



Aquaculture and Wild Catch



Australia's aquaculture and wild catch industry draws on traditional knowledge and skills, including from the world's oldest civilization, Aboriginal and Torres Strait Islanders, while also adopting the latest technologies to maintain high standards of sustainability, biosecurity and efficiency.

Employs over
18,000 people

Over 6,320 businesses

Over \$8.5 billion in
revenue

Contributes \$1.6 billion to
Gross Domestic Product

(Source: IBISWorld Industry Wizard, 2021)

Between 2021–25 Australian fisheries and aquaculture production value is projected to rise by 1.6% to \$3.21 billion

Source: Mobsby, D, Steven, AH and Curtotti, R & Dylewski, M, 2021, Australian fisheries and aquaculture: Outlook to 2025-26, ABARES, Canberra

With one of the largest coastlines in the world, it is no wonder that Australia has a strong reputation for seafood – with salmonids, rock lobster and prawns the most popular catch. The industry’s positive reputation is underpinned by a dedicated workforce, equipped with a diverse array of skills, that operate across a wide range of environments and job roles, from small scale fishers to big trawlers, from salmon, crocodile, and oyster farms to prawn fisheries.

The national skills standards and qualifications for this industry are overseen by the Aquaculture and Wild Catch Industry Reference Committee (IRC).



Skills Forecast

This year's Annual Update to the IRC Skills Forecast identified specific changes to the industry environment over the past year. It highlighted the impact of COVID-19, industry response and developments, including challenges around trade tensions. It also included information about employers' use of the national SFI Seafood Industry Training Package and qualifications, barriers to training, hiring apprentices and trainees, and reasons behind non-completion rates.

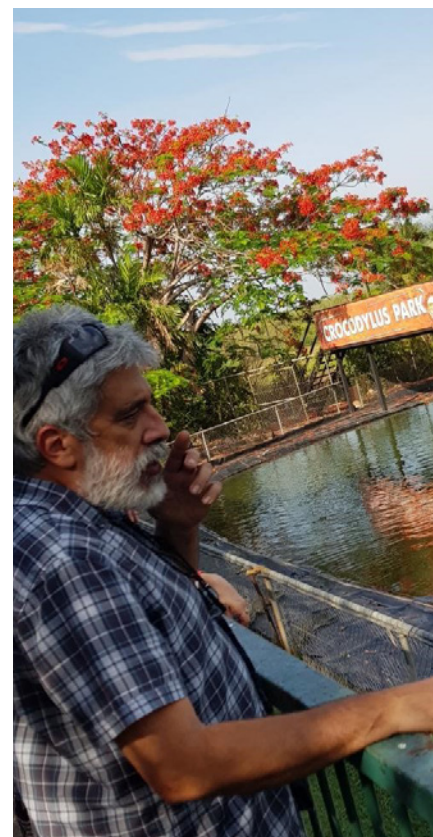
Substantial work was undertaken in 2018-2019 to update skills standards and qualifications for the aquaculture and wild catch industry. This included work to incorporate the essential skills for biosecurity, regulation and compliance, and more recently (2019-2020) addressing the skills gaps in underwater technologies and working with crocodiles. Research to date has shown no skills gaps in the skills standards and therefore no projects were identified for 2021-2022.

COVID-19 has caused many disruptions to the aquaculture and wild catch industry. Restrictions in response to local outbreaks have reduced demand for high quality seafood products, lowering the market price and in turn making it difficult for businesses to retain workers. At the same time, reduction in international flights has caused a logistical issue for exports. With government supports to ease these challenges, the industry is expected to rebound. Trade tensions with China have also caused disruption to the sector, which worked hard to bolster domestic consumption backed by a Seafood Industry Australia (SIA) campaign over

Christmas, with sales of Australian seafood rising by 30%.⁴Country of Origin labelling is one mechanism that is helping industry promote its products to Australian consumers, who are increasingly keen to support local products.

One of the ongoing challenges for the industry is attracting a workforce, with strong competition from the mining industry in Western Australia and a shortage of migrant and visa workers. The Cooperative Research Centre for Developing Northern Australia (CRCNA) estimate that there will be 1,400 to 2,300 new direct jobs in aquaculture over the next 10 years, while there is potential for a 50-fold expansion in area available for freshwater pond aquaculture.⁵ They recognise the role of training and skills development in promoting aquaculture career pathways to fill these jobs and offer opportunities to potential workers.

Aboriginal and Torres Strait Islander communities continue to express a desire to have more economic opportunities around fishing, particularly in their own sea country. It is critical to the future of the industry that issues related to Aboriginal and Torres Strait Islander involvement in aquaculture and wild catch, as identified by the Productivity Commission in 2017, are addressed. Some work to address this is already happening across Australia, with the Queensland Government developing policy to support economic development opportunities for Aboriginal people and communities, and a Pilbara Indigenous community tropical rock oyster project underway in Western Australia which employs and trains Indigenous rangers.



⁴ ABC News, 2021, 'China's lobster ban helped lift Australian Christmas seafood purchases by 30 per cent', viewed April 2021 < <https://www.abc.net.au/news/rural/2021-01-06/christmas-seafood-sales-up-30-pc-after-chinas-ban-on-lobsters/13035636> >

⁵ Cooperative Research Centre for Developing Northern Australia (2020); State of the North 2020; p.26

Completed Projects

The following projects were endorsed by the Australian Industry and Skills Committee (AISC). The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on the national training register (training.gov.au) and available for delivery by registered training organisations (RTOs).

Visit www.skillsimpact.com.au/completed-projects for further details.

Fishtech & Aquabotics Project

Australia's aquaculture industry is adapting its skills to work with a new range of underwater technologies, such as remotely operated vehicles (ROVs), underwater drones and biosensors. Tasks that have previously been performed manually, such as monitoring fish health and environmental conditions and inspecting and repairing nets, can now be done from a control room. These technologies are creating significant improvements across the industry, with increased productivity and sustainability, and better biosecurity and environment controls. As remote technologies become more prevalent most job roles will be impacted, requiring updated skills in digital literacy, data, automation and environmental sustainability.

“Innovation and technological advances are changing approaches to how work tasks are being performed. This in turn is driving the industry to introduce new technology, requiring employees to be adept in utilising the tools and computer programs to drive hardware. The industry therefore needs to prepare for the future and a focus now needs to be on the development of a workforce who is strong in digital literacy.”

Natalie Cheequee, Group Manager
People and Culture, Huon
Aquaculture.

As a result of this project and the input from all involved, national skills standards are now available for working with new remote technologies in the aquaculture and wild catch industries. Industry experts from around the country commented on the draft documents and invited the project team into their workplaces to demonstrate real job tasks and emerging skills needs.

“At Tassal, we use real-time technology and ROVs as a part of our everyday processes. The training documents developed as a part of this project will assist our workers to improve their skill level and work with greater awareness and knowledge.”

Peter Cheesman, WHS Induction
and Training Coordinator Farming





Key Outcomes

- Three skill sets have been developed for aquatic technology induction, aquabotics, and aquatic environmental audit.
- Nine units of competency have been developed, with a focus on the use and future use of technology in the seafood industry. These units will be incorporated as electives into existing aquaculture qualifications, in addition to being available for import to other qualifications. Some units have been developed to meet immediate needs and others are intentionally generic to future proof them and allow for new and emerging technologies to be incorporated into training. These units will be placed as electives in:
 - SFI20119 Certificate II in Aquaculture
 - SFI30119 Certificate III in Aquaculture
 - SFI40119 Certificate IV in Aquaculture
 - SFI50119 Diploma of Aquaculture
 - SFI50219 Diploma of Fisheries Compliance.
- Twenty-three units of competency have been revised so that they are applicable for use in the context of remote technologies.

Work with Crocodiles Project

Working with crocodiles is a complex field, overlapping a number of sectors including conservation and land management, animal care and management, and aquaculture. However, the same foundational skills support safe and sustainable practices for working with crocodiles and their eggs across all job roles, from crocodile farm workers to park rangers, zoo employees, and licensed individuals. Knowledge of diseases, biosecurity management, and the humane treatment of crocodiles are all crucial, as is the ability to perform risk assessment. Building on this, unique expertise is required depending on whether animals are in the wild or in a controlled environment.

It is crucial to understand that crocodile farming and conservation relies on the knowledge of Aboriginal communities who have respected crocodiles as entities and as a source of food for thousands of years. These industries also provide economic benefits for Traditional Owners through employment and royalty payments for egg collection on their land.

Thanks to all those involved in this project, new and revised skills standards are now available to support this developing industry, supporting safe and sustainable practices and the continued participation of Aboriginal communities in the industry across Northern Australia.

“There’s a strong desire for training by community rangers who want additional skills to deal with crocodile management and safety issues. We’ll be putting the new Certificate III in Working with Crocodiles to use as soon as our RTO gets it on scope.”

Dr. Adam Britton, Big Gecko Crocodilian Research, Charles Darwin University, NT

Key Outcomes

- Certificate III in Working with Crocodiles developed.
- Eight skill sets developed, including: Introduction to Working with Crocodiles, Care for Crocodiles in a Controlled Environment, Hatchling and Juvenile Crocodile Care, Crocodile Egg Harvesting, Crocodile Relocation, Crocodile Incident, Crocodile Survey, and Crocodile Public Relations.
- Eleven units of competency were developed with a focus on working with crocodiles and working in crocodile habitats. All of these are featured as core and elective units in the Certificate III in Working with Crocodiles. Some will also be included in elective lists for qualifications in the conservation and land management and animal care and management industries
- Two existing units were deleted – SFI AQU216 Work with crocodiles and SFIPRO303 Slaughter and process crocodiles – as they do not adequately address industry needs.