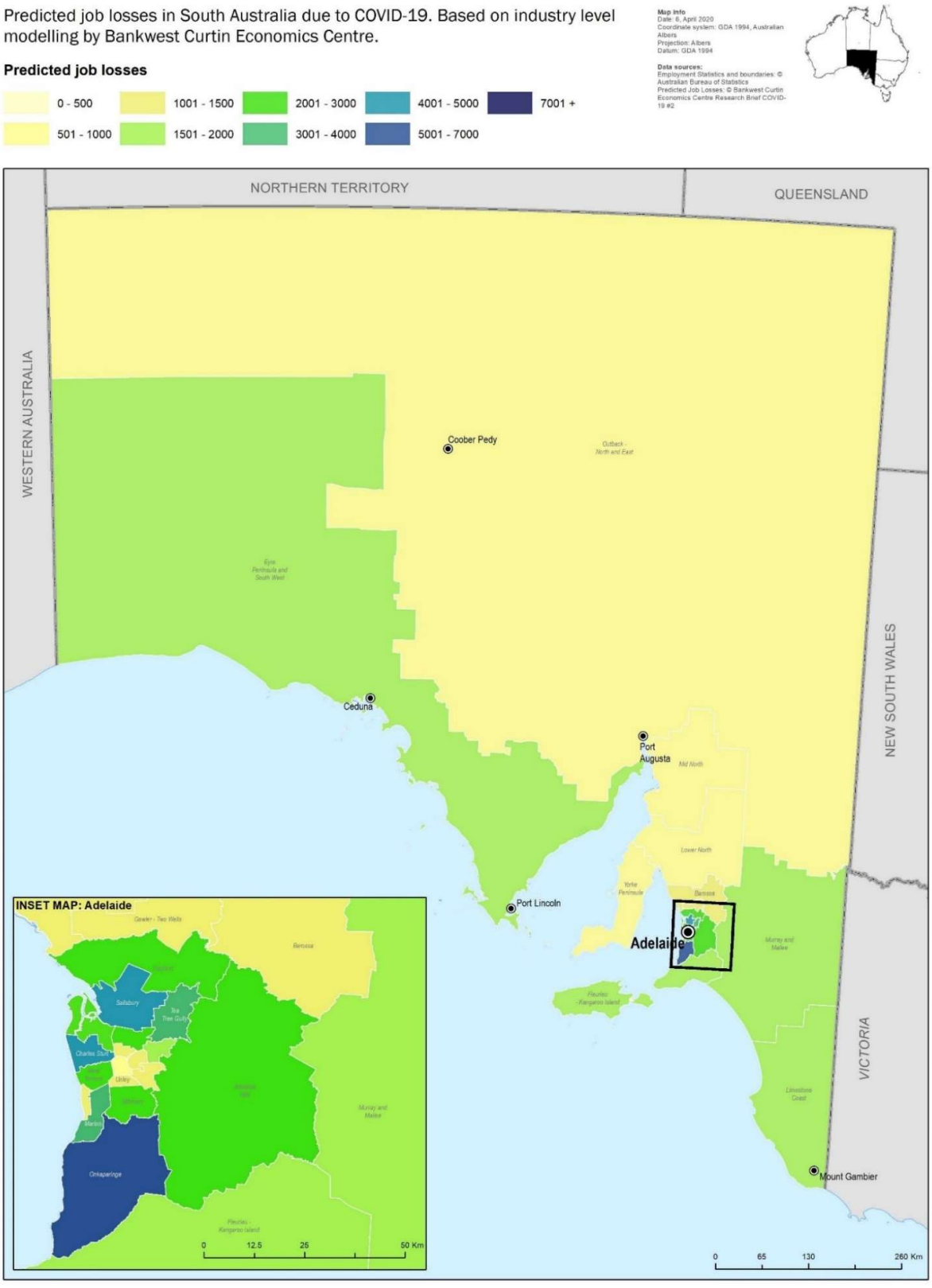


Figure 11. SA- Map of estimated number of job losses related to COVID-19 by region (SA3) and Adelaide (SA2)

Western Australia

The regional areas in Western Australia with the highest rates of predicted employment loss are Augusta-Margaret River and Gascoyne (Shark Bay to Exmouth), both strongly reliant on the tourism industry. Predicted rates of employment loss remain high at an average of 9% in the rest of regional and rural Western Australia.

Table 6. WA -Locations with an estimated COVID-19 related employment loss of at least 9% of the workforce

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
Augusta - Margaret River - Busselton	10%	8%	2,284	1,731	3,597
Gascoyne	10%	8%	422	340	687
East Pilbara	10%	8%	1,258	969	1,897
West Pilbara	9%	7%	1,793	1,348	2,660
Goldfields	9%	7%	1,741	1,287	3,014
Mandurah	9%	6%	3,236	2,368	7,764
Kimberley	9%	7%	1,173	944	2,498
Mid West	8%	7%	1,862	1,695	3,900
Bunbury	8%	6%	3,474	2,882	7,405
Esperance	7%	8%	534	581	870
Manjimup	7%	8%	684	830	1,294
Albany	7%	8%	1,723	1,954	3,068
Wheat Belt - North	6%	8%	1,364	1,970	2,896
Wheat Belt - South	5%	9%	450	860	910

Rates of unemployment in Perth are predicted to average 8-9% in most areas. The northern regions of Joondalup, Stirling and Wanneroo are highly populated and present the largest clusters, with more than fifteen thousand predicted job losses.

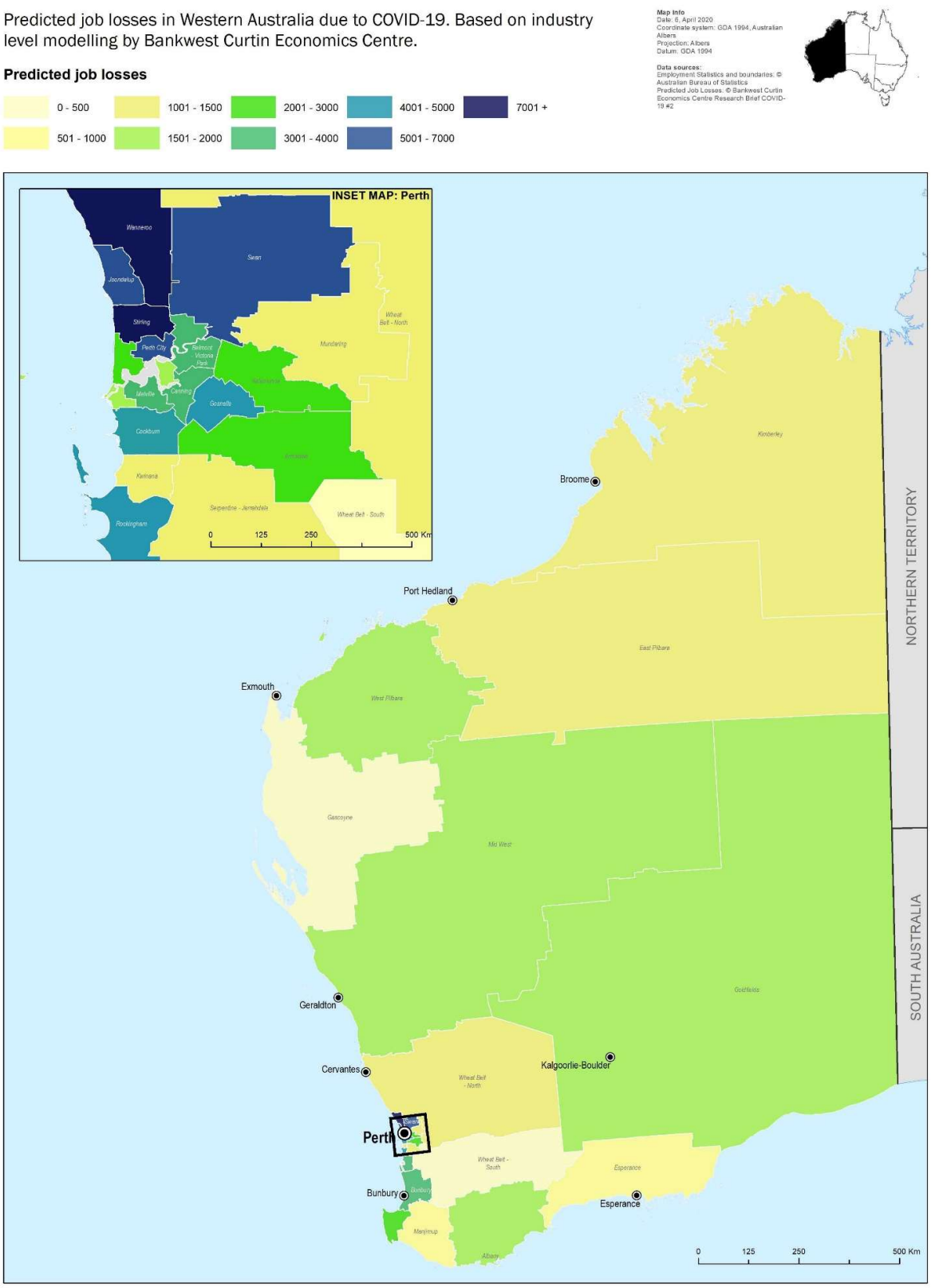


Figure 12. Map of predicted number of job losses related to COVID-19 in Western Australia (SA3) and Perth (SA2)

Northern Territory

Large proportions of the Northern Territory have extremely high rates of existing employment as well as high rates of predicted employment loss (see Table 7 below).

Table 7: NT- Estimated COVID-19 related employment loss and JobKeeper ineligible workers in locations across the Northern Territory

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
Darwin City	10%	6%	1,492	968	2,123
Daly - Tiwi - West Arnhem	9%	6%	335	269	1405
Alice Springs	9%	6%	1,299	964	2921
Darwin Suburbs	9%	6%	2,113	1,576	3,606
East Arnhem	8%	6%	232	204	802
Katherine	8%	6%	339	389	982
Barkly	7%	5%	374	286	115
Litchfield	8%	6%	819	662	1286
Palmerston	6%	6%	1,224	899	928

The regions of Barkly, East Arnhem and Daly-Tiwi-West Arhnem all had double figure unemployment rates prior to COVID-19, and are predicted to sustain an additional 6-9% employment loss. This puts additional strain on local communities already characterized by high levels of poverty and disadvantage caused by their remote locations.

The Daly-Tiwi-West Arnhem region has a predicted total unemployment rate during the COVID-19 crisis of 36%. The figure for remote Indigenous communities may be even higher due to the more intensive measures to isolate these communities considered high risk. All travellers including local residents are required to complete a 14-day self-isolation before entering remote communities in an escalation of measures designed to protect these vulnerable populations [13].

A massive reduction in art sales due to the absence of tourism is resulting in the loss of a significant proportion of the total income for a number of these communities whose residents are already living on the poverty line[14].

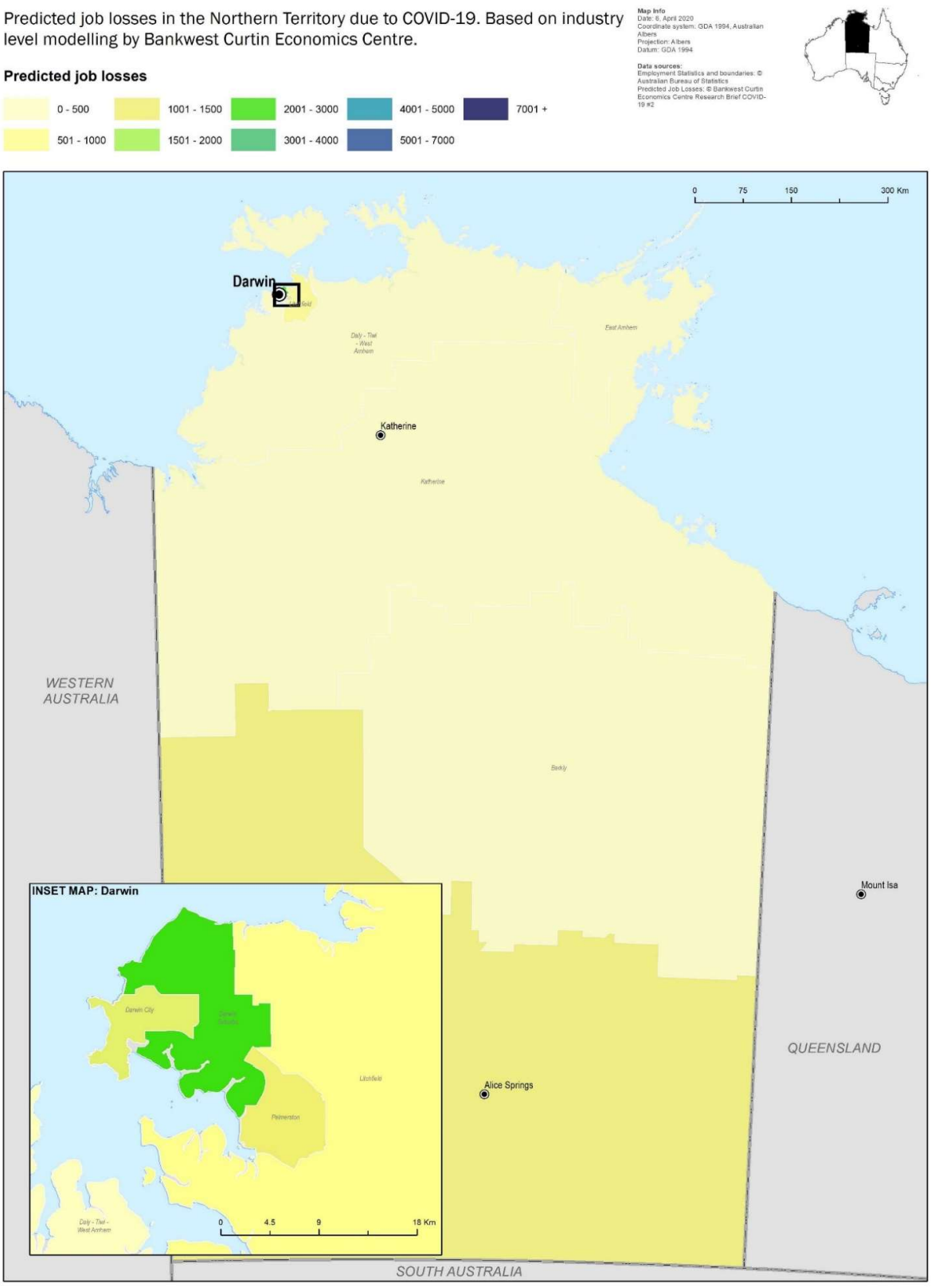


Figure 13. NT - Map of estimated number COVID-19 related job losses per region (SA3 and Darwin (SA2))

Australia Capital Territory

The ACT's predicted rate of employment loss averages at around 6%, the lowest of all Australian states or territories. The proportion of the workforce that is ineligible for the JobKeeper payment is also estimated to be slightly lower, at an average of 5% compared to 6-7% in other parts of Australia. Overall it is predicted that around 10,000 people could be out of work in the ACT due to the COVID-19.

Table 8: ACT- Estimates of COVID-19 related employment loss and JobKeeper ineligible workers in locations across the ACT

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
Canberra East	8%	6%	42	32	79
Belconnen	7%	5%	3,248	2,562	5,774
North Canberra	7%	5%	1,868	1,500	3,748
Gungahlin	6.5%	5%	2,529	2,011	4,318
Urriarra - Namadgi	6%	5%	20	17	25
Tuggeranong	6%	5%	2,690	2,273	4,713
Woden Valley	6%	5%	944	867	1,687
Weston Creek	5%	5%	546	522	984
South Canberra	5%	5%	646	648	1,214
Molonglo	4%	5%	123	133	205

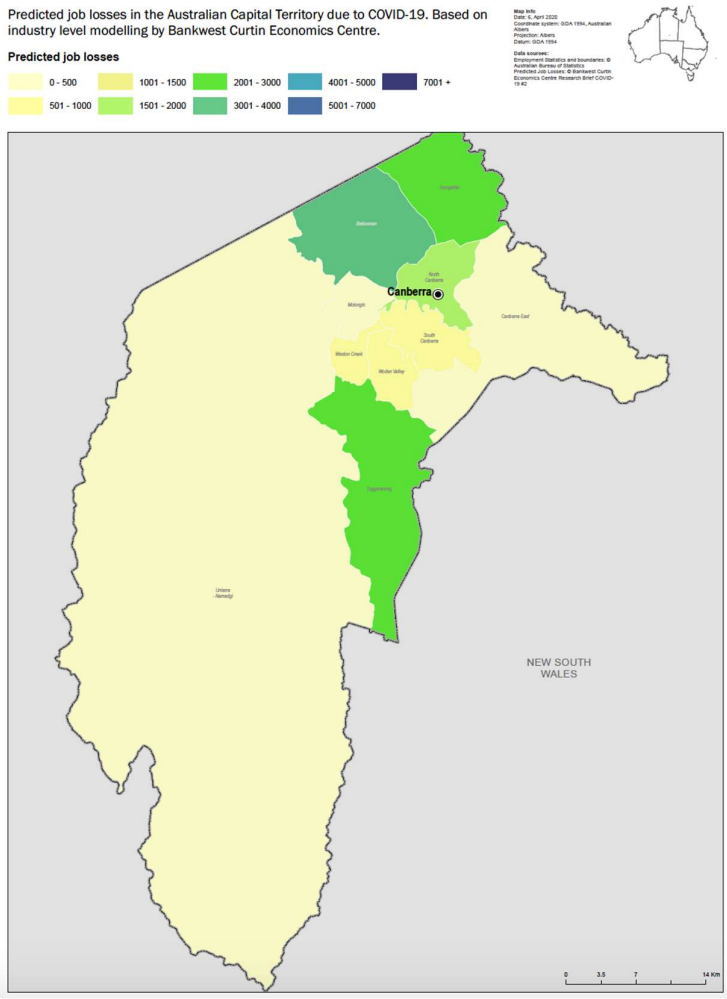


Figure 14: ACT- Map of estimated number of COVID-19 job losses per region (SA3)

Tasmania

Tasmania's South East Coast has a predicated rate of 14%, one of the highest in Australia, and the West Coast has a high proportion of workers who are estimated to be ineligible for the JobKeeper payment, making this region vulnerable to COVID-19 related employment loss.

Hobart has predicted unemployment between 7-9%, with the Inner City and Brighton areas both having a high predicted rate of employment loss of 9% in metropolitan areas. The other main hotspot is the major township of Launceston which has the same predicted rate of 9% as well as a likely 2-3000 jobs lost.

Table 9: Estimates of COVID-19 related employment loss and JobKeeper ineligible workers in regional locations in Tasmania

	% of workforce		No. of workers		
Region (SA3)	Predicted Job loss	JobKeeper ineligible	Predicted Job loss	JobKeeper ineligible	Predicted total unemployment*
South East Coast	14%	10%	332	235	471
Launceston	9%	6%	2,970	2,163	5,901
Devonport	8%	7%	1,442	1,234	2,891
Burnie - Ulverstone	8%	7%	1,436	1,274	3,089
West Coast	7%	9%	545	658	1,113
Meander Valley - West Tamar	7%	7%	663	678	1,291
Huon - Bruny Island	7%	7%	525	556	1,032
North East	7%	8%	1,005	1,083	2,235
Central Highlands (Tas.)	6%	8%	291	365	621

Figure 15:

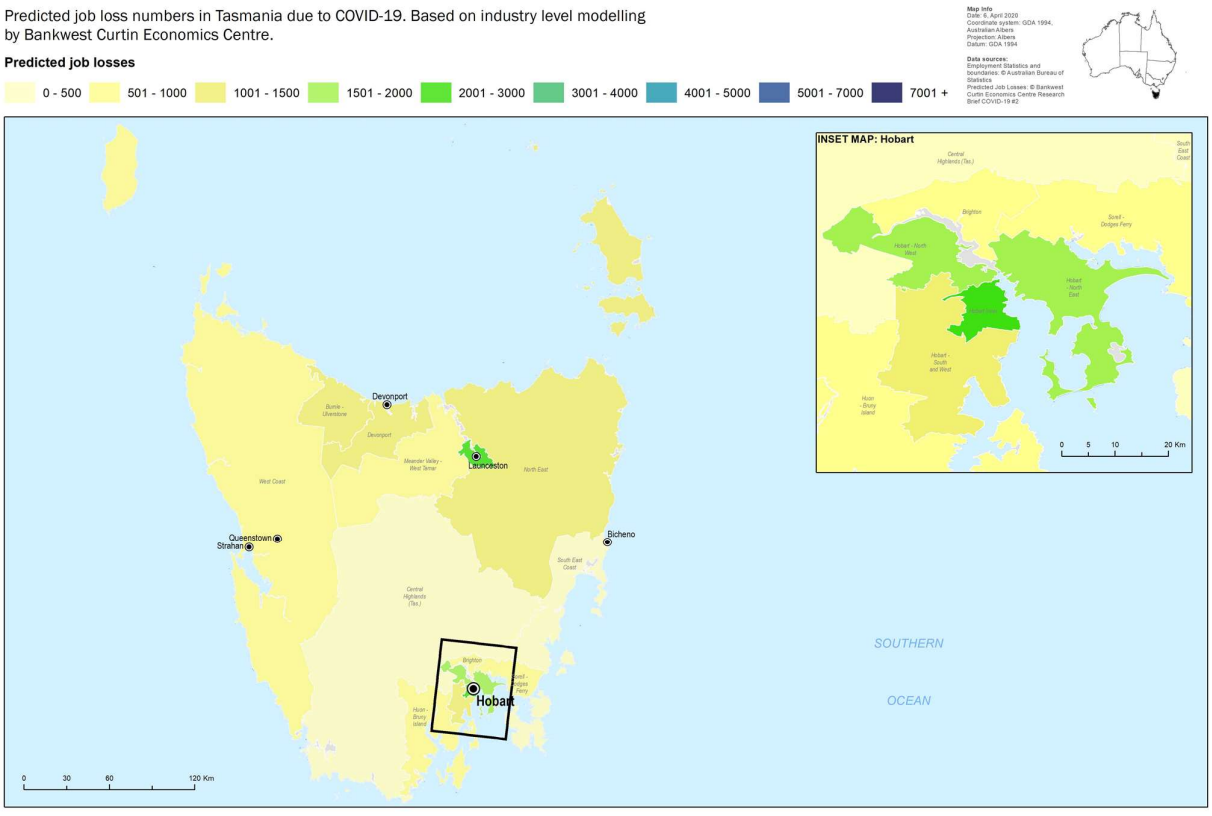


Figure 16. Tas- Map of estimated number of COVID-19 related job losses per region (SA3) and Hobart (SA2)

Opportunities for further analysis

A snapshot of the South Coast of NSW highlighting high value conservation areas together with the footprint of the 2019-2020 fire season, and overlaid with data on predicted COVID-19 related employment loss demonstrates the scale of opportunity that exists to pair employment creation with on the ground conservation actions at a regional scale (see Figure 12 below). Additional analysis along these lines could identify synergies between communities most in need of stimulus support and the potential for meaningful and impactful employment creation.

A preliminary map of the 2019-20 fire season and conservation areas nationally (see Figure 13 below) also highlights the significant potential across the continent to pair regions particularly vulnerable to the economic impacts of COVID-19 and the potential for meaningful on ground conservation and land use activities.

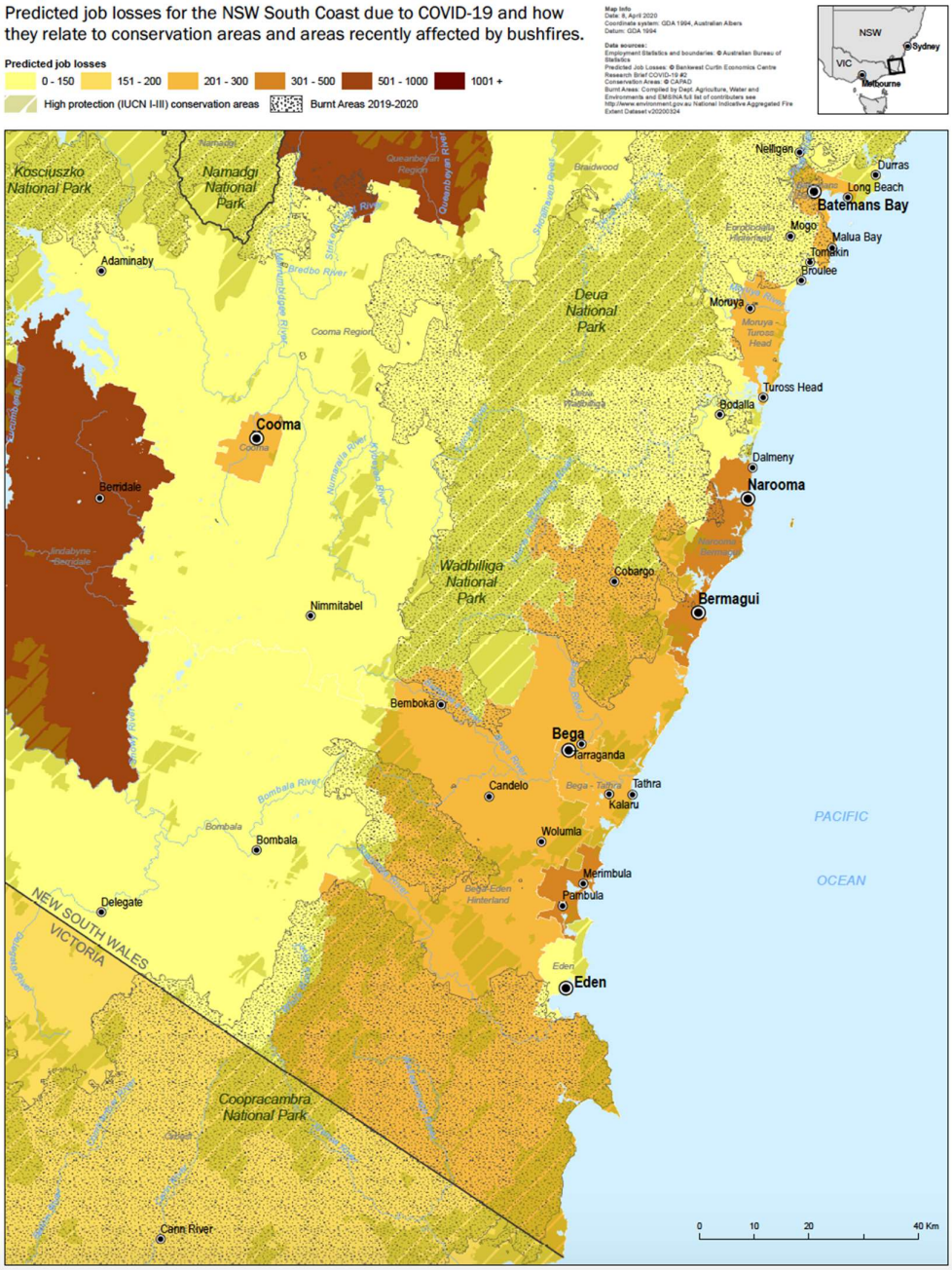


Figure 17. South Coast NSW 2019-2020 fire season and high conservation areas relative to predicted COVID-19 unemployment hotspots (SA2)

Predicted job loss numbers in Australia due to COVID-19 and how they relate to conservation areas and areas recently affected by bushfires.

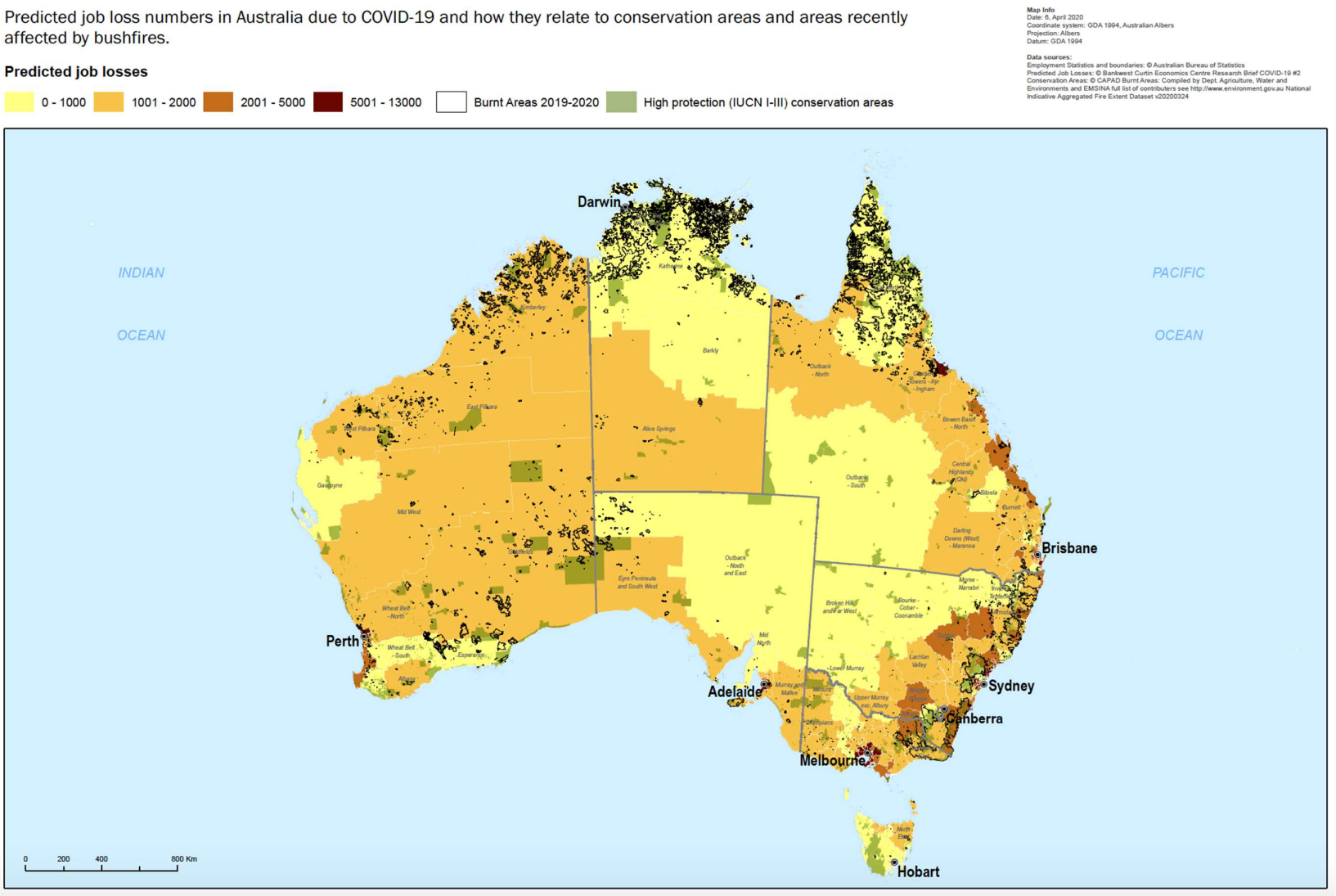


Figure 18. National 2019-2020 fire season and high conservation areas relative to predicted COVID-19 unemployment hotspots

References:

1. Bonyhady N (2020) 'Surge in demand': 280,000 ask Centrelink for help in one day. *Sydney Morning Herald*.
2. Cassells R, Duncan A, Dockery M, et al. (2020) Potential Job Losses in the COVID-19 Pandemic, BankWest Curtin Economics Centre. Available from: https://bcec.edu.au/publications/job-disruption-and-wage-replacement-in-the-covid19-pandemic/
3. Wiggins J, Thomson J, Baird L (2020) Australian Financial Review, No industry spared as job losses soar, 2020. Available from: https://www.afr.com/policy/economy/no-industry-spared-as-job-losses-soar-20200325-p54dqw.
4. Cassells R, Duncan A (2020) Job Keepers and Job Seekers: How many workers will lose and how many will gain?, BankWest Curtin Economics Centre. Available from: https://bcec.edu.au/publications/job-keepers-and-job-seekers-how-many-workers-will-lose-and-how-many-will-gain/
5. Frydenberg J (2020) Australian Government (The Treasury), Jobkeeper payment supporting millions of jobs | Treasury Ministers, 2020. Available from: https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/media-releases/jobkeeper-payment-supporting-millions-jobs.
6. Australian Government JobKeeper payment - Information for Employers. Available from: https://treasury.gov.au/coronavirus/jobkeeper.
7. Council of Small Businesses of Australia (2020) COSBOA, Job Keeper payments – we need answers, 2020. Available from: https://www.cosboa.org.au/post/job-keeper-payments-we-need-answers.
8. ABS (2019) Data by Region, Australian Bureau of Statistics website, 2019. Available from: https://www.abs.gov.au/.
9. Maitland Mercury (2020) Hunter Valley Tourism losing nearly $15m a month after drought, bushfires. *The Maitland Mercury*. Available from: https://www.maitlandmercury.com.au/story/6607854/42m-loss-in-3-months-for-hunter-valley-tourism/
10. Smee B (2020) Australian hotels face ruin if coronavirus impact on tourism worsens, industry chiefs say | Australia news | The Guardian, 2020. Available from: https://www.theguardian.com/australia-news/2020/mar/04/australian-hotels-face-ruin-if-coronavirus-impact-on-tourism-worsens-industry-chiefs-say.
11. Rodway N (2020) 'We are a ghost town': Counting the cost of Australia's bushfires. *Al Jazeera*.
12. Australian Regional Tourism Ltd (2017) ART, Economic benefits, 2017. Available from: https://regionaltourism.com.au/projects/economic-benefits/.
13. Danks T (2020) 'If you live out bush, stay there' - travel restrictions for communities tightened | Katherine Times | Katherine, NT, 2020. Available from: https://www.katherinetimes.com.au/story/6700371/if-you-live-out-bush-stay-there-travel-restrictions-for-communities-tightened/.
14. Altman J, Markham F (2020) SmartCompany, How the coronavirus crisis is causing income from Indigenous art to plummet, 2020. Available from: https://www.smartcompany.com.au/coronavirus/indigenous-coronavirus-crisis-income-art/.

APPENDIX I: METHODS

Table 10. Data sources for analysis

Dataset	Source
Total national employment figures (tables 1a/b)	Australian Bureau of Statistics 2016, Labour force, detailed, quarterly, Feb 2020, cat. no. 6291.0.55.003 (Table 04- trend series totals used),
Predicted job losses	Bankwest Curtin Economics Centre Research Brief COVID-19 #2, Bankwest Curtin Economics Centre, March 2020 (Authors' calculations based on ABS Labour Force Quarterly Detailed, Cat No.6291.0.55.003 Feb 2020, ABS Cat No. 6201.0 Labour Force Australia, ABS 2016 Census TableBuilder, ABS Cat No.6306.0 Employee Earnings and Hours Survey ABS Cat No.6306.0 ABS Characteristics of Employment 2019 TableBuilder, ABS Counts of Businesses including Entries and Exits Cat No.8165.0 2019, ABS Business Indicators Cat No.5676.0.)
Estimated Short term casual workers	Bankwest Curtin Economics Centre Research Brief COVID-19 #3 (Short-term casual workers have been estimated using the number of workers without any sick leave entitlements that have been in continuous employment with their current employer/business for less than 12 months. Various ABS Data Sources used in this calculation)
Employment by industry (SA1)	Australian Bureau of Statistics 2016, Employment by Industry (2016), TableBuilder. Findings based on use of ABS TableBuilder
Unemployment (SA1)	Australian Bureau of Statistics 2016, Unemployment (2016), TableBuilder. Findings based on use of ABS TableBuilder
Fire (burnt area covering)	Dept Agriculture, Water and Environment and EMSINA, National Indicative Aggregated Fire Extent Dataset 2019-2020. Contributors: NSW Rural Fire Service, Northern Australian Fire Information (NAFI), QLD Fire and Emergency Service, SA Country Fire Service, SA Department for Environment and Water, Tasmanian Fire Service, TAS Department of Primary Industry, Parks, Water and Environment, VIC Department of Environment, Land, Water and Planning, WA Department of Biodiversity, Conservation and Attractions. Published 15/03/2020
High Conservation Areas (IUCN I-III)	Collaborative Australian Protected Areas Database (CAPAD) 2018, Commonwealth of Australia 2019. Available at http://www.environment.gov.au/capad/.

Technical notes:

Data limitations:

We utilise 2016 census employment figures in our calculations to enable a breakdown of workforce data by region. The results underestimate the total employment figures as of Feb 2020 by 18%. This also effect While there is some variability across industries, overall the result is to generate a conservative estimate of the actual number of job losses across all industries.

Predicted Job Loss:

We have used as our starting point the results of modelling of employment losses across Australia per industry by the Bankwest Curtin Economics Centre (BCEC). BCEC estimated employment loss per industry sector nationally. We applied these national estimates of employment loss proportionately to regional industry workforce data across Australia at a variety of geographical scales to identify areas that are likely to be the hotspots of COVID-19 related job losses. As the BCEC modelling of job losses was undertaken prior to the recent Job Keeper stimulus proposal, we need an additional layer of analysis accounting for the impacts of this potential wage subsidy.(see table 11.)
Technical Notes of BCEC modelling of employment loss (REF): Predicted unemployment rates have been constructed by applying estimated employment growth and job losses from March 2020 to August 2021. This timeframe has been selected based upon the likelihood of an extended period of uncertainty in the economy but for this uncertainty to diminish over time. Employment growth is forecast using previous historical labour market data patterns over negative economic shocks including the early 1980s, 1990s recessions and global financial crisis. Job losses have been estimated by applying job specific loss shares to ANZSIC 3-digit industries based upon applying direct, indirect, lower and medium exposure classifications. Potential increases in jobs within sub-sectors have also been factored in, including growth in essential services (health, utilities, social services) and industry sub-sectors

that are seeing increased demand (for example agriculture and farming, supermarkets, packaging services, food product manufacturing, and building cleaning). Estimates and outcomes may differ substantially. Estimates of 50% job losses to the hospitality, entertainment and transport sector directly impacted have been applied. These may be conservative given 60% of workers in these sectors are employed on a casual basis and businesses have either shut or trade restricted to takeaway services. Job losses also include workers that may be temporarily stood down but still remain attached to their employer. Some workers may be using leave arrangements including paid and unpaid leave as temporary arrangements. These workers would not fall within a standard definition of unemployment. Workers that lose their jobs are also assumed to remain in the labour force.

Job Keeper Ineligible Workers:

As casual employments who have worked less than 12 months for an employer are unable to access the proposed Job Keeper wage subsidy, they are likely to represent a significant proportion of the final employment loss numbers. To calculate the number of Jobkeeper ineligible workers in any location we utilise national estimates of the number of short-term casual workers per ANZSIC 4 industry sector developed by the Bankwest Curtin Economics Centre (BCEC). We apply these national proportions for short term casual employees in each industry sector to geographical regions at the SA2 level. This provides a broad estimate of the likely workers in each region. While it does not account for local variations it provides an effective estimate to track geographic trends.
The results in this category provides a reference to workers most vulnerable to employment loss.(see table 12).

Fire and high conservation lands:

Mapping shows areas of high conservation value based on IUCN categories I-III, overlaid with burnt areas data from the 2019-2020 fire season as collated by Dept Agriculture, Water and Environment and EMSINA.

Geographical scales of analysis

The Australian Bureau of Statistics (ABS) have a variety of employment statistics across industries that can be organised at various geographical scales. We apply our results at three different scales according to statistical areas in which data is categorised spatially by the Australian Bureau of Statistics[8]:

Table 11. Description of levels of spatial analysis

Scale of analysis	Description	Usage
Statistical Area Level 2 (SA2s)	SA2s are functional areas that represent a community that interacts together socially and economically. They often align with Suburb and Locality boundaries to improve the geographic coding of data to these areas. In major urban areas SA2s often reflect one or more related suburbs. We have utilised this statistical level for our mapping of individual regions within states.	Regional maps: Blue Mountains, Gold Coast, Cairns and South Coast
Statistical Areas Level 3 (SA3s)	SA3s are designed for the output of regional data. SA3s create a standard framework for the analysis of ABS data at the regional level through clustering groups of SA2s that have similar regional characteristics, administrative boundaries or labour markets.SA3s generally have populations between 30,000 and 130,000 persons. They are often the functional areas of regional towns and cities with a population in excess of 20,000, or clusters of related suburbs around urban commercial and transport hubs within the major urban areas. SA3s are aggregations of whole SA2s.	State and Territory maps
Statistical Areas Level 4 (SA4s)	SA4s are specifically designed for the output of Labour Force Survey data and reflect labour markets within each State and Territory within the population limits imposed by the Labour Force Survey sample. Most SA4s have a population above 100,000 persons to provide sufficient sample size for labour force estimates. In regional areas, SA4s tend to have lower populations (100,000 to 300,000).In metropolitan areas, the SA4s tend to have larger populations (300,000 to 500,000). SA4s are aggregations of whole SA3s	National maps

Industry Proportions utilised for calculations of predicted job loss and estimated casual workers per industry

Table 12: National total employment job loss predictions by industry*

Industry	Total Employed Feb 2020	Predicted Loss	Percentage job loss	% of short term casuals
Arts and Recreation Services	249,700	126,000	50.5%	22%
Accommodation and Food Services	934,800	467,400	50.0%	6%
Administration and Support Services	436,000	11,600	2.7%	11%
Other Services	490,300	100,800	20.6%	7%
Transport, Postal and Warehousing	655,400	119,900	18.3%	7%
Rental, Hiring and Real Estate Services	220,800	25,700	11.6%	11%
Construction	1,190,700	118,400	9.9%	5%
Mining	242,800	23,800	9.8%	9%
Retail Trade	1,256,500	75,700	6.0%	6%
Wholesale Trade	389,700	18,800	4.8%	3%
Professional, Scientific and Technical Services	1,164,500	50,300	4.3%	5%
Financial and Insurance Services	467,500	17,600	3.8%	3%
Information Media and Telecommunications	214,000	5,000	2.3%	6%
Manufacturing	923,300	15,700	1.7%	6%
Education and Training	1,117,400	10,900	1.0%	10%
Health Care and Social Assistance	1,793,200	- 31,800	-1.8%	7%
Electricity, Fas, Water and Waste Services	139,700	- 2,700	-1.9%	2%
Public Administration and Safety	832,100	- 16,400	-2.0%	5%
Agriculture, Forestry and Fishing	320,700	- 6,700	-2.1%	2%

Source:* Job loss predictions based on modelling from Bankwest Curtin Economics Centre Research Brief COVID-19 #2

Table 13: National casual job loss predictions by industry and sex*

		Casual workers employed less than 12 Months with current employer			Casuals as percent of total employed		
Industry	Total Employed Feb 2020	Male	Female	All	Male %	Female %	All %
Accommodation and Food Services	934,800	92,600	117,600	210,200	9.9%	12.6%	22.5%
Construction	1,190,700	71,800	5,100	76,900	6.0%	0.4%	6.5%
Retail Trade	1,256,500	45,200	91,600	136,800	3.6%	7.3%	10.9%
Manufacturing	923,300	39,000	21,400	60,400	4.2%	2.3%	6.5%
Transport, Postal and Warehousing	655,400	35,000	9,200	44,200	5.3%	1.4%	6.7%
Administration and Support Services	436,000	22,900	24,400	47,300	5.3%	5.6%	10.8%
Education and Training	1,117,400	22,100	38,600	60,700	2.0%	3.5%	5.4%
Mining	242,800	17,900	4,400	22,300	7.4%	1.8%	9.2%
Health Care and Social Assistance	1,793,200	17,700	89,100	106,800	1.0%	5.0%	6.0%
Professional, Scientific and Technical Services	1,164,500	15,400	15,300	30,700	1.3%	1.3%	2.6%
Wholesale Trade	389,700	14,000	6,900	20,900	3.6%	1.8%	5.4%
Public Administration and Safety	832,100	12,300	9,100	21,400	1.5%	1.1%	2.6%
Other Services	490,300	12,100	16,100	28,200	2.5%	3.3%	5.8%
Agriculture, Forestry and Fishing	320,700	11,900	8,500	20,400	3.7%	2.7%	6.4%
Arts and Recreation Services	249,700	11,000	13,900	24,900	4.4%	5.6%	10.0%
Information Media and Telecommunications	214,000	9,700	6,100	15,800	4.5%	2.9%	7.4%
Financial and Insurance Services	467,500	5,300	3,100	8,400	1.1%	0.7%	1.8%
Electricity, Fas, Water and Waste Services	139,700	5,200	1,900	7,100	3.7%	1.4%	5.1%
Rental, Hiring and Real Estate Services	220,800	2,600	2,000	4,600	1.2%	0.9%	2.1%

Source:* Short term casual predictions based on modelling from Bankwest Curtin Economics Centre Research Brief COVID-19 #3