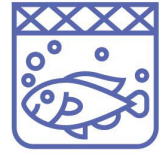


3.6. Aquaculture

Aquaculture

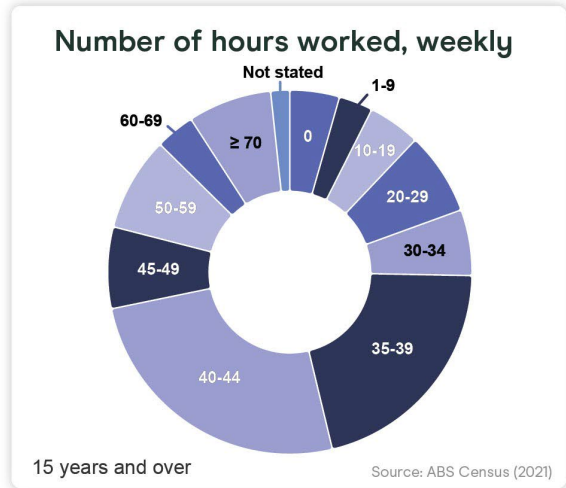
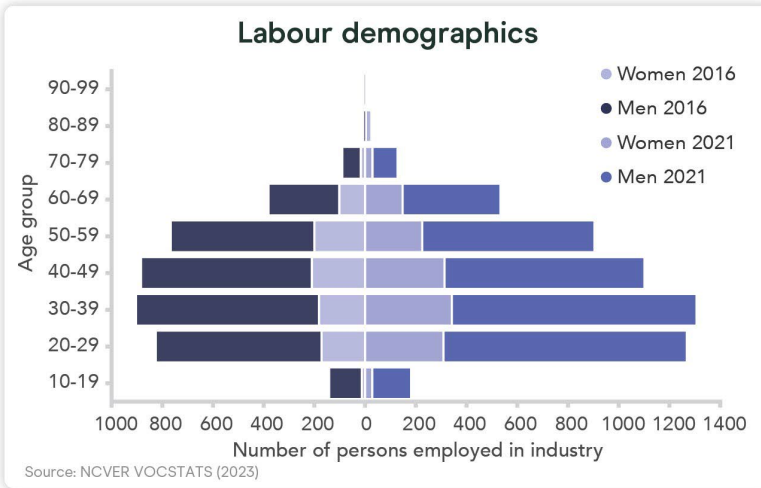
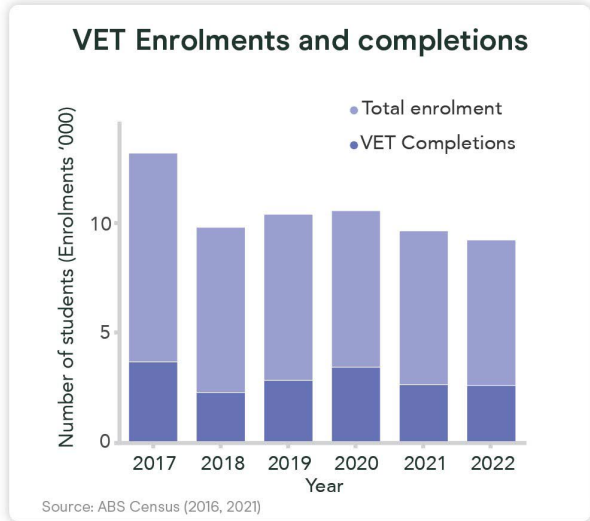
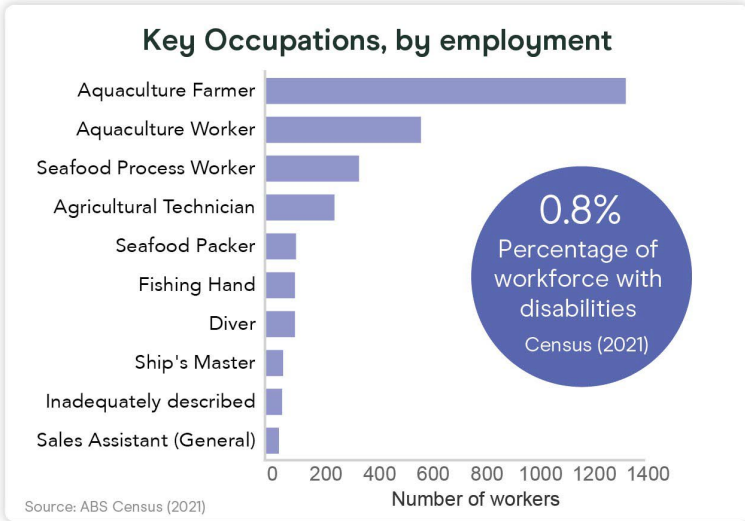
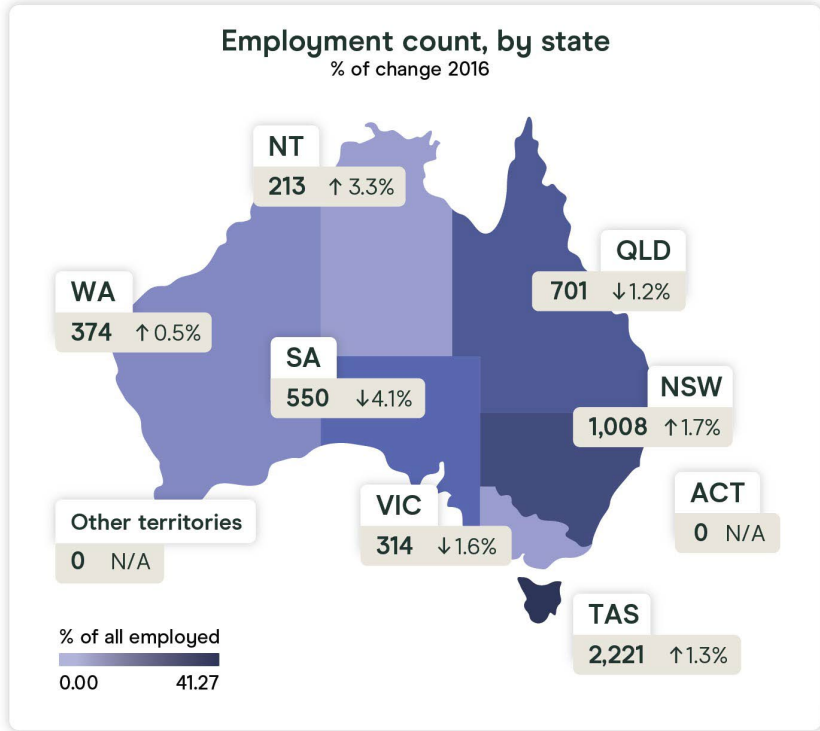
ANZSIC A0201, A0202, A0203



Industry snapshot

\$2,315 M Revenue (2022-2023)	1,271 Establishments (2022-2023)
\$36 M Export value (2022-2023)	26% Women (2021) ↑ 4% from 2016
275 Indigenous workers (2021) ↑ 97 from 2016	11.7% Projected decline in employment (2026)

Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)



3.6.1. Industry sectors (ANZSIC Classes)

- Offshore Longline and Rack Aquaculture
- Onshore Aquaculture
- Offshore Caged Aquaculture

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Declining VET qualification enrolment and completions	High
Lack of workforce diversity	Medium

High level skills in aquatic biosecurity and sustainability are foundational to the aquaculture workforce and Australia’s continuing reputation for producing high quality seafood. This is underpinned by current and emerging practices utilising technology and traceability systems to provide consumers with information on seafood provenance and production methods, inclusive of maintaining aquatic animal health, carbon emission mitigation, and regulatory compliance.

The skills and knowledge applied by the aquaculture workforce are highly contextualised and cannot be immediately transferred from job roles in other industries. The National Training Register details qualifications corresponding to specialised job roles in *aquaculture*. These include Certificates II, III and IV, and Diploma of Aquaculture. Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent aquaculture workers:

Unit title	Unique skills and knowledge
Manage water quality and environmental monitoring in enclosed systems (SFIAQU403)	This unit applies to individuals who develop and implement water quality and environmental monitoring programs and procedures for enclosed systems.
Culture new aquaculture species (SFIAQU511)	This unit applies to individuals who undertake to introduce new aquatic species that has not been previously cultured in the workplace. It includes the ability to research information on new target species, condition broodstock, rear larvae, and analyse and record data.
Conduct an aquatic environmental audit (SFIEMS502)	This unit of applies to individuals who contribute to the development and implementation of aquatic plans and strategies by conducting an aquatic environmental audit that incorporates ecological issues and the management of aquatic species. All work must be carried out to comply with relevant state/territory health and safety, food safety, biosecurity and environmental regulations, legislation and standards.

Design a recirculating
aquaculture system
(SFIAQU510)

This unit applies to individuals who design, upgrade, set up, review and/or modify a recirculating aquaculture system to suit changing circumstances.

3.6.2. Drivers of workforce dynamics

Labour Shortages

The aquaculture workforce in Queensland is projected to increase by over 18% between 2020-21 and 2024-25.³⁶ Similar growth is likely to be experienced in other regions with an established or developing aquaculture industry.

The House of Representatives Standing Committee on Agriculture and Water Resources have detailed evidence of issues in attracting and retaining sufficient skilled labour to the industry, including from industry submissions relating to shortages of skilled labour, and dramatic increases in the number of job advertisements. There was also criticism of the current education and training provided by universities and RTOs.³⁷

The Victorian Skills Authority identified an ageing workforce in aquaculture, leaving fewer workers to provide mentoring and leadership to help develop the next generation of the workforce.³⁸

The National Skills Commission's 2022 Skills Priority List identified state-based shortages of:

- Aquaculture Farmers
- Aquaculture or Fisheries Scientists
- Aquaculture or Fisheries Technicians
- Fisheries Officers
- Aquaculture Supervisors
- Senior Aquaculture, Crop and Forestry Workers nec

However, these shortages are identified primarily in NSW and Queensland, and not in Victoria. The apparent inconsistency between these findings and those of the Victorian Skills Authority will be investigated further.

Digital and automation practices

In the aquaculture industry, underwater drones, and other remotely operated vehicles (ROVs) are used to monitor fish health and environmental conditions and to inspect and repair nets. Industry feedback provided to Skills Impact indicated a high level of demand for training in multiple aspects relating to drones.³⁹

Aquaculture Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, long working hours.
- The adoption of digital technologies, which is augmenting skills and job roles.
- Declining VET enrolments and completions.

Key evidence gaps

- No relevant qualifications outcomes data presented in NCVER's 'VET student outcomes 2022: qualification completer outcomes by qualification'.
- National and state-based jobs and skills priorities data disparities.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(4b)**
- Work with key agencies to assess gaps in jobs and skills shortage datasets and to collaborate on potential solutions. **(1a, 1b)**
- Research on declining enrolments and completions, and other education and training pathways to/within Aquaculture. This may support the identification of barriers to training delivery, skills gaps, duplication in existing training pathways, and the extent to which delivering more graduates may help to alleviate skills shortages. **(1a, 3a)**
- Create a pilot database or tool that identifies similar performance criteria across multiple units of competency that may be trained and assessed simultaneously. This tool may help in the creation of assessment and training resources for aquaculture qualifications to be delivered. **(3c)**
- Support relationship building and collaboration between employers and training organisations, including to connect national training products with delivery of training. **(3d)**