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Research that matters.

# **Oil in the Great Australian Bight**

## **Comparative report on employment potential**

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# Summary

Norwegian oil company Equinor is planning exploratory drilling for oil and gas in the Great Australian Bight beginning in late 2020, after it received two offshore leases from its partner BP in 2017. BP abandoned plans to drill itself, although it still holds two offshore leases which remain “prospects”.

Modelling commissioned by the oil and gas lobby shows that South Australia is unlikely to receive any noticeable benefit from tax payments as a result of oil and gas production in the Great Australian Bight. What benefits exist will go mostly to the Commonwealth, but even those benefits are small relative to the total Commonwealth budget, would take decades to materialise and are based on “preliminary” modelling.

The modelling shows that oil production plateaus from the early 2030s, but no Petroleum Resource Rent Tax payments are expected until 2047. In the late 2040s, total tax payments are predicted to peak at about \$4.5 billion before quickly falling again. That includes indirect taxes. Taxes paid just by those drilling exceed \$4 billion in only one year.<sup>1</sup> Assuming even modest growth in the Australian economy (and Commonwealth budget) of 2 percent per year, total payments as a result of drilling the Great Australian Bight would never exceed even half a percent of Commonwealth revenues in a given year.

Polling previously undertaken by The Australia Institute in March 2019 showed that 60% of Australians are opposed to allowing drilling to take place in the Great Australian Bight.<sup>2</sup> New national polling has now revealed that most Australians think drilling in the Bight would have a negative effect on fishing, tourism and the natural environment, although they do think it would have a positive effect on jobs.

In fact, opening up the Great Australian Bight is unlikely to have much of an effect on jobs, and could even threaten employment in other industries.

Australia wide, the oil and gas industry employs 19,000 people out of a workforce of 10.7 million people. This represents less than two out of every thousand jobs in

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<sup>1</sup> ACIL Allen Consulting (2018) *Petroleum development in the Great Australian Bight: A preliminary view of the economic impact of development*, pp. iii, 14–15,  
[https://www.appea.com.au/media\\_release/potential-bight-benefits-great-for-state-and-nation/](https://www.appea.com.au/media_release/potential-bight-benefits-great-for-state-and-nation/)

<sup>2</sup> The Australia Institute (2019) *Polling – Great Australian Bight*,  
<https://www.tai.org.au/sites/default/files/Polling%20Brief%20-%20March%202019%20-%20Great%20Australian%20Bight%20final.pdf>

Australia, 0.18 percent. South Australia is similar, with 1,665 people working in oil and gas out of 746,000 employed in total at the 2016 census.

The North West Shelf project saw employment peak at 1,660 employees and later declined somewhat to less than 1,500. A Bight oil project is likely to be smaller, with job numbers perhaps between 1,000 and 1,500 people. Industry modelling puts the figure even lower, at just an average of 826 jobs over the project lifespan. It is important to remember that the majority of any future employees would be fly-in-fly-out (FIFO) workers who would be flown from around Australia, not people from local regions.

Exploration drilling in the Great Australian Bight would be unlikely to pay any royalty income or tax to the state or federal governments. On the contrary, expenses on exploration would be likely used as deductions from future income from the Bight project.

The entire extractive sector paid \$289 million in royalties for the minerals, oil and gas extracted in South Australia in 2018-19. This represents just 1.4 percent of South Australia's total revenue of \$20.4 billion in that year. South Australia's government received substantially more from car registration, \$432 million, than it did from the mining, oil and gas sector.

Oil production in the Bight could generate more royalty revenue – the North West Shelf project is budgeted to contribute \$862 million in 2019-20 to the WA government, almost 3 percent of the state's revenue of \$31.3 billion. Before such revenues were collected, however, the Western Australian state had to incur substantial expenses, as is made clear by the WA Treasury:

In 2010 net present value terms, the cost of Western Australia's assistance to the North West Shelf project (e.g. payment of subsidies to the State's power utility to help cover the losses it initially incurred under crucial 'take or pay' gas contracts) is estimated to be around \$8 billion.<sup>3</sup>

Decades of subsidy may be necessary before major oil and gas projects provide benefits to state governments. In contrast, the tourism, fishing and aquaculture industries on the SA coast already employ over 10,000 people and provide sustainable benefits through locally owned businesses. Across South Australia, Victoria and Tasmania, those same industries currently employ over 27,000 people.

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<sup>3</sup> WA Government (2011) *GST Distribution Review: WA Submission*, p. 13, [http://www.gstdistributionreview.gov.au/content/submissions/downloads/issues\\_paper/wa\\_gov.pdf](http://www.gstdistributionreview.gov.au/content/submissions/downloads/issues_paper/wa_gov.pdf)

**Table: Employment in at-risk areas, by state and industry**

	<b>Tourism</b>	<b>Aquaculture and fisheries</b>	<b>Total</b>
<b>South Australia</b>	8,900	1,536	10,436
<b>Victoria</b>	8,300	873	9,173
<b>Tasmania</b>	5,300	2,113	7,413
			<b>27,022</b>

# Introduction

The Great Australian Bight makes up a large part of Australia's southern coast. Remote from Australia's main cities, the area has significant environmental values and hosts a range of industries.

The waters of the Great Australian Bight Marine Park are home to a range of marine life, such as tuna, sea eagles and albatross. It is an important breeding ground for great white sharks, southern right whales and sea lions.

Geoscience Australia has examined the central area of the Bight, estimating that there could be 5 billion barrels (Bbbl) of oil, and 14 trillion cubic feet (Tcf) of gas.<sup>4</sup> To put this in context, Western Australia's Canarvon Basin, where the North West Shelf project is located, had approximately 4.5 Bbbl of economically extractible liquid hydrocarbons when extraction began,<sup>5</sup> and 33 Tcf of gas.<sup>6</sup> Note that the estimates are not directly comparable – the Bight estimate reflects total resources whereas the North West Shelf reflects what can be extracted economically. For the sake of comparison, it appears that any eventual Great Australian Bight oil project would be of somewhat smaller size than the North West Shelf.

Norwegian company Equinor is planning exploratory drilling for oil and gas in the Great Australian Bight in late 2020, after it received two offshore leases from its partner BP in 2017. BP abandoned plans to drill itself, although it still holds two offshore leases which remain "prospects".<sup>7</sup> Seismic testing by oil and gas explorer PGS was planned for late 2019, although as of August 2019 it has been suspended.<sup>8</sup>

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<sup>4</sup> Totterdell et al. (2008) *Mid–Late Cretaceous organic-rich rocks from the eastern Bight Basin: implications for prospectivity*, [https://www.researchgate.net/publication/236647327\\_Mid-Late\\_Cretaceous\\_organic-rich\\_rocks\\_from\\_the\\_eastern\\_Bight\\_Basin\\_implications\\_for\\_prospectivity](https://www.researchgate.net/publication/236647327_Mid-Late_Cretaceous_organic-rich_rocks_from_the_eastern_Bight_Basin_implications_for_prospectivity)

<sup>5</sup> Geoscience Australia (2004) *Australian Energy Resource Assessment – Second edition*, <https://arena.gov.au/knowledge-bank/australian-energy-resource-assessment-second-edition-2014/>

<sup>6</sup> Woodside Petroleum (2008) *North West Shelf*, <https://web.archive.org/web/20080615005619/http://www.woodside.com.au/Our+Business/Producti+on/Australia/North+West+Shelf/>

<sup>7</sup> Mathiesen (2018) *BP plan to drill in Great Australian Bight risked 750km oil spill, documents show*, <https://www.theguardian.com/environment/2018/apr/06/bp-plan-to-drill-in-great-australian-bight-risked-750km-oil-spill-documents-show>

<sup>8</sup> Briggs (2019) *Great Australian Bight seismic testing gets green light*, <https://www.abc.net.au/news/2019-01-15/great-australian-bight-seismic-testing-gets-green-light/10716252>; The Advertiser (2019) *PGS suspends search for oil in Great Australian Bight*,

Importantly, the Bight's waters are unusually deep water for oil drilling, with ocean depths of approximately 1,000–2,500 metres.<sup>9</sup> By comparison, the principle oil and gas fields in the North West Shelf area range between 125 and 131 metres.<sup>10</sup> Such deep water both increases costs for producers and increases environmental risks. Specialised ultra-deepwater equipment would be required to produce oil in the Bight and one of the world's worst oil disasters, the Deepwater Horizon oil spill in the Gulf of Mexico, occurred in water of similar depth.

A major oil spill in the Bight could impact other industries on the coasts of South Australia, Victoria and Tasmania such as fishing, aquaculture and tourism, which are major industries for many coastal towns.

The economic impacts of the proposed exploration program would be minimal. Such activities are highly capital intensive rather than labour intensive – they employ a lot of machinery and equipment, but relatively few people. The capital equipment, such as the specialised ultra-deepwater harsh environment rig BP had planned to use, the Ocean GreatWhite, is almost entirely imported providing little stimulus to the Australian economy.<sup>11</sup> In the exploration phase, production would be minimal, paying no royalties or taxes.

This minimal economic impact of exploration was acknowledged by BP. BP's Environment Plan Summary stated:

BP discussed potential opportunities that will arise in locations such as Ceduna. It was noted however, that at this early stage of exploration, employment opportunities are limited.<sup>12</sup>

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<https://www.adelaidenow.com.au/news/south-australia/pgs-suspends-search-for-oil-in-great-australia-bight/news-story/75ac1715eb0a2ffa37439caf40ff9797>

<sup>9</sup> BP (2016) *Great Australian Bight Exploration Drilling Program*, <https://web.archive.org/web/20160220211906/http://www.bpgabproject.com.au/go/doc/5771/2243598/>

<sup>10</sup> Woodside Petroleum (n.d.) *North West Shelf Project*, [https://vivid.blob.core.windows.net/nwsg/default-document-library/nws\\_project\\_corporate\\_brochure\\_v17.pdf?sfvrsn=0](https://vivid.blob.core.windows.net/nwsg/default-document-library/nws_project_corporate_brochure_v17.pdf?sfvrsn=0)

<sup>11</sup> Diamond Offshore (2015) *Ocean GreatWhite*, <http://www.diamondoffshore.com/assets/Documents/15%20-%20GreatWhite.pdf>; note that Equinor have not yet revealed which rig they are planning to use: Equinor (2019) *Environment plan for the Stromlo-1 Exploration Drilling Program*, p. 13, <https://www.equinor.com/content/dam/statoil/documents/australia/gab-project/Equinor-Environment-Plan-Rev-1-20190422.pdf>

<sup>12</sup> BP (2015) *GAB Exploration Drilling Program Environment Plan Summary (EPPs 37, 38, 39, 40)*; (2016) *GAB Exploration Drilling Program Environment Plan Overview (EPPs 37, 39)*,

Greater emphasis is put on the potential economic benefits of future production:

the biggest potential for local input lies in a potential future development and production phase, which could only be considered if a commercially and technically developable discovery is made and proved by appraisal drilling.<sup>13</sup>

The industry lobby group, Australian Petroleum Production and Exploration Association (APPEA) is far more optimistic:

While still in its very early stages, successful petroleum exploration and development in the Bight could bring a new wave of much-needed private sector investment in South Australia, delivering jobs, economic opportunities and regional development for decades to come. ... “The Bight could become a game-changer for South Australia, attracting investment, creating employment and delivering new revenue.<sup>14</sup>

In fact, the economic impacts of oil production in the Great Australian Bight would be modest, particularly when seen in the context of the South Australian economy or the wider national economy. Against these modest potential benefits, South Australia should be weighing potential costs through government subsidisation of the project and the environmental risks that deepwater oil production imposes on the natural environment along with the industries and jobs that depend upon it.

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[https://web.archive.org/web/20161026140315/http://www.bp.com/content/dam/bp-country/en\\_au/about-us/what-we-do/exploring-great-australian-bight/environment-plan-overview.pdf](https://web.archive.org/web/20161026140315/http://www.bp.com/content/dam/bp-country/en_au/about-us/what-we-do/exploring-great-australian-bight/environment-plan-overview.pdf)

<sup>13</sup> ICN Gateway (2016) *BP Great Australian Bight Exploration*, <https://web.archive.org/web/20160416091713/https://gateway.icn.org.au/project/3552/bp-great-australian-bight-exploration?pl=1>

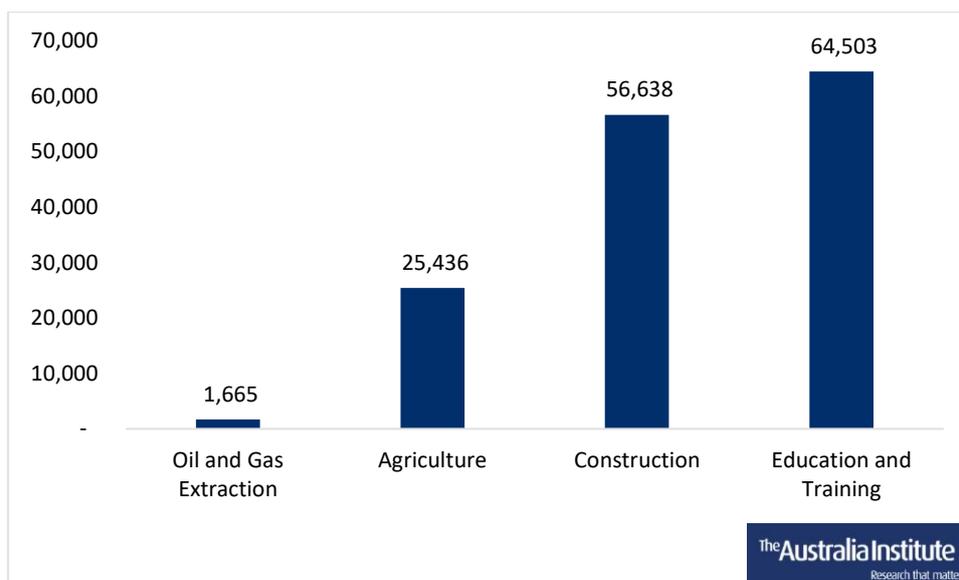
<sup>14</sup> APPEA (2018) *Potential Bight benefits great for State and nation*, [https://www.appea.com.au/media\\_release/potential-bight-benefits-great-for-state-and-nation/](https://www.appea.com.au/media_release/potential-bight-benefits-great-for-state-and-nation/)

# Employment

Oil and gas production is capital intensive and does not employ many people. Australia wide, the oil and gas industry employs 19,000 people out of a workforce of 10.7 million people. This represents less than two out of every thousand jobs in Australia, 0.18 percent.<sup>15</sup>

South Australia is similar, with 1,665 people working in oil and gas out of 746,000 people employed in total at the 2016 census. Most South Australian oil and gas workers work in the Cooper Basin in the north of the state. Oil and gas extraction is an extremely minor employer of South Australians compared to some of the main industries outlined below:

**Figure 1: Employment in South Australia, selected industries**



Source: ABS Census TableBuilder (2019) *2016 Census - Employment, Income and Education*

A potential future gas project in the Great Australian Bight would see a significant increase in oil and gas workers, but a very small increase in employment overall in South Australia. The North West Shelf project saw employment peak at 1,660 employees and later declined somewhat to less than 1,500.<sup>16</sup> Assuming a Bight oil

<sup>15</sup> ABS Census TableBuilder (2019) *2016 Census - Employment, Income and Education*

<sup>16</sup> ACIL Tasman (2009) *Nation Builder: How the North West Shelf Project has driven economic transformation in Australia*, <https://web.archive.org/web/20180326135010/http://www.woodside.com.au/Our-Business/Producing/Documents/NWSVACILTasmanreportOct2009.pdf>

project to be of slightly smaller size, between 1,000 and 1,500 people could be employed. This estimate is in line with APPEA's modelling, which predicts a peak of 1,361 jobs during construction and an average of 826 jobs over the project lifespan, based on estimated resources; that would increase to a peak of 1,521 ongoing jobs in the "high" case.<sup>17</sup>

It is important to remember that the majority of any future employees would be fly-in-fly-out (FIFO) workers who would be flown from around Australia to Adelaide and Ceduna and then to production rigs by helicopter. Many of these employees would not be from South Australia and would not reside in South Australia during their employment on the project.<sup>18</sup>

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<sup>17</sup> APPEA (2018) *Potential Bight benefits great for State and nation*

<sup>18</sup> ICN Gateway (2016) *BP Great Australian Bight Exploration*

# Royalty and tax income and state subsidies

Exploration drilling in the Great Australian Bight would be unlikely to pay any royalty income or tax to the state or federal governments. On the contrary, expenses on exploration would be likely used as deductions from future income from the Bight project.

If oil and gas production were to proceed, the impact on the state budget would be small. The South Australian state budget does not disaggregate oil and gas royalties from other mineral royalties. Regardless, the entire extractive sector paid \$289 million in royalties for the minerals, oil and gas extracted in South Australia in 2018–19. This represents just 1.4 percent of South Australia’s total revenue of \$20.4 billion in that year. South Australia’s government received substantially more from car registration, \$432 million, than it did from the mining, oil and gas sector.<sup>19</sup> Clearly, South Australia’s budget is not heavily influenced by changes in royalty revenue.

This would not change if oil and gas production in the Great Australian Bight began. “Preliminary” modelling commissioned by the oil lobby in 2018 predicts that the South Australian government would receive payments of \$41.7 million per annum, mostly in the form of payroll tax.<sup>20</sup> While not a royalty, for the purposes of comparison that is equivalent to just 14 percent of what the government currently receives from extractive sector royalties, or 0.2 percent of total state revenue.

The North West Shelf project now makes a considerable contribution to the Western Australian government, with grants via the Commonwealth of \$862 million budgeted in 2019–20. This is almost 3 percent of the WA state budget revenue of \$31.3 billion.<sup>21</sup>

Before such revenues were collected, however, the Western Australian state had to incur substantial expenses through infrastructure provision and other forms of subsidy. This is made clear by the Western Australian Treasury:

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<sup>19</sup> SA Government (2019) *2019-20 Budget Paper No. 3*, pp. 38–39, 40, 56, [https://statebudget.sa.gov.au/#Budget\\_Papers](https://statebudget.sa.gov.au/#Budget_Papers)

<sup>20</sup> ACIL Allen Consulting (2018) *Petroleum development in the Great Australian Bight: A preliminary view of the economic impact of development*, pp. iii, 30–31

<sup>21</sup> WA Government (2019) *2019-20 Budget Paper No. 3*, pp. 69, 75, <https://www.ourstatebudget.wa.gov.au/budget-papers.html>

In the 1970s and 1980s the State played a pivotal role in securing the development of the North West Shelf gas project through agreements, financial assistance and infrastructure provision. ... In 2010 net present value terms, the cost of Western Australia's assistance to the North West Shelf project (e.g. payment of subsidies to the State's power utility to help cover the losses it initially incurred under crucial 'take or pay' gas contracts) is estimated to be around \$8 billion.<sup>22</sup>

Based on the Western Australian experience, if South Australia expects to develop an offshore gas industry, it must be ready for potentially decades of subsidy before revenues are realised.

South Australia already subsidises its extractive sector. \$316 million was spent by the state government on measures that wholly or largely assisted the minerals and fossil fuel industries, including \$40 million on gas extraction, between 2008–09 and 2013–14.<sup>23</sup>

Such expenditure comes at the expense of funding other government priorities, such as health and education. This is made clear by the Queensland government:

Some costs may also be recovered by the government over time if they are directly industry related. However, there is a real opportunity cost for governments in undertaking the initial capital expenditure. Governments face budget constraints and spending on mining related infrastructure means less infrastructure spending in other areas, including social infrastructure such as hospitals and schools. For many projects directly related to assisting mining industry development, such as land acquisitions for state development areas, the expected timeframes for cost recovery are extremely long (sometimes decades). The opportunity cost of this use of limited funds is a real cost to government and the community.<sup>24</sup>

Gas and oil developments are likely to cost the South Australian government significant amounts before revenue is realised. This may be even more likely given the

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<sup>22</sup> WA Government (2011) *GST Distribution Review: WA Submission*, p. 13

<sup>23</sup> Peel, Campbell, & Denniss (2014) *Mining the age of entitlement*,  
<http://www.tai.org.au/content/mining-age-entitlement>

<sup>24</sup> Queensland Government (2014) *Queensland Treasury Response to Commonwealth Grants Commission: 2015 Methodology Review*, p. 15,  
<https://www.cgc.gov.au/sites/g/files/net5366/f/documents/2015%20Review%20Report/General%20Consultation/Commission%20position%20and%20staff%20discussion%20papers/State%20responses/R2015%20-%20CGC%202013-05%20-%20CGC%202013-06-S%20-%20CGC%202013-07-S%20-%20CGC%202013-08-S%20-%20QLD%20Response.pdf>

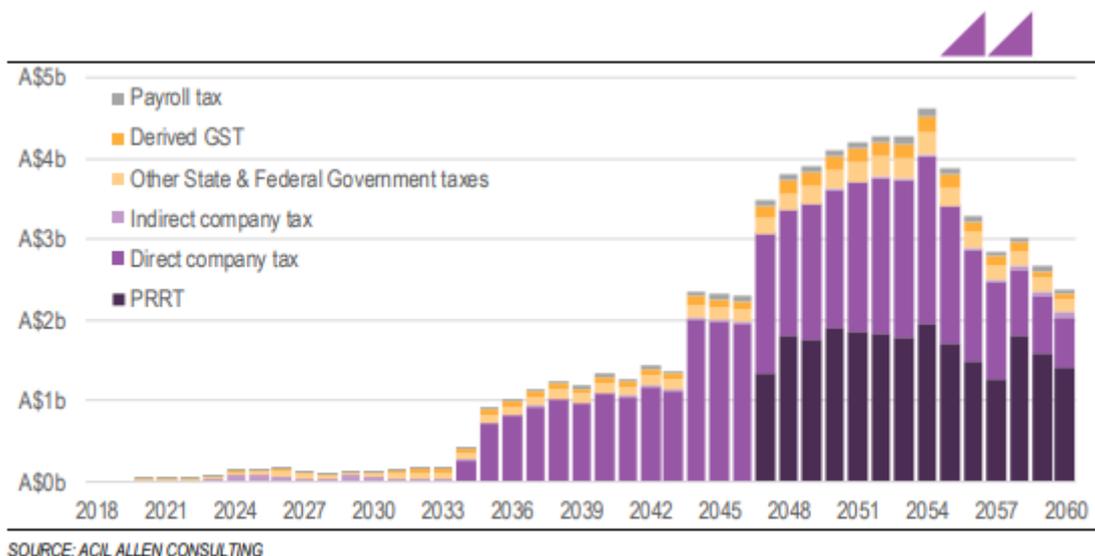
now-government gave “in-principle support” for royalty holidays to hasten development while in opposition.<sup>25</sup>

The “preliminary” modelling commissioned by the gas lobby shows that as well as very small tax benefits for the South Australian government over the entire project lifespan, the Commonwealth government will also receive little benefit until the mid-2030s.<sup>26</sup>

The taxation graph from the modelling is replicated in Figure 2 below. In the mid-2030s, total tax payments are predicted to be about \$1 billion. For reference, that represents about 0.2 percent of the current Commonwealth Budget.

Oil production plateaus from the early 2030s, but no Petroleum Resource Rent Tax payments are expected until 2047. In the late 2040s, total tax payments are predicted to peak at about \$4.5 billion before quickly falling again. That includes indirect taxes. Taxes paid just by those drilling exceed \$4 billion in only one year.<sup>27</sup> Assuming even modest growth in the Australian economy (and Commonwealth budget) of 2 percent per year, total payments as a result of drilling the Great Australian Bight would never exceed even half a percent of Commonwealth revenues in a given year.

**Figure 2: Contribution to real taxation, base case development scenario, A\$ billion**



<sup>25</sup> Russell (2014) *SA gas producers will get a five year royalty holiday under Labor’s plan for the resources sector*, <https://www.adelaidenow.com.au/business/sa-business-journal/sa-gas-producers-will-get-a-five-year-royalty-holiday-under-labors-plan-for-the-resources-sector/news-story/7bc5b6f34d429f9d6e2de514c6a8293f>

<sup>26</sup> ACIL Allen Consulting (2018) *Petroleum development in the Great Australian Bight: A preliminary view of the economic impact of development*, pp. iii, 30–31

<sup>27</sup> ACIL Allen Consulting (2018) *Petroleum development in the Great Australian Bight: A preliminary view of the economic impact of development*, pp. iii, 14–15

Source: ACIL Allen Consulting (2018) *Petroleum development in the Great Australian Bight: A preliminary view of the economic impact of development*, p. 30,  
[https://www.appea.com.au/media\\_release/potential-bight-benefits-great-for-state-and-nation/](https://www.appea.com.au/media_release/potential-bight-benefits-great-for-state-and-nation/)

South Australia is unlikely to receive any noticeable benefit from tax payments as a result of oil and gas production in the Great Australian Bight. What benefits exist will go mostly to the Commonwealth, but even those benefits are small relative to the total Commonwealth budget, would take decades to materialise and are based on “preliminary” modelling commissioned by the oil lobby.

Oil drilling will also have a modest impact on personal incomes in South Australia. Only a quarter of the income benefits are predicted to go to South Australia; in one year drilling is actually predicted to reduce South Australian incomes. “Rest of Australia” receives the majority of the real income benefits, although there are nine years where drilling is predicted to reduce “Rest of Australia” incomes.<sup>28</sup>

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<sup>28</sup> ACIL Allen Consulting (2018) *Petroleum development in the Great Australian Bight: A preliminary view of the economic impact of development*, p. 24

# Risks to other industries

Any potential benefits of oil and gas production in the Great Australian Bight need to be weighed against the risks to other industries from a potential oil spill. Industries that could be impacted by a spill during exploratory drilling or later production include tourism on the regional coastal areas, aquaculture and wild fisheries.

We have examined job numbers in these potentially impacted areas, to contrast these industries with the potential size of an oil extraction industry in the bight.

**Table 1: Employment in at-risk areas, by state and industry**

	Tourism	Aquaculture and fisheries	Total
<b>South Australia</b>	8,900	1,536	10,436
<b>Victoria</b>	8,300	873	9,173
<b>Tasmania</b>	5,300	2,113	7,413
			<b>27,022</b>

While some oil spill models indicate spills would also reach Western Australia and New South Wales, we have focused on the three states most at risk: South Australia, Victoria and Tasmania. Between these three states, up to 27,022 tourism, aquaculture and fisheries jobs could be threatened by an oil spill from drilling in the bight.

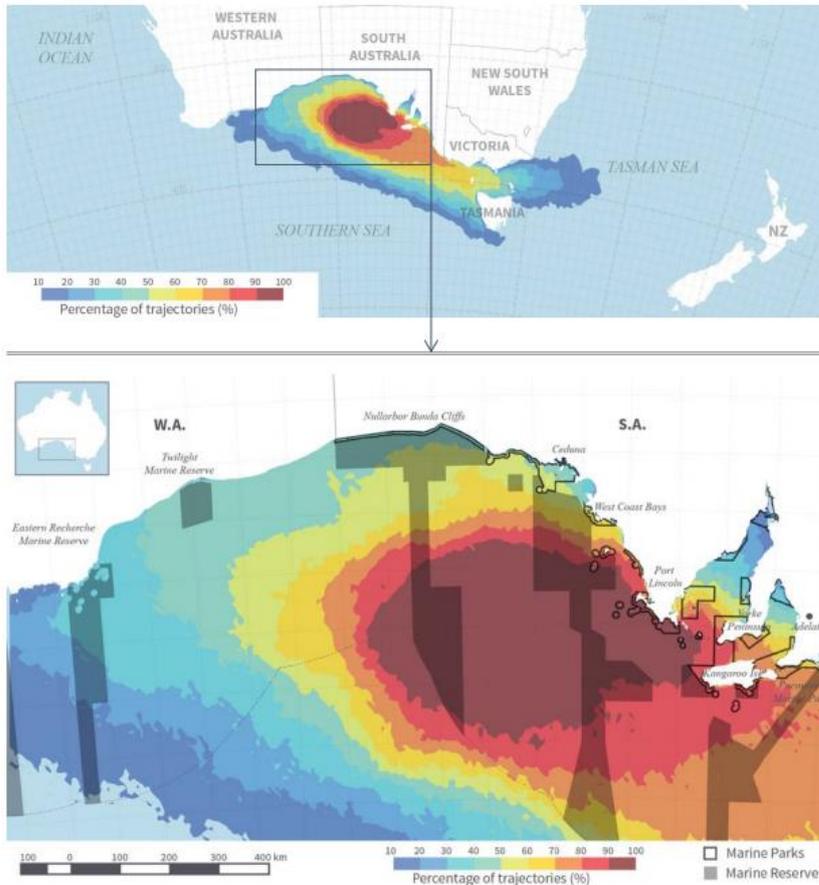
## OIL SPILL MODELLING

Figure 1 and 2 respectively depict the probability of socioeconomic impact at sea after four months of a modelled spill scenario during summer (Figure 1) and winter (Figure 2) with an oiling threshold corresponding to a level that would likely trigger the closure of fisheries. If this modelled spill occurred in summer, a 213,000 km<sup>2</sup> area has an 80% or higher likelihood of having so much oiling that fisheries would close. If it occurred in winter, a 265,000 km<sup>2</sup> area has an 80% or higher likelihood of having so much oiling that fisheries would close.<sup>29</sup> In the smaller maps, the socioeconomic impact analysis is overlaid with state marine parks and Commonwealth marine reserve areas. Several marine reserves and parks are in the area at risk.

<sup>29</sup> Lebreton (2015) *Stochastic analysis of deep sea oil spill trajectories in the Great Australian Bight*, <https://www.aph.gov.au/DocumentStore.ashx?id=440f4b65-12c9-47dd-b424-18d7ba047406&subId=411521>



**Figure 4: Socioeconomic impact analysis for winter after 4 months**



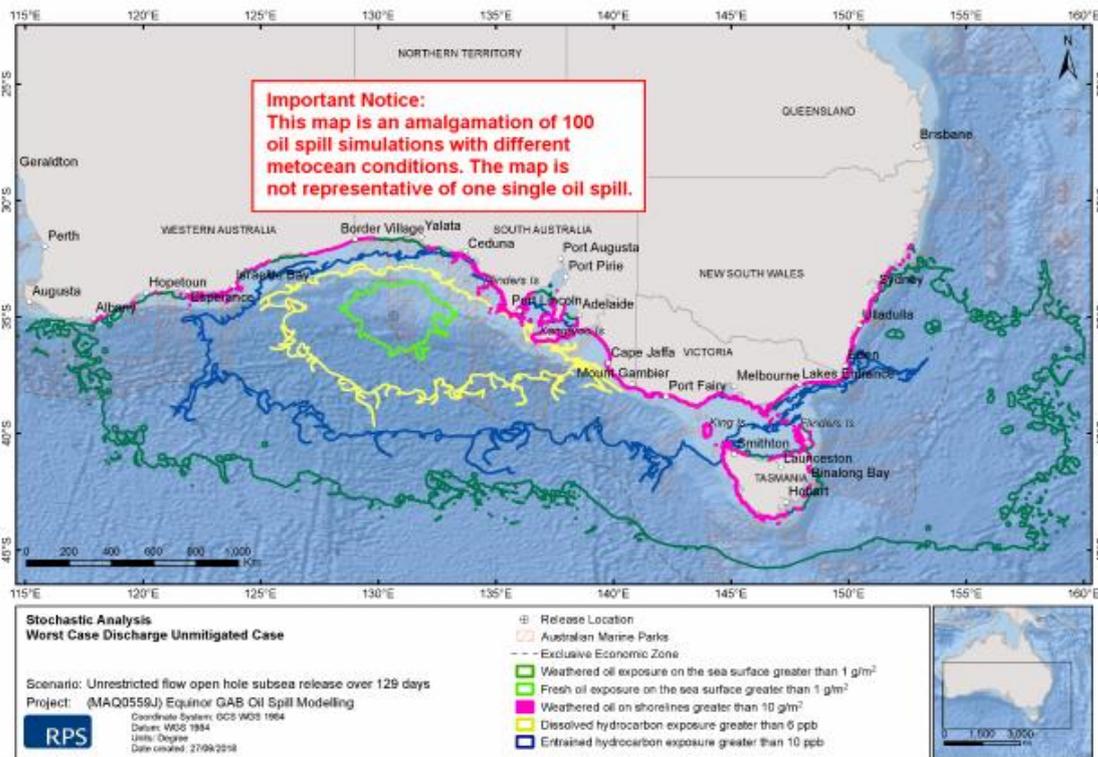
The yellow marked areas show where there would be a 50 percent chance to have an oil thickness level above the threshold at the surface.

During summer (Figure 1) the prevailing currents would take the oil towards the Western Australian coastline. In winter (Figure 2) the oil could impact the Victorian west coast, King Island, and fisheries to the north west of Tasmania.

Equinor has also conducted oil spill modelling as part of its environment plan. While the Lebreton analysis above is more detailed, looking at surface oil of 0.1 gram/square metre and above, the Equinor analysis is restricted to surface oil of 1 gram/square metre and above. Even so, Figure 5 shows that worst-case oil spill scenarios could affect coastlines in Western Australia, South Australia, Tasmania, Victoria and New South Wales, with various degrees of oil exposure in most of Australia's southern and south-eastern waters.<sup>30</sup>

<sup>30</sup> Equinor (2019) *Environment plan Appendix 7-1 Oil spill modelling study (RPS): Stromlo-1 exploration drilling program*, p. 76, <https://www.equinor.com/en/where-we-are/gabproject/download-centre.html>

**Figure 5: Greatest extent of oil exposure on the surface, in-water and shoreline contact, produced from the results of 100 unmitigated simulations**



Note: This represents the greatest level of exposure for that location from 100 oil spill simulations. No single spill would necessarily be of this extent.

## SOUTH AUSTRALIA

In South Australia, the state most directly affected, employment from aquaculture in 2016–17 was 594 full-time equivalent positions, largely in the Eyre Peninsula.<sup>31</sup>

Commercial fisheries and aquaculture generated 1,536 direct jobs in 2016, the majority in regional areas.<sup>32</sup>

Tourism directly produced 8,900 jobs in 2018, excluding Adelaide and inland regions. Although it is difficult to determine what impact these industries might suffer from a

<sup>31</sup> Econsearch (2018) *The Economic Contribution of Aquaculture in the South Australian State and Regional Economies, 2016/17*, p. 10

<sup>32</sup> ABARES (2018) *Australian fisheries and aquaculture statistics 2017*, p. 28, <http://www.agriculture.gov.au:80/abares/research-topics/fisheries/fisheries-and-aquaculture-statistics>

spill, the approximately 10,436 direct jobs in regional “Bight” industries could be put at risk by the development of oil and gas extraction.<sup>33</sup>

**Table 2: Direct employment selected industries, South Australia**

Region	Direct jobs
<b>Tourism (regional)</b>	<b>8,900</b>
Fleurieu Peninsula	3,100
Limestone Coast	1,900
Eyre Peninsula	1,800
Yorke Peninsula	1,300
Kangaroo Island	800
<b>Aquaculture and commercial fisheries</b>	<b>1,536</b>
<b>Grand total</b>	<b>10,436</b>

Source: South Australian Tourism Commission (2019) *Regional Tourism Profiles*, <https://tourism.sa.gov.au/research-and-statistics/regions/regional-tourism-profiles>

194,000 people went whale and dolphin watching in South Australia in 2008, with most watching from land. The 10,000 boat-based and swim-with tourists likely contributed an outsized portion of the over \$1 million spent by watchers, in largely local-owned businesses. Indirect expenditure by whale and dolphin watchers was calculated as much higher, at \$14 million in 2008.<sup>34</sup>

## VICTORIA

Of Victoria’s 12 tourism regions, seven are coastal: the Great Ocean Road, Geelong and the Bellarine, Melbourne, Mornington Peninsula, Melbourne East, Phillip Island and Gippsland. The Great Ocean Road on Victoria’s western coast is closest to the site of Great Australian Bight drilling, and hosts significant coast-based tourism.

Tourism along the Great Ocean Road alone directly employs 8,300 people, which represents 13 percent of regional employment. Last year, 5.5 million visitors spent \$1.3 billion. The total gross regional product from tourism was \$994 million, or 15 percent of the economy.<sup>35</sup> In practice, an oil spill would also likely affect tourism in

<sup>33</sup> South Australian Tourism Commission (2019) *Regional Tourism Profiles*, <https://tourism.sa.gov.au/research-and-statistics/regions/regional-tourism-profiles>

<sup>34</sup> O’Connor, Campbell, Cortez, & Knowles (2009) *Whale watching worldwide: tourism numbers, expenditures and expanding economic benefits*, pp. 163, 171–172, [https://web.archive.org/web/20100304080937/http://www.ifaw.org/Publications/Program\\_Publications/Whales/asset\\_upload\\_file841\\_55365.pdf](https://web.archive.org/web/20100304080937/http://www.ifaw.org/Publications/Program_Publications/Whales/asset_upload_file841_55365.pdf)

<sup>35</sup> Business Victoria (2018) *Great Ocean Road Regional Tourism Summary*, <https://www.business.vic.gov.au/tourism-industry-resources/research/regional-visitation>

Victoria's other coastal tourism regions, but to be conservative only the figures for the Great Ocean Road region have been used here.

The Victorian fishing and aquaculture sectors employed 873 people in 2016.<sup>36</sup>

56,310 people went whale and dolphin watching in Victoria in 2008, with up to 37,190 watching from Warrnambool or Portland via the Great Ocean Road.<sup>37</sup>

In total, 9,173 Victorian jobs in coastal tourism, fishing and aquaculture could be put at risk by the development of oil and gas extraction.

## TASMANIA

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In the Lebreton analysis, modelled oil distribution in the 50 percent range does not meet the shoreline of Tasmania anywhere but King Island. The west coast of King Island is in the 60–70 percent range – that is, for a spill of the type modelled, there would be a 60–70 percent chance of oil reaching the island in quantities sufficient to cause socioeconomic impact, including the likely closure of fisheries.

The Tasmanian fishing and aquaculture sectors employed 2,113 in 2016.<sup>38</sup>

While Bass Strait is the area most likely to be impacted, the modelled oil spill could potentially bracket Tasmania, leaving only the east coast unaffected.

The Tourism and Transport Forum estimates tourism employment across Tasmania's 15 Legislative Council electorates. They calculate tourism employment in the five electorates along Tasmania's north and west coasts at 5,300, employed by 1,900 tourism-related businesses.<sup>39</sup>

24,245 people went whale or dolphin watching in Tasmania in 2008, although the two main watching sites are on the south-east of the island, which is less likely to be affected by a Great Australian Bight oil spill.

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<sup>36</sup> ABARES (2018) *Australian fisheries and aquaculture statistics 2017*, p. 28, <http://www.agriculture.gov.au:80/abares/research-topics/fisheries/fisheries-and-aquaculture-statistics>

<sup>37</sup> O'Connor et al. (2009) *Whale watching worldwide: tourism numbers, expenditures and expanding economic benefits*, pp. 163, 168–169

<sup>38</sup> ABARES (2018) *Australian fisheries and aquaculture statistics 2017*, p. 28

<sup>39</sup> Tourism & Transport Forum (2018) *Business Count and Employment Atlas Tasmania*, <https://www.ttf.org.au/business-count-and-employment-atlas/tas/>

In total, 7,413 Tasmanian jobs in northern coastal tourism, fishing and aquaculture could be put at risk by the development of oil and gas extraction.<sup>40</sup>

**Table 3: Direct employment selected industries, Tasmania**

<b>Region</b>	<b>Direct jobs</b>
<b><i>Tourism (regional)</i></b>	<b><i>5,300</i></b>
Mersey	1,000
Montgomery	1,000
Murchison	1,000
Rosevears	1,200
Windermere	1,100
<b><i>Aquaculture and commercial fisheries</i></b>	<b><i>2,113</i></b>
<b><i>Grand total</i></b>	<b><i>7,413</i></b>

Source: Tourism & Transport Forum (2018) *Business Count and Employment Atlas Tasmania*, <https://www.ttf.org.au/business-count-and-employment-atlas/tas/>

Across South Australia, Victoria and Tasmania, over 27,000 jobs could be put at risk by the development of oil and gas extraction in the Great Australian Bight.

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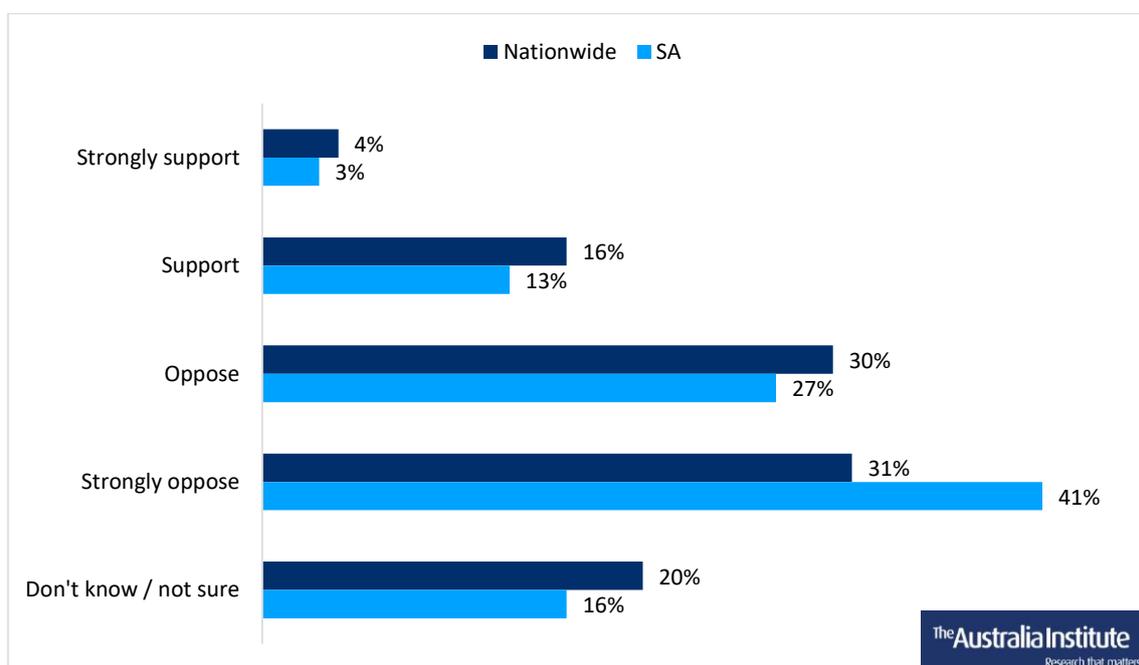
<sup>40</sup> O'Connor et al. (2009) *Whale watching worldwide: tourism numbers, expenditures and expanding economic benefits*, pp. 163, 170

# Popular opinion

In March 2019, The Australia Institute conducted representative national polling on drilling in the Great Australian Bight.

Nationwide, the rate of opposition to drilling was 60%. In South Australia the rate was higher at 68%. Just one in five people (20%) supported allowing oil drilling in the Bight nationally, with 16% support in South Australia.

**Figure 6: Do you support or oppose allowing companies to drill for oil in the Bight?**



Source: The Australia Institute (2019) *Polling – Great Australian Bight*,  
<https://www.tai.org.au/sites/default/files/Polling%20Brief%20-%20March%202019%20-%20Great%20Australian%20Bight%20final.pdf>

In July 2019, The Australia Institute undertook further representative national polling and asked what effect Australians thought drilling for oil would have on four socio-economic and environmental issues: jobs, fishing, tourism and the natural environment.

Most Australians think that companies drilling in the Great Australian Bight will have a positive effect on jobs (57%), with 14% thinking it would have a negative effect and the same number thinking it would have no effect.

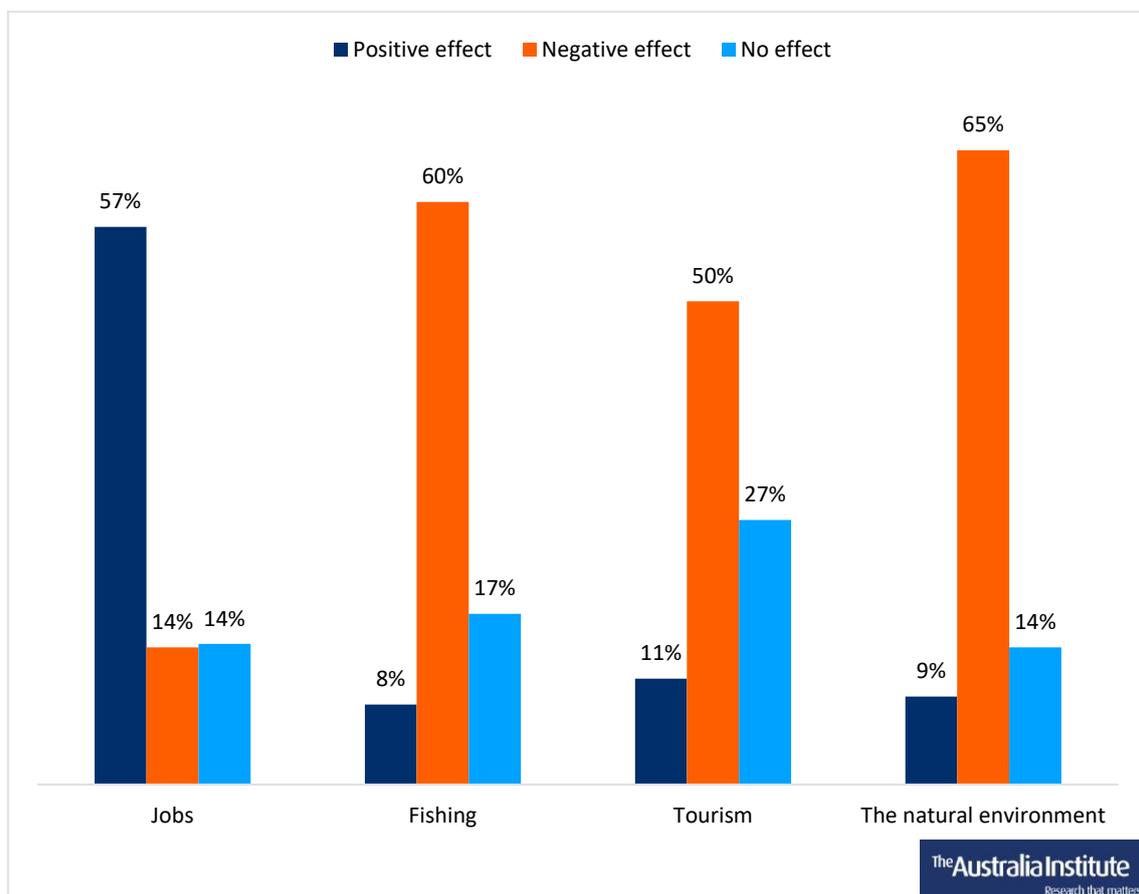
However, most Australians think the effect of drilling on fishing, tourism and the natural environment will be negative.

Three in five Australians (60%) think drilling in the Great Australian Bight will have a negative effect on fishing, more than seven times as many as think that it will have a positive effect (8%).

One in two Australians (50%) think drilling will have a negative effect on tourism, almost five times as many as think that it will have a positive effect (11%).

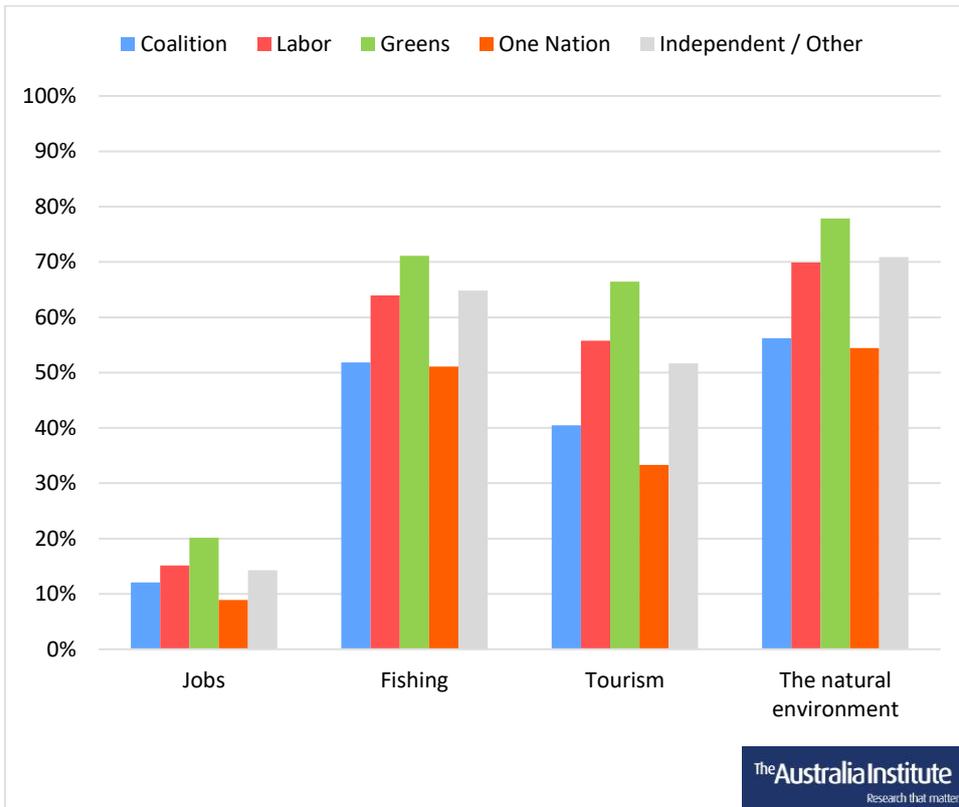
Two in three Australians (65%) think drilling will have a negative effect on the natural environment, compared to fewer than one in 10 (9%) who think it will have a positive effect.

**Figure 7: Effect of drilling in the Great Australian Bight by issue**



Coalition and One Nation voters were less likely to expect a negative effect, and Greens voters were more likely. Overall, however, concern was broadly similar across voters for each political party.

**Figure 8: Drilling would have a negative effect on ..., by voting intention**



# Conclusion

At a time when the world is working to address the damage that fossil fuels are causing the global climate, it seems incongruous to consider expanding oil and gas production into environmentally sensitive areas.

Nevertheless, the costs, benefits and risks of such proposals should all be considered. While proponents and parts of government are anxious to promote the “enormous” economic benefits of oil production, when viewed in the context of the state or national economy, such benefits are marginal. Oil and gas are capital intensive industries that employ few people. Those who would be employed are likely to be FIFO workers, rather than people who live in regional areas.

While oil and gas royalties can be important for state government budgets, decades of subsidy may be necessary before they can be enjoyed. Given the modest contribution of mining and gas royalties to the current South Australian budget, caution should be placed on such subsidies.

In contrast, locally owned, sustainable industries would be placed at risk by oil production in the Great Australian Bight. Tourism, fishing and aquaculture employ over 27,000 people in coastal areas that could be affected by an oil spill.

# Appendix 1: Polling

## Method

The Australia Institute conducted a national survey of 1,464 people between 23 July 2019 and 30 July 2019, online through Dynata (formerly Research Now) with nationally representative samples by gender, age, state and territory, and household income.

The margin of error (95% confidence level) for the national results is 3%.

Results are shown only for larger states.

Voting crosstabs show voting intentions for the lower house. Those who were undecided were asked which way they were leaning; these leanings are included in voting intention crosstabs, but results are also shown separately for undecideds. “LNP” includes separate responses for Liberal and National. “Other” includes Centre Alliance, Jacqui Lambie Network and Independent/Other.

## Detailed results

*What effect do you think companies drilling for oil in the Great Australian Bight would have on:*

### Jobs

	Total	Male	Female	NSW	VIC	QLD	WA
Positive effect	57%	61%	54%	58%	58%	58%	53%
Negative effect	14%	14%	14%	15%	12%	14%	16%
No effect	14%	15%	13%	13%	14%	15%	16%
Don't know / Not sure	14%	10%	19%	14%	16%	12%	14%

	Total	Coalition	Labor	Greens	One Nation	Other
Positive effect	57%	67%	53%	40%	72%	47%
Negative effect	14%	12%	15%	20%	9%	14%
No effect	14%	11%	15%	23%	9%	18%
Don't know / Not sure	14%	10%	17%	17%	10%	21%

### Fishing

	Total	Male	Female	NSW	VIC	QLD	WA
Positive effect	8%	10%	7%	7%	11%	9%	5%
Negative effect	60%	56%	63%	60%	60%	58%	54%
No effect	17%	23%	12%	19%	15%	16%	27%
Don't know / Not sure	15%	11%	18%	14%	15%	17%	14%

	Total	Coalition	Labor	Greens	One Nation	Other
Positive effect	8%	10%	8%	5%	8%	5%
Negative effect	60%	52%	64%	71%	51%	65%
No effect	17%	24%	14%	10%	23%	13%
Don't know / Not sure	15%	15%	13%	13%	18%	18%

## Tourism

	Total	Male	Female	NSW	VIC	QLD	WA
<b>Positive effect</b>	11%	13%	9%	11%	12%	10%	11%
<b>Negative effect</b>	50%	46%	53%	49%	51%	46%	49%
<b>No effect</b>	27%	31%	24%	28%	22%	34%	29%
<b>Don't know / Not sure</b>	13%	10%	15%	11%	16%	11%	11%

	Total	Coalition	Labor	Greens	One Nation	Other
<b>Positive effect</b>	11%	14%	10%	5%	11%	8%
<b>Negative effect</b>	50%	40%	56%	66%	33%	52%
<b>No effect</b>	27%	35%	21%	20%	41%	20%
<b>Don't know / Not sure</b>	13%	11%	13%	8%	14%	20%

## The natural environment

	Total	Male	Female	NSW	VIC	QLD	WA
<b>Positive effect</b>	9%	10%	8%	9%	11%	9%	6%
<b>Negative effect</b>	65%	61%	69%	66%	64%	62%	62%
<b>No effect</b>	14%	19%	10%	13%	12%	17%	21%
<b>Don't know / Not sure</b>	12%	10%	13%	12%	13%	12%	12%

	Total	Coalition	Labor	Greens	One Nation	Other
<b>Positive effect</b>	9%	10%	10%	8%	7%	5%
<b>Negative effect</b>	65%	56%	70%	78%	54%	71%
<b>No effect</b>	14%	20%	9%	8%	23%	11%
<b>Don't know / Not sure</b>	12%	13%	11%	6%	16%	13%