



Government of **Western Australia**
Department of **Fisheries**

Aquaculture in Western Australia

Industry Overview

August 2015

Growth of Aquaculture

Aquaculture is the world's fastest-growing food production sector; it is set to overtake capture fisheries as the major source of seafood and projected to provide 62 per cent of global seafood by 2030. According to the United Nations Food and Agriculture Organisation (FAO), the global demand for seafood is increasing and capture fisheries are at, or may have exceeded, their maximum sustainable yield; therefore, to meet future demand, the growth of aquaculture production will need to increase.¹

Largely driven by growth in Atlantic salmon production in Tasmania, the value of Australian aquaculture production was \$1 billion in 2012-13 and accounted for 43 per cent of the value of Australian fisheries production.² Over that period, the value of Australian wild catch was \$1.4 billion.

The largest Australian aquaculture industry sectors are those producing Atlantic salmon in Tasmania and southern bluefin tuna in South Australia. Atlantic salmon aquaculture, worth nearly \$500 million in 2013, now comprises the most valuable fisheries sector in Australia in terms of value.

¹ World review of fisheries and aquaculture; the State of World Fisheries and Aquaculture 2014.

² ABARES, December 2014, *Australian Fisheries and Aquaculture Statistics 2013*.

Aquaculture Production in Western Australia

The total value of WA commercial fisheries production in 2012-13 was \$427 million with aquaculture (including pearling) contributing \$96 million.³

Aquaculture will likely drive any substantive growth in WA fisheries production. Based on the most recent published data, the estimated value of WA aquaculture (excluding south sea pearl oysters) has increased from approximately \$10 million in 2006-07 to \$16.8 million in 2013-14.

The pearling industry is a strong performer and an important part of the WA aquaculture industry. Recent figures indicate the pearling industry is recovering from the effects of the 2008 global financial crisis and there is a positive outlook for the sector in WA.



Aquaculture Industry Growth and Opportunities in WA

The aquaculture industry is growing and diversifying in WA and there are signs growth will continue. Growth is anticipated in “performing sectors” likely to be represented by marine species groups such as finfish and shellfish such as abalone. The emergence of new technologies and sectors will further diversify the industry.

An expanding aquaculture industry creates upstream and downstream businesses such as feed manufacturing, equipment manufacture, processing and value adding, particularly in regional areas. Direct and indirect economic benefits of aquaculture to WA will accrue via new sales revenues, capital expenditure, direct and indirect employment and input and supply sources from local services.

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In contrast to the status of many global fisheries, the majority of wild-capture fisheries in Western Australia is in a healthy condition and achieving acceptable catch ranges and sustainability outcomes.

Aquaculture Development Zones

Under the *Fish Resources Management Act 1994*, the Minister for Fisheries may declare an area of WA waters to be an Aquaculture Development Zone. The Government has provided funding of \$1.85 million for the establishment of two Aquaculture Development Zones, in the Kimberley and Mid-West regions of WA.

Aquaculture development zones provide investment-ready platforms for commercial development with environmental approvals secured. The Kimberley and Mid-West zones will facilitate the large-scale production of marine finfish. Future zones, if established, may focus on other species groups such as marine shellfish.

The industry has welcomed the Government's commitment to establish aquaculture development zones, which it believes will catalyse commercial investment.

Kimberley Aquaculture Development Zone

The Kimberley Aquaculture Development Zone was declared in August 2014. New investment in production and the construction of a regional marine finfish hatchery will lead to increased employment and economic diversification in the regional area. Establishment and development of a large-scale aquaculture industry in the Kimberley will also provide diversified opportunities for associated businesses.

Mid-West Aquaculture Development Zone

The process to establish the Mid-West Aquaculture Development Zone is on schedule for completion in mid-2016. Following the finalisation of technical, environmental and modelling studies, the Department of Fisheries expects to submit a Public Environmental Review document for the zone to the Environmental Protection Authority for assessment during late 2015.

Marine Finfish

The marine finfish sector is one considered to have significant capacity for future growth. Consistently identified as providing the greatest opportunity to significantly increase fisheries production value in WA, marine finfish aquaculture offers the ability to produce food from our oceans as we do from our lands. WA is a leading agricultural food producer in Australia and the opportunity to lever production of farmed food from the ocean beckons.



Yellowtail Kingfish

The Mid-West region is recognised as an area with sustainable competitive advantages for large-scale marine finfish aquaculture, as evidenced by Government commitment to an Aquaculture Development Zone in the region. The Mid-West Development Commission (MWDC) strongly supports the opportunity to develop marine finfish aquaculture, which it has identified as a potential new economic driver in the region. There is long established marine base and infrastructure in the Mid-West region that can support an aquaculture industry.

A large-scale project in the Mid-West would require significant commercial investment in the order of \$20-30 million. To attract this level of commercial funding and ensure the long-term viability of the industry, it will be necessary to de-risk aquaculture projects by, among other things, maintaining a suitable level of capability in fish health services and improving hatchery capacity.

The MWDC has secured \$1.3 million funding through the WA Government's Royalties for Regions program for a two-year yellowtail kingfish pilot project. The project will comprise a second grow-out trial to validate key assumptions (such as growth rate, food conversion efficiency and stocking densities), generate further information and provide an opportunity to secure a major industry partner.

The project will build on substantial earlier work undertaken by Government and industry and is being conducted as part of a broader development strategy for the marine finfish aquaculture sector in the Mid-West.

Barramundi

Marine Produce Australia Pty Ltd (MPA) is currently the main contributor (excluding south sea pearls and marine algae) to aquaculture production in WA. MPA operates the largest barramundi farm in Australia and its ocean-grown product is favoured in the Australian market for its quality and consistency. Due to the remoteness of its aquaculture site, MPA requires economies of scale and certainty of tenure to secure investment.



The production of barramundi in the Kimberley is expected to increase with declaration of the Kimberley Aquaculture Development Zone, with MPA now able to rapidly expand its operations. This will increase GVP, jobs and other economic opportunities in the Kimberley and WA.

There is also the possibility of attracting new entrants to the industry. New investment in both production and in the development of a local barramundi hatchery and nursery will be required and will lead to increased employment in the regional area. A large-scale aquaculture industry in the Kimberley will provide diversified opportunities for associated businesses.

Marine Shellfish

Abalone

Australian abalone is a high-value, highly-prized seafood delicacy in Asia, where quality outranks price in the eye of the consumer. This is essential for aquaculture in Australia where labour costs are among the highest in the world.

The abalone aquaculture sector is demonstrating strong growth prospects on the south coast of WA.



The abalone aquaculture sector in WA currently produces several million abalone spat per annum. This capacity could be expanded rapidly with availability of suitable ocean sites and land access noting the 'build' time for the required facilities is quite rapid. As land and ocean-based grow-out has been proven on a smaller scale in WA, the expansion of this industry is leading to a significant increase in production.

Mussels and Oysters

The lack of availability of seed stock of mollusc species (such as non-*Pinctada maxima* pearl oysters, mussels, scallops and edible oysters) is currently an impediment to the commercial development of this sector in WA. The Aquaculture Council of WA has identified an opportunity for the establishment of a multi-species mollusc hatchery with the capability of providing commercial quantities of seed stocks for these species and funded a review of the feasibility of a hatchery. The next stage of this investigation, which is now under way, involves the development of a Business Plan for a multi-species hatchery to determine economic viability.

Marine Prawns

An Australian company is currently developing a project proposal for the industrial-scale production of marine prawns in northern Australia. The project contemplates large-scale land-based farms producing marine prawns (*Penaeus monodon*) and various other marine and freshwater finfish species. Such a project would have major beneficial regional and local impacts, through providing sustainable opportunities for employment and regional economic diversification.

Other Species

Freshwater sectors, which include crustaceans such as marron and various freshwater fish species, contribute to the diversity of WA aquaculture and may have the capacity for some future growth in production and value.

WA's iconic marron industry yields a modest volume of product; however, numerically its producers comprise the State's largest sector. Income from this industry sector

diversifies and supplements income on many family farms throughout the south west and contributes significantly to local economies.

Other emerging sectors with capacity for growth include species such as coral, live rock and artemia; and new species groups such as kelp and seaweeds may emerge, though initially on a relatively small scale.

Aquaculture and Recreational Fishing Enhancement

Many recreational fish stocking enhancement projects have been completed or are under way, including:

- annual trout stocking program in south-west waterways;
- Lake Kununurra barramundi restocking project;
- Swan and Canning rivers prawn restocking;
- trial mulloway restocking on the west coast;
- trial restocking of greenlip abalone on the south coast; and
- restocking of Roe's abalone on the west coast.

Subject to funding, further proposals for stock enhancement projects and a possible extension of the artificial reef network in WA are likely. This work could be expanded and structured around dedicated aquaculture activities or facilities such as privately funded artificial reefs for abalone grow-out.

Fish Health

Fish health comprises a particularly important element of aquaculture production. Aquaculture stocks can be vulnerable to diseases arising from adverse impacts of natural, environmental and technological conditions. A strong fish health capability and the provision of effective diagnostic services is a key priority for Government in WA. Through its Fish Health Section (FHS), the Department of Fisheries has provided considerable support to industry in the past and this will continue into the future.

The activities of the FHS are focused on maintaining the State's ability to adequately recognise and diagnose a range of notifiable disease threats; it provides laboratory-based diagnoses of known diseases and continues to develop its strategic capacity to identify emerging diseases associated with aquaculture.

Biosecurity management expertise is also available in the Department of Fisheries to complement the investment in fish health services.

Possible future fish health initiatives include:

- services to identify emerging diseases associated with aquaculture and to support industry development through routine veterinary field and inspection services;
- development of international collaborations in aquaculture disease identification and treatment to ensure technology transfer and development of networks of expertise to meet future requirements; and
- introduction of a web-based fish mortality reporting system.

Streamlining Regulation

The Department of Fisheries continues to improve the efficiency and transparency of regulatory processes through initiatives such as the establishment of Aquaculture Development Zones.

To further support aquaculture industry development over the coming years, the Department of Fisheries will continue to focus on:

- legislative and regulatory processes including policy development and assessment of authorisations and leases;
- managing environmental issues through Management and Environmental Monitoring Plans;
- management of Aquaculture Development Zones according to the relevant integrated management framework; and
- industry consultation through the Western Australian Fishing Industry Council and the Aquaculture Council of WA.

Noting that assessment by the Environmental Protection Authority is still required for large-scale projects that may have a significant environmental impact, the Department of Fisheries is responsible for the environmental management of aquaculture in WA pursuant to a Memorandum of Understanding with the Department of Environment and Conservation (now with the Department of Environment Regulation). The aquaculture management and regulatory regime, which includes a Management and Environmental Monitoring Plan, has simplified and streamlined approvals procedures for many operations.

To provide additional certainty to aquaculture licence holders, the Department of Fisheries will look to grant longer term aquaculture licences and, where possible, align licence terms with that of associated aquaculture leases.

The proposed new *Aquatic Resources Management Act* will maintain a focus on environmental management of aquaculture and seek to streamline regulatory processes.



Third-Party Certification for Aquaculture

There is a growing need for the aquaculture industry to address consumer concerns for food quality and safety (which involves food traceability, certification and eco-labelling), as well as animal health and welfare issues. These issues are growing in importance and considered high priorities by many governments.

The governance of aquaculture has therefore become increasingly important with many industries and countries adopting best-practice management methods, codes of practice and operational guidelines. Effective legislative and management frameworks underpin aquaculture certification schemes that address consumer concerns and cater for the long-term viability of the industry.

The \$14.5 million Government commitment to Marine Stewardship Council certification of the State's commercial fisheries recognises the potential for public funds to also be applied to aquaculture certification.

The Department of Fisheries will continue to work with the WA Fishing Industry Council and the Aquaculture Council of WA as the certification program rolls out.

The Aquaculture Council of WA has taken a strong lead on certification and during 2012-13 conducted a program that:

- completed nine independent third-party audits of aquaculture operations across six industry sectors;
- revised and updated six Environmental Codes of Practice (ECoP), developed one additional ECOP and published them on its website; and
- conducted two internal audit training courses, trained a total of 24 attendees, conducted two lead (external) audit training courses in Fremantle and Melbourne and trained 10 attendees from within the Australian Aquaculture industry with international accreditation certificates (RABQSA).

Investment Attraction and Additional Development Activities

The aquaculture industry bodies generally consider that industry itself is best suited to carry out activities such as investment attraction and coordination of related activities. This function will be successful if it is aligned with and underpinned by strong Government commitment to aquaculture development in WA.

The Government has consequently confirmed its commitment to the development of the aquaculture industry in WA through the release of a Statement of Commitment for Aquaculture.

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