



OFFICE OF THE CHIEF  
EXECUTIVE

Level 12  
25 Grenfell Street  
ADELAIDE SA 5000  
GPO Box 1671  
Adelaide SA 5001  
[www.pir.sa.gov.au](http://www.pir.sa.gov.au)

Our reference: A4941333

Mr Rick Wilson  
Chair  
Agriculture and Water Resources Committee  
Australian Parliament House

Email: [agriculture.reps@aph.gov.au](mailto:agriculture.reps@aph.gov.au)

Dear Mr Wilson

**SUBMISSION TO THE INQUIRY INTO THE AUSTRALIAN AQUACULTURE SECTOR**

I write to provide a submission to the inquiry into the Australian aquaculture sector, with particular reference to the terms of reference which set out the issues the Committee is investigating:

1. the nature and current status of Australia's aquaculture sector;
2. opportunities and barriers to the expansion of the aquaculture sector, including ability to access capital and investment;
3. opportunities to streamline and increase the effectiveness of the current regulatory frameworks that govern aquaculture activities in Australia; and
4. the ability for businesses to access and commercialise new innovations to expand aquaculture.

The submission provides comment on each of the four Terms of Reference in relation to the current and prospective aquaculture industry of South Australia.

South Australia strives to be at the forefront of aquaculture planning and development, noting the *Aquaculture Act 2001* is the only legislation of its kind in Australia dedicated to aquaculture.

The Department of Primary Industries and Regions (PIRSA) is the State Government agency responsible for the regulation and management of the State's aquaculture industry on behalf of the Minister responsible for the *Aquaculture Act 2001*.

The following links provide an overview of the regulatory framework and the aquaculture industry in South Australia:

[https://pir.sa.gov.au/data/assets/pdf\\_file/0007/221992/Aquaculture\\_SustainMqmet.pdf](https://pir.sa.gov.au/data/assets/pdf_file/0007/221992/Aquaculture_SustainMqmet.pdf),

[https://pir.sa.gov.au/data/assets/pdf\\_file/0007/283543/PIRSA16\\_B5\\_Aqua\\_Regs.PDF](https://pir.sa.gov.au/data/assets/pdf_file/0007/283543/PIRSA16_B5_Aqua_Regs.PDF))

[https://pir.sa.gov.au/data/assets/pdf\\_file/0008/221993/Aquaculture\\_IndustryBooklet.pdf](https://pir.sa.gov.au/data/assets/pdf_file/0008/221993/Aquaculture_IndustryBooklet.pdf)

The objects of the *Aquaculture Act 2001* are:

- to promote ecologically sustainable development of marine and inland aquaculture
- to maximise the benefits to the community from the state's aquaculture resources
- to ensure the efficient and effective regulation of the aquaculture industry.

The *Aquaculture Act 2001* establishes a broad framework for the regulation of aquaculture in South Australia by:

- defining aquaculture as the farming of aquatic organisms for the purposes of trade, business or research
- authorising aquaculture by setting the parameters within which it can occur
- enshrining the principle of ecologically sustainable development (ESD)
- providing for existing and future aquaculture industries through the planning and development of aquaculture policies
- maintaining requirements for aquaculture leases and licences.

#### The nature and current status of Australia's aquaculture sector

South Australia is home to a well-established and highly developed seafood industry, with the state's aquaculture sectors producing high value niche products, particularly Southern Bluefin Tuna, Yellowtail Kingfish, Barramundi, Oysters, Mussels and Abalone. Marine algae culture is the newest sector to be established in South Australia, with farming trials commencing in 2021 and the potential for a high value product. Other secondary industries have also grown up around the aquaculture industry, creating additional economic and employment benefits for the State (see [https://pir.sa.gov.au/\\_data/assets/pdf\\_file/0003/297372/ZONING\\_IN\\_Aquaculture\\_Report\\_2015-16\\_optimised.pdf](https://pir.sa.gov.au/_data/assets/pdf_file/0003/297372/ZONING_IN_Aquaculture_Report_2015-16_optimised.pdf)).

In South Australia, there are approximately 500 aquaculture licence holders, comprising around 430 marine licence areas (over ~5,000 hectares) and 70 land-based licence areas.

Key features of the South Australian aquaculture industry, primarily marine-based, are:

- premium, high-value species
- livestock traceability and advanced logistical infrastructure
- pristine waters and clean environments
- access to a world-leading research and development institute based in metropolitan Adelaide
- strong policy, regulatory and compliance environment

The most recent economic data for the South Australian aquaculture industry show the state's total value of seafood production (landed) in 2019/20 was \$461.8 million, of which aquaculture contributed almost half (\$229.0 million) and wild-catch fisheries made up the balance (\$232.8 million). Total aquaculture production was approximately 17,500 tonnes.

- In aggregate, Tuna is the largest single sector in the state's aquaculture industry, accounting for almost 60% of the state's gross value of aquaculture production in 2019/20.
- The other three main sectors in 2019/20 were Marine Finfish (17%), Oysters (11%) and Abalone (5%).

The Landbased sector is the most diverse of the South Australian aquaculture industry in terms of farming systems and culture species. The 70 Landbased aquaculture licences in South Australia, comprise private businesses, hatcheries (Abalone, Oysters and Finfish), educational and research facilities as well as Tourism and hobby farm businesses. Licences are categorised based on the level of work required by PIRSA to manage the risks associated with the activity. The criteria for each category are listed below:

- Category A: Small scale operators, which do not discharge wastewater off site, and require minimal aquatic animal health legislation requirements and environmental monitoring e.g. yabby.

- Category B: Small scale operators, which may potentially discharge some waste water off-site, or farm a species with applicable aquatic animal health legislation e.g. native finfish.
- Category C: Intensive and/or large-scale operators with waste water discharge off-site and/or farm a species with applicable aquatic animal health legislation e.g. oyster hatcheries.
- Category D: Intensive and/or large-scale operators with waste water discharge off-site into the marine environment and/or farm a species with applicable aquatic animal health legislation e.g. abalone hatcheries.

Landbased aquaculture licences are located throughout South Australia using a number of production systems (pond and dam culture, recirculating aquaculture systems and flow-through systems) to farm a large variety of freshwater species (Barcoo Grunter, Barramundi, Brown and Rainbow Trout, Golden and Silver Perch, Murray Cod, Marron and Yabbies), and marine species (Abalone, Oyster and Yellowtail Kingfish) as well as a variety of ornamental aquarium species and microalgae species.

In 2019/20, the South Australian aquaculture industry employed approximately 1,084 full time equivalents in direct farm and downstream activities.

South Australia has developed legislated aquaculture zone policies for State waters which set out considerations for aquaculture that are specific to the environmental, sociological or geographical characteristics of the area zoned. Importantly:

- Aquaculture zones prescribe maximum hectares available for development, the class of species permitted for the purposes of aquaculture and in some cases total permitted biomass. There is currently twelve aquaculture zone policies prescribed in South Australia, which represent management areas where aquaculture is excluded or permitted.
- The areas zoned through aquaculture zone policies occupy approximately 425,024 hectares (or 7%) of State waters.
- Ten of these zone policy areas are located off the coast of the Eyre Peninsula, one off the western side of the Yorke Peninsula and one in the State's south east.
- More than half (52%) of the area zoned through aquaculture zone policies comprise aquaculture exclusion zones which prohibit aquaculture activities. Exclusion zones generally include sensitive habitats or areas that have been identified as important for other users of the marine environment (e.g. commercial and recreational fishers). The remaining 48% is set aside to allow aquaculture production to occur and are known as aquaculture zones.
- Between 5-10% of an aquaculture zone is generally allocated for aquaculture at any one time. This equates to approximately 0.2% of State waters currently available for aquaculture, of which 0.06% were subject to aquaculture leases in 2019/20.

#### Opportunities and barriers to the expansion of the aquaculture sector, including ability to access capital and investment

The South Australian Government Growth State initiative aims to achieve an increase in Gross State Product (GSP) by an average annual rate of three (3) per cent. South Australia is well placed to lead that growth as it is the only jurisdiction with dedicated legislative framework (the *Aquaculture Act 2001*, the *Aquaculture Regulations 2016* and associated policies) which are further supported by relevant fisheries and livestock legislation.

In late 2020, the South Australian Government established a Seafood Advisory Forum as a policy forum for key sectors of the seafood industry (including commercial fishing, charter fishing, recreational fishing, Aboriginal traditional fishing, aquaculture and seafood processing). The Forum's mandate is to develop a strategic 10-year Seafood Growth Plan with a clear vision for the seafood sector and establish attainable goals to achieve that vision; this includes the aquaculture sector.

The Australian Seaweed Institute recently authored the National Seaweed Industry Blueprint (<https://www.agrifutures.com.au/product/australian-seaweed-industry-blueprint-a-blueprint-for-growth/>) which identified key gaps and barriers to seaweed industry growth, based on stakeholder consultation, review of previous AgriFutures Australia reports, and other relevant reports on the Australian seaweed industry and the broader aquaculture sector. Resources and funding for addressing key gaps and barriers outlined in such industry blueprints on a state and national level facilitate the ability of aquaculture businesses to develop their respective industries.

PIRSA understand that developing or upgrading hatcheries and/or nurseries across the State would support growth in most aquaculture sectors and facilitate stock enhancement programs for recreational and commercial fisheries. This would facilitate industry co-investment to develop, reinvigorate, or expand South Australia's production of marine and freshwater fingerlings for recreational, commercial, or conservation purposes. An example of this was the significant South Australian government investment (~\$400,000) to upgrade local oyster hatcheries and to establish new oyster hatcheries in 2016 in response to the outbreak of Pacific Oyster Mortality Syndrome (POMS) in Tasmania. This enabled local production of oyster spat for our industry, which was previously largely sourced from Tasmania. With the exceptions of Pacific Oyster and Yellowtail Kingfish, access to hatchery-reared species is limited in South Australia, which can limit production and increases biosecurity risks to the State through importation of livestock from hatcheries located in other jurisdictions.

Uncertainty around the ramifications of nutrient input to surrounding environments, particularly seagrasses and benthic communities, are one of the largest impediments to enabling the finfish (tuna and Yellowtail Kingfish) aquaculture industry to expand. Consequently, aquaculture farms have strict production limits (i.e. biomass) based on conservative measures and are required to monitor environmental conditions. Further research and improved regional environmental monitoring programs would provide the confidence for regulators and managers to reduce conservative decisions where appropriate. This also demonstrates applied aquaculture research can enable development and innovation that de-risks commercial investment.

The larger marine aquaculture sectors in South Australia have representation through an industry association which facilitates the exchange of information and research between members and the government. The lack of an equivalent association and communication for the smaller marine based sectors and land-based aquaculture sector is likely to limit further expansion opportunities.

In South Australia, an industry assistance framework available to the aquaculture sector places a strong emphasis on supporting proposals that have broad benefits for an industry sector or a number of businesses, so as to maximise economic development benefits resulting from public investment. Three main funds are available to support economic development through the current industry assistance framework:

*Regional Growth Fund*

- Designed to unlock new economic activity in South Australia's regions, to deliver critical economic infrastructure to create direct benefit across regional industries, and to strengthen regional communities. In 2020/21, \$15 million has been allocated to support the Regional Growth Fund Competitive Grants (up to \$5

million) and \$10 million for the Minister for Primary Industries and Regional Development to commit to strategic regional growth projects.

*Research, Commercialisation and Startup Fund*

- Supports researchers, entrepreneurs and businesses to accelerate their progress with funding from the South Australian Government.

*Economic and Business Growth Fund*

- Promotes economic growth by encouraging growth of existing businesses, developing new industries, building international connections, and attracting foreign and national direct investment. This fund aims for industry-wide, sector-wide or economy-wide outcomes, rather than benefits to just one company or small supply chain.

Opportunities to streamline and increase the effectiveness of the current regulatory frameworks that govern aquaculture activities in Australia

South Australia has taken a strategic approach to aquaculture regulation and seeks to proactively plan for the future growth and expansion of the industry. While competition for, and access to, South Australia's natural resources is increasing, the government is supporting the efficient and effective use of these resources through sound policies and planning and a one-stop-shop approach to aquaculture administration. A one-stop-shop approach involves PIRSA coordinating referrals and consultation with other government departments, key stakeholders and the wider community.

The South Australian legislative framework for aquaculture is not without limitation nor red-tape which is a key area for both industry and government to address to ensure the efficient and effective administration of aquaculture. Known limitations with this framework includes restrictions on aquaculture species (and area) within aquaculture zone policy areas, farming structures and the associated farming methods.

Review of key legislation and policies to facilitate red-tape reduction will be key to unlocking the potential for significant growth in the aquaculture industry sector and improved administration and processes within it. One example of red-tape reduction is the current review being undertaken by PIRSA to review the *Aquaculture Act 2001* to include aquaculture-related tourism developments. The aim of the review is to allow such aquaculture-related tourism developments to be assessed by PIRSA and not require development approval by under the *Planning, Development and Infrastructure Act 2016*.

Because marine-based aquaculture occurs in State waters where other activities are also permitted and undertaken, there can be, and often is, duplication in application assessments between government departments (e.g. development approvals for aquaculture outside aquaculture zones). These can be managed, in part, through early communication and engagement to minimise delays in approvals, but ultimately may require a review of the legislation. Recent opportunities to provide input into legislation reviews (e.g. through the development and implementation of the *Planning, Development and Infrastructure Act 2016*) have provided PIRSA with some ability to minimise duplication in approvals relating to aquaculture.

Other development applications that may impact aquaculture (e.g. development of new marinas, ports and desalination plants, dredging works or shifting large quantities of sand to replenish coastline) are also the subject of formal and informal referrals processes from the relevant authority. In these cases, PIRSA is able to inform the process to support and protect aquaculture development. For example, a recent proposal to replenish Adelaide metropolitan beaches from the Port River area posed a significant biosecurity risk to our oyster industry and at the advice from PIRSA, alternative sources of sand were secured for the proposal.

The ability for businesses to access and commercialise new innovations to expand aquaculture

Access to scientifically sound research, development and innovation is critical for expansion of the aquaculture industry. In South Australia, the industry has access to world class experts based at the South Australian Research and Development Institute (SARDI), the research division of PIRSA. SARDI research services and facilities are available to external researchers and industry on a fee for service basis. Industry also have the opportunity to work with Flinders University and the University of Adelaide or other private consultants who are available in South Australia.

The culture of marine algae has tremendous potential as the next aquaculture sector to be established in South Australia. However, little is known about how to successfully grow the desired species. Recently, SARDI has partnered with industry to investigate suitable methods and infrastructure designs for growing algae in South Australia. This partnership has significantly accelerated the potential of this new industry.

If you have any queries regarding this matter, please contact Professor Gavin Begg, Executive Director of PIRSA Fisheries and Aquaculture Division by phone on (08) 8429 0960 or email at [Gavin.Begg@sa.gov.au](mailto:Gavin.Begg@sa.gov.au)

Yours sincerely

Michelle Edge  
**CHIEF EXECUTIVE**

24 May 2021