

# MARITIME

## Sector Overview

*“The MAR Maritime Training Package provides the only nationally recognised Vocational Education and Training (VET) qualifications for occupations involved in general purpose hands, coxswains, marine engine drivers, marine engineers, marine surveyors, cooks, integrated ratings, deck officers, ship’s masters and marina operations” (AIS 2017).*



## Industry Overview

The Maritime industry in Queensland is an important part in the Australian economy. It enables the importation and export of goods, as well as tourism, fishing, aquaculture and other activities. The maritime workforce in Queensland is the second largest in Australia with over 2,600 employees<sup>1</sup>. Known as the ‘blue economy’<sup>2</sup>, it has an estimated annual revenue of \$5.76 billion generated by the reliance of 95 per cent of Australian exports on sea transportation carried by sea<sup>3</sup>.

The import-export market drives the commodity movements in port areas, where there is a high proportion of maritime workforce. This part of the market is impacted by the resources, agriculture and construction sectors as well as the strength of the Australian dollar. Tourism is the other driver in the maritime sector, and the coastal expanse of Queensland and the world heritage listed Great Barrier Reef support recreational, charter and passenger maritime sectors.

### Key Metrics (Australia)

Revenue (\$b)	5.76B
Profit (\$b)	0.45B
Average Wage (\$)	\$106,176
No. of Businesses	1406
Employment Growth to 2023 (%)	10%
Workforce in QLD	2604
Enterprises in QLD	379
Composition (Small/ Med/ Lrg)	92% Small

Source: AIS Skills Forecast 2018 – Maritime | Australian Bureau of Statistics (2017) 2016 Census – Employment, Income and Education. Australian Government.

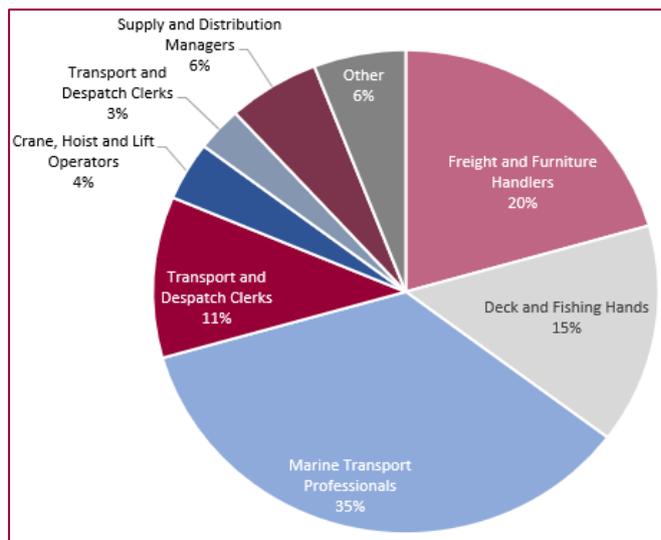
### Demographics

Average age	44.7 years
Demographics	13 per cent female 87 per cent male
Distribution	51 per cent of QLD maritime workforce is in South East Queensland.

Source: 2011 and 2016 ABS Census.

### Workforce Composition – Queensland Maritime

The composition of the Queensland maritime workforce is largely represented by marine transport professionals, including those who manage ship operations, marine and equipment in the ports workforce. The below graph highlights the various roles within industry.



Source: ABS Data

<sup>1</sup> Australian Industry Standards – Maritime Skills Forecast 2018

<sup>2</sup> <http://www.marinescience.net.au/>

<sup>3</sup> AIS Skills Forecast 2018 - Maritime



## Projected Employment & Skills Growth

The forecasted skill priorities and employment trends have been informed by international, national and state-based trends, stakeholder engagement and industry consultation.

### Water Freight

Primary activities involve international water freight transport services between ports, coastal services and freight ferry services. Employment is steady and increasing as newly constructed ships require operators and crew. Being a global workplace, international skill shortages further impact local demand, and this is predicted to drive higher wage costs. Further, international employee poaching and poor industry conditions globally can be a barrier to training investment in new employees. This has widespread impacts for training, where skilled staff are required to satisfy safety regulations across all operations<sup>4</sup>.

### Port Operators

The industry is fragmented and highly competitive with many self-employed operators located across Northern Queensland. Overall port operators have been able to increase efficiencies slowing employment growth however, roles such as security and clearance cannot be easily automated<sup>5</sup>.

### Stevedoring Services

Greater automation of port activities has limited the growth of employee numbers in stevedoring. Automation is expected to continue the limitation of employment growth over the next five years. However, the industry will remain heavily reliant on large pools of labour to load and unload cargo and due to it being a labour-intensive and dangerous role, a well-trained workforce will continue to be required<sup>6</sup>.

### Maritime Sightseeing Tours

Wage growth in this sector is directly related to growing tourist numbers over the past five years. Alternative

incentives are being used by industry to retain staff without substantial wage increases, such as implementing flexible working options including part-time work hours and job sharing<sup>7</sup>.

### Water Passenger Transport

The Water Passenger Transport industry includes city-based ferries, crew of boat and ship hire crew, longer route ferry services and cruises. In Brisbane, the June 2018 Brisbane City Council budget announcement included:

***100 new express "SpeedyCat" services a week from September 2018.***

***\$19.3 million dedicated towards upgrading ferry terminals across the city.***

***\$4.5 million budgeted for a new CityCat which would take the current fleet to 22 vessels<sup>8</sup>.***

There are also tourism ferry operators servicing Stradbroke Island, Moreton Bay, the Fraser Coast, the Great Barrier Reef, Townsville to Magnetic Island and Palm Island. Due to the seasonal nature of the industry, a significant proportion of employees in the industry are hired on a part-time or casual basis.

### Water Transport Terminals

The Water Transport Terminals sector acts as an intermediary link between shipping vessels and landside transport operators. As shipping volumes increase, so does the efficient use of assets and workforce. Training requirements of these operators include significant technical and regulatory knowledge and having a skilled staff can reduce costs related to injury, breaches of customs and regulation<sup>9</sup>.

### Seafood / Fishing / Aquaculture

Employment has fallen over the past five years with several firms exiting the industry. Businesses have restructured their workforce to smaller pools of highly-skilled employees, resulting in higher individual salaries<sup>10</sup>.

***The seafood, fishing and aquaculture industry supports approximately 13,000 jobs across Australia<sup>11</sup>.***

<sup>4</sup> IBISWorld Industry Report Freight Transport in Australia, 2017

<sup>5</sup> IBISWorld Industry Report Port Operators in Australia, 2017

<sup>6</sup> IBISWorld Industry Report Stevedoring Services in Australia, 2018

<sup>7</sup> IBISWorld Industry Report Industry Report Scenic Sightseeing Transport in Australia

<sup>8</sup> [www.brisbanetimes.com.au/national/queensland/council-to-deliver-on-election-commitment-for-more-citycat-services-20180612-p4zkvz.html](http://www.brisbanetimes.com.au/national/queensland/council-to-deliver-on-election-commitment-for-more-citycat-services-20180612-p4zkvz.html)

<sup>9</sup> IBISWorld Industry Report Water Transport Terminals in Australia, 2017

<sup>10</sup> <http://www.agriculture.gov.au/abares/research-topics/fisheries-and-aquaculture-statistics/employment>

<sup>11</sup> <https://foodmag.com.au/strong-export-growth-keeping-fishing-and-seafood-processing-afloat/>



# Emerging Industry Disruption Influences

## Ageing Workforce

The Australian maritime workforce represents one of the oldest workforces in Australia, with nearly half of all employees 45 or older<sup>12</sup>. The number of younger maritime workers (under 30) has decreased over the last 10 years with fewer young, new entrants entering the industry. Workers over the age of 60 has increased over the same time<sup>13</sup>.

## Service Demand

Containerised import-export trade across Queensland Ports supports the demand for skilled workers in the sector. Ships are getting bigger, carrying larger volumes and several ports are planning significant infrastructure investment to accommodate the larger vessel size, ensuring the trade links to Asia will continue to strengthen<sup>14</sup>.

The maritime workforce related to the tourism industry is more seasonal, reliant on tourism trends and impacted by the performance of the Australian dollar.

***The Maritime Freight Transport workforce will increase by 14.1 per cent over the next five years.***

***Similarly, the Passenger Transport workforce is expected to grow by 2.2 per cent over the same time<sup>15</sup>.***

## Technology

The future of the industry includes remotely operated and automated vessels. This will require significant changes in the skill needs of the workforce from previously, typical “on-board” working based skills, to remote operations, navigation, and interpreting complex data<sup>16</sup>. Already operational, automated cargo stacking cranes<sup>17</sup> have been introduced at the Port of Brisbane with the aim of increasing productivity and reducing wage costs.

Drone technology is being implemented across the sector for surveillance of the Queensland coastline monitoring border control, illegal fishing, and search and rescue<sup>18</sup>. These technologies will continue to evolve and be integrated into operations requiring a more digitally capable workforce.

## Environment

Increasingly, the impact of port operations on the environment is being monitored with ‘Ecosystem Health Reports’ being a part of their future sustainability responsibility<sup>19</sup>. Further, increasing environmental concerns may also change the way tourists are able to experience some of the protected natural assets in Queensland. In turn, this would impact the type of marine tourism available and the industry size.

## Safety and Regulation

The industry is highly regulated to ensure marine safety for industry participants. The industry deals with heavy, hazardous goods and specialised equipment. Therefore, strong compliance with occupational health and safety laws and employment laws is imperative. Maritime Safety Queensland (MSQ) is the leading Queensland government agency responsible for the enforcement and administration of Queensland’s maritime legislation<sup>20</sup>.

## Automation

There has been an increase of casualisation and part-time employment of workers across the industry due to operator consolidation and increasing automation, reducing labour expenses and skill demand. Until recently, the usage of autonomous vessels has been limited to underwater research for exploratory purposes. The prospect of autonomous shipping vessels is quickly becoming a reality for industry, with the first autonomous ships due to be launched in 2020<sup>21</sup>.

## Big Data

With the rise of technology, remote operating systems and the reliance of satellites, there is a changing skill requirement for this sector. The use of blockchain and tracking systems such as Automatic Identification Systems is expected to rise, in conjunction with the associated risks of cyber-related crimes<sup>22</sup>.

<sup>12</sup> Australian Industry Standards Maritime IRC Key Findings Paper 2018

<sup>13</sup> Australian Industry Standards – Maritime Skills Forecast 2018

<sup>14</sup> Port of Townsville Industry presentation, Livestock Association State Conference, March 2018.

<sup>15</sup> AIS Skills Forecast 2018 - Maritime

<sup>16</sup> Australian Industry Standards Maritime IRC Key Findings Paper 2018

<sup>17</sup> IBISWorld Industry Report I5212b – Port Operators in Australia, 2017

<sup>18</sup> Queensland Drones Strategy, Consultation Paper 2017

<sup>19</sup> [http://www.consultaustralia.com.au/docs/default-source/qld/gpc\\_-\\_presentation\\_-\\_consult\\_australia\\_breakfast\\_-\\_12\\_april\\_2012.pdf?sfvrsn=0](http://www.consultaustralia.com.au/docs/default-source/qld/gpc_-_presentation_-_consult_australia_breakfast_-_12_april_2012.pdf?sfvrsn=0)

<sup>20</sup> <https://www.msq.qld.gov.au/>

<sup>21</sup> AIS Skills Forecast 2018 - Maritime

<sup>22</sup> AIS Skills Forecast 2018 - Maritime



## Regional Considerations

Infrastructure projects in regional locations create a significant number of jobs in the development phase as well as ongoing job roles year-on-year. Accordingly, these projects will shape the future skills and training needs based on direct and indirect job creation and continuing service demand.

### Brisbane

The Port of Brisbane is an expanding, multi-commodity port and Queensland's largest general cargo port. The Port of Brisbane is the third-busiest container port in Australia, with the ability to handle dry and wet bulk cargo, general cargo and containerised cargo.

**Long term projections see the total containerised trade through the Port of Brisbane grow by 7.4% per year between 2004-05 and 2024-25.**

Strategically located at the mouth of the Brisbane River and close to the CBD, the Australia TradeCoast (ATC) is Australia's fastest growing and largest trade hub, comprising of the Brisbane Domestic and International Airport and the Port of Brisbane.

**Over the next 20 years, the ATC is expected to generate 25% of Brisbane's export growth and 9% of jobs growth.**

### Port of Brisbane Infrastructure Projects

- Port Drive Upgrade Project: Providing safer and more efficient port roads<sup>23</sup>.
- Future Port Expansion Area: Provide new port land and increased quay line on Fisherman Islands. An expansion of the Port of Brisbane Motorway will be required to accommodate an expected increase in vehicle traffic<sup>24</sup>.
- Brisbane International Cruise Terminal: Supporting Brisbane's expanding tourism sector to enable the facility to cater to cruise vessels of all sizes (including mega cruise ships)<sup>25</sup>.



***"The international cruise terminal... will also safeguard the existing 1,250 jobs related to the cruise industry in Brisbane and add 49 operational jobs on average each year over the next 20 years as the industry grows."***  
**Tourism Minister Kate Jones<sup>26</sup>**

### Gold Coast and Logan - Beaudesert

The Gold Coast is a premier location for recreational boat building, maintenance and refits. It has nine marinas, the capacity to service super yachts, as well as one of the most advanced marine industry cluster developments in the southern hemisphere. A cruise ship terminal has been proposed for the Gold Coast. Concerns have been raised about the design and environmental impact of the development and no works have begun.

### Gold Coast International Marine Precinct

- The 64-hectare site is adjacent to the existing Gold Coast marine precinct at Shipper Drive, Coomera
- The development is proposed to include 28.9 ha of industrial use, land for marine industry TAFE/centre of excellence, 390 berth marina and mixed-use precinct (offices, light industry, services, recreation)<sup>27</sup>.

### Sunshine Coast, Moreton Bay and Wide Bay

The Port of Bundaberg is one of Queensland's strategic ports providing shipping facilities for imports and exports (mainly sugar and molasses) of the Wide Bay Burnett Region. The Port of Bundaberg is well connected by road and rail to the key South-East Queensland consumer markets and the mining and agricultural sectors within South-West and Central Queensland<sup>28</sup>.

<sup>23</sup> <https://www.portbris.com.au/Major-Projects/Port-Drive-Upgrade/>

<sup>24</sup> <https://www.portbris.com.au/Major-Projects/FPE/>

<sup>25</sup> <https://www.portbris.com.au/Major-Projects/Cruise-Terminal/>

<sup>26</sup> <https://brisbanedevelopment.com/new-cruise-ship-terminal-means-south-east-queensland/>

<sup>27</sup> <http://statedevelopment.qld.gov.au/assessments-and-approvals/gold-coast-international-marine-precinct.html>

<sup>28</sup> <http://statedevelopment.qld.gov.au/coordinator-general/bundaberg-state-development-area.html>



## Central Queensland (Fitzroy)

The Port of Gladstone is Queensland's largest multicommodity port, housing the world's fourth largest coal export terminal. It is located 525 kilometres north of Brisbane. Over 30 products are handled through the port, which are then transported to more than 30 countries. The main commodities exported include bauxite, alumina, cement, coal and bulk sugar.

The Port of Rockhampton is located 62 kilometres east of Rockhampton. The Port Alma Shipping Terminal has been targeted for the import and export of niche market products including ammonium nitrate, explosives, general cargo, salt and tallow.

### Channel Duplication

- Gatcombe and Golding Cutting channels around Gladstone
- The duplication of the channel will enable the channel to facilitate the two-way passage of vessels.
- The project will include the duplication of the existing channels, establishing locations for the long-term disposal of dredged material (including capital and maintenance dredging) in accordance with relevant legislation and the relocation of existing and positioning of new navigational aids for the channel duplication<sup>29</sup>.

**Gladstone... 20 people will serve as ongoing maintenance dredging workers once the project is complete<sup>30</sup>.**

## Mackay – Isaac - Whitsunday

The Port of Abbot Point is located about 25 kilometres north of Bowen and is Australia's most northern export coal port. North Queensland Bulk Ports leases the land to Adani Group for a 99-year term. Coal is delivered to the port by rail from mines located in the northern Bowen Basin coalfields. Hay Point is situated approximately 30 kilometres south of Mackay and is one of the largest export coal ports in the world. The port comprises two separate coal export terminals.

The Port of Mackay is a multi-cargo port located five kilometres north of the Mackay central business district. The port handles a broad variety of cargo and has four operating berths/wharves. Land areas behind the port accommodate over 100 industrial and commercial businesses with substantial areas of vacant land suitable for further development.

## The Abbot Point Growth Gateway Project

- North of Bowen
- This dredging project will allow for the construction of a second trestle at the Port of Abbot Point, increasing the port's capacity from 50 to 120 million tonnes per annum.
- This project is a Prescribed Project but cannot begin until Adani can demonstrate a financial investment decision has been made for its Galilee Basin developments<sup>31</sup>.

## Townsville

The Port of Townsville Limited has headquarters in Townsville, and responsible for the management of the key trading in Port of Townsville and the dedicated raw sugar export in Port of Lucinda.

### Port of Townsville Master Plan

- The Port of Townsville is a critical northern gateway for the state's trade and investment handling more than \$11 billion in trade in 2014-15 and leading Australia in exporting copper, zinc, lead and sugar.
- The evidence base for master planning is underway with a view to drive economic development in and around the Port of Townsville<sup>32</sup>.

## Cairns

Cairns Seaport is a small multi-purpose regional port that caters for a diverse range of customers from bulk and general cargo, cruise shipping, fishing fleet and reef passenger ferries. The port's bulk cargo includes petroleum products, sugar, molasses, fertiliser, and liquid petroleum gas. The port has long been the natural consolidation and redistribution centre for supplies that are shipped to the coastal communities north of Cairns, as well as the Torres Strait Islands and the Gulf of Carpentaria.

The Port of Mourilyan exports raw sugar and molasses from the Innisfail, Babinda, Tully and Atherton Tableland sugar growing districts. This port is also home to a timber product export operation and includes a livestock export facility and the capacity to expand into new bulk cargo exports.

<sup>29</sup> <http://www.gpcl.com.au/development/channel-duplication-project>

<sup>30</sup> <https://busyatwork.com.au/news/gladstone-shipping-project-to-create-over-100-jobs/>

<sup>31</sup> <https://www.statedevelopment.qld.gov.au/major-projects/abbot-point-growth-gateway-project.html>

<sup>32</sup> <https://www.statedevelopment.qld.gov.au/industry-development/priority-port-of-townsville-master-planning.html>



## The Cairns Shipping Development Project

- The project involves widening and deepening the existing navigation channel to allow larger cruise ships to berth.
- It will provide a significant stimulus to the region creating local jobs, increasing competitiveness and strengthening the economic resilience of the local economy. Additional benefits include enabling future expansion of the HMAS Cairns Base, allowing improved channel access for the existing Royal Australian Navy vessels and increased resilience for the port against an extreme weather event<sup>33</sup>.

**It will accommodate the forecast demand for 70 additional cruise ships through the Port of Cairns each year by 2031<sup>34</sup>.**



Source: Transport and Main Road, Ports<sup>35</sup>

## Queensland - Outback

The Port of Weipa is the most northern bulk export port in Queensland. The primary function of the port is to export bauxite from the Rio Tinto Alcan mines near Weipa.

The Port of Quintell Beach services the Lockhart River community and remote grazing properties by barge, for the handling of general cargo, building materials and fuel for the communities.

The Port of Thursday Island (Port Kennedy) is a community port located at the most northern part of Australia. The port also operates as a major transshipment point for the supply of essential cargoes to other islands of the Torres Strait and provides facilities for the Navy, Customs, Police and Coast Pilot services.

The Port of Karumba is located in the south-east corner of the Gulf of Carpentaria provides for general cargo, fuel, fisheries products, and the export of live cattle.

The Port of Cape Flattery is on the east coast of Cape York Peninsula. It is used for the export of silica sand from the Cape Flattery mine.

### New Port Facilities at Boyd Point:

- Boyd Point, north of Aurukun
- Rio Tinto's Amrun Project will see the expansion of its bauxite reserves south of the Embley River and new port facilities constructed at Boyd Point
- This project is expected to commence production and export by mid-2019.

<sup>33</sup> <https://www.portsnorth.com.au/ports-north-projects/cairns-shipping/>

<sup>34</sup> <https://www.portsnorth.com.au/ports-north-projects/cairns-shipping/>

<sup>35</sup> <https://www.tmr.qld.gov.au/business-industry/Transport-sectors/Ports.aspx>



## Supply & Demand SWOT Analysis of Labour & Skills Supply

### STRENGTHS

- Access to coastal locations for training purposes
- Strong Tourism industry to support jobs in regional areas
- Ongoing investment in tourism promotion
- Proximity to Asia and improved direct air services in Queensland will support state tourism growth
- Future investment in regional island assets
- Strong import-export industry
- Investment in Ports will enable diversification of exports and additional direct to Asia operations

### WEAKNESSES

- Competition for skilled labour, within Australia and from other countries
- Maritime freight transport is slowing because of reduced activity in the mining and resource industries
- Higher-level skill needs are emerging related to new technology, such as automated cargo handling systems
- Digital skills capability of key segments of the workforce.
- The maritime workforce is one of the oldest in the country and is ageing at a faster rate than other industries
- Attracting young people to the industry

### OPPORTUNITIES

- Automation is having an impact on the structure of work and skill requirements for both marine and land operations at ports
- The cruise market segment is growing rapidly, sustaining demand for seafaring workers with multidisciplinary skills at all levels
- Queensland ports are forecasting a strong increase in container traffic as new local projects come online, increasing local demand for skilled workers
- Industry will become more dynamic with the combination of block chain and internet of things, to determine routes, vessel, loading times and slots<sup>36</sup>

### THREATS

- The lack of available training berths – related to the falling number of Australian-flagged commercial vessels – makes gaining mandated sea time difficult for trainees
- Shortage of trainers and assessors is further impacted by an ageing workforce, combined with high rates of retirement
- Shortage in supply of managerial staff is emerging in line with the administrative and regulative processes. This could be significant as automation drives a shift of the workforce to mid-management tiers.
- Retirement of the ageing workforce in these industries will create a skills gap if industry does not address training, development and progression of existing staff

<sup>36</sup> <https://www.ferrierhodgson.com/au/-/media/ferrier/files/documents/publications/transport-and-logistics/2017/lookout-here-comes-the-future.pdf>



## Known & Emerging Future Job Roles

### Maritime Job Shortages

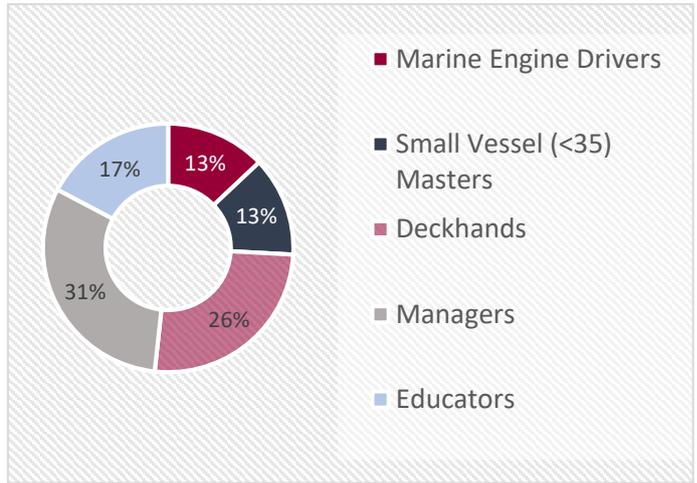
The Australian Industry Standards identified the following in demand job roles<sup>37</sup>:

1. Marine Engine Drivers
2. Small vessel (<35m) Masters
3. Deckhands
4. Managers
5. Educators, Trainers and Assessors

In the main, industry feedback supported this view and highlighted a number of additional roles considered as potential future job shortages<sup>38</sup>:

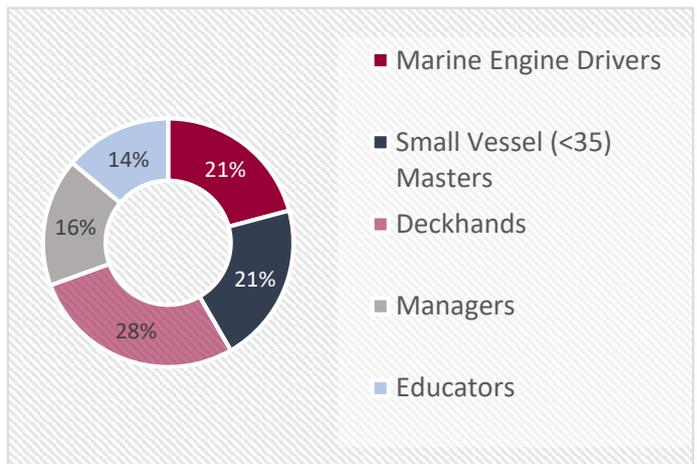
- Maintenance vessel slipping and refitting
- Electro-tech roles
- Deck hands and skippers
- Captains
- Master Class Mariners
- Marine Surveyors
- Master Class 5 is fine but there is a shortage for Master Class 1

### Industry Identified Current Job Shortages



Source: T&L Future Ready Industry Survey Responses

### Industry Identified Future Job Shortages



Source: T&L Future Ready Industry Survey Responses

### Industry Identified Training Preference

JOB ROLE	ACCREDITED VET FULL QUALIFICATION	ACCREDITED SKILL SET	PRIVATE TRAINING
1. Marine Engine Drivers	75%	75%	25%
2. Small vessel (<35m) Masters	75%	75%	25%
3. Deckhands	16.67%	33.33%	50%
4. Managers	40%	40%	0%
5. Educators, Trainers and Assessors	100%	33.33%	0%

<sup>37</sup> AIS Skills Forecast 2018 - Maritime

<sup>38</sup> T&L Future Ready Industry Survey Responses



## Known & Emerging Future Skill Priorities

### Maritime Skill Shortages

The Australian Industry Standards identified the following skill priorities<sup>39</sup>:

1. Technology
2. IT Skills (expanded)
3. Compliance
4. Navigation/vessel operations
5. WHS

Industry supported this view with shifting priorities given to each when considering shortages currently being experienced or those likely to be experienced in the future. Additional comments around skills include:

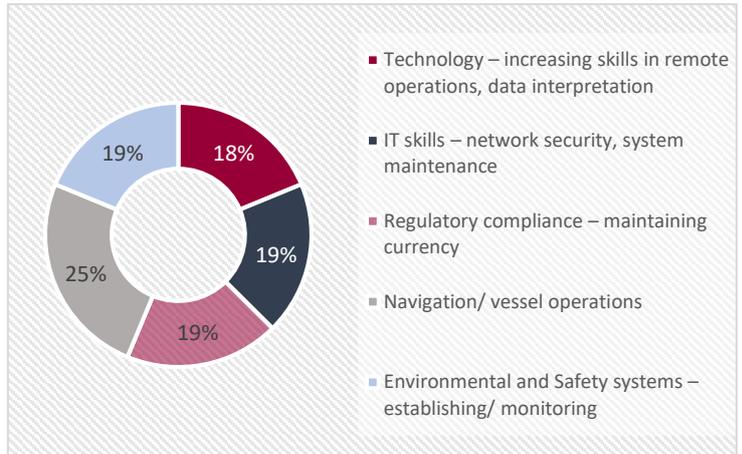
- A modern fleet dash is similar to an aircraft - there is a mismatch between what students with RTOs are taught and what industry is using
- Training for blue water – lack of training berths
- High-level skills in digital
- No more perpetual licenses - licenses will be for 5 years and come with compliance requirements such as medicals
- GPS is beyond 99.9% of fishermen
- Tech based and automated roles
- Mentoring and leadership training to help develop younger workers in house
- Advanced skills in marine surveying in the blue water sector and vessels over 35 meters

### Industry Identified Training Preference

SKILLS	ACCREDITED VET FULL QUAL	ACCREDITED SKILL SET	PRIVATE TRAINING
1. Technology	100%	50%	50%
2. IT Skills (expanded)	0%	50%	50%
3. Compliance	0%	100%	50%
4. Navigation/vessel operations	66%	66%	33%
5. WHS	50%	50%	50%

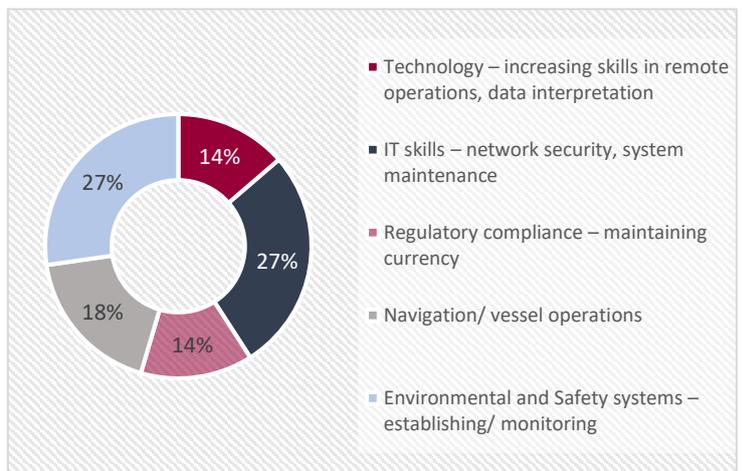
<sup>39</sup> AIS Skills Forecast 2017 - Maritime

### Industry Identified Current Skill Shortages



Source: T&L Future Ready Industry Survey Responses

### Industry Identified Future Skill Shortages



Source: T&L Future Ready Industry Survey Responses



Research by the Australian Government Department of Jobs and Small Business, Job Outlook website also highlights there is strong future growth for deckhands however it does not support the future demand for manager level professional as identified by other research sources and industry feedback <sup>40</sup>. This may be due to the variability in role classifications.

This snapshot is helpful in calling out opportunities and possible strategies to attract new workforce pools, for example increased female participation or offering part-time/ flexible working arrangements to improve gender ratios.

Decking & Fishing Hands	Marine Transport Professionals	Vocational Education Teachers
<b>Fast Facts</b>	<b>Fast Facts</b>	<b>Fast Facts</b>
<b>Avg. Weekly Pay</b> ? Unavailable	<b>Avg. Weekly Pay</b> ? Unavailable	<b>Avg. Weekly Pay</b> ? \$1,524 Before Tax
<b>Future Growth</b> ? strong	<b>Future Growth</b> ? decline	<b>Future Growth</b> ? moderate
<b>Skill Level</b> ? Certificate II or III	<b>Skill Level</b> ? Bachelor Degree or higher	<b>Skill Level</b> ? Bachelor Degree or higher
<b>Employment Size</b> ? 8800	<b>Employment Size</b> ? 8200	<b>Employment Size</b> ? 26,300
<b>Unemployment</b> ? above average	<b>Unemployment</b> ? above average	<b>Unemployment</b> ? average
<b>Male Share</b> 92.3%	<b>Male Share</b> 98.9%	<b>Male Share</b> 53.6%
<b>Female Share</b> 7.7%	<b>Female Share</b> 1.1%	<b>Female Share</b> 46.4%
<b>Full-Time Share</b> ? 90.2%	<b>Full-Time Share</b> ? 90.2%	<b>Full-Time Share</b> ? 68.8%

Source: Australian Government - Job Outlook <sup>41</sup>

<sup>40</sup> <https://joboutlook.gov.au/Career.aspx?industry=l>

<sup>41</sup> <https://joboutlook.gov.au/Career.aspx?industry=l>



## Training & Skilling Strategies

### Accredited Training

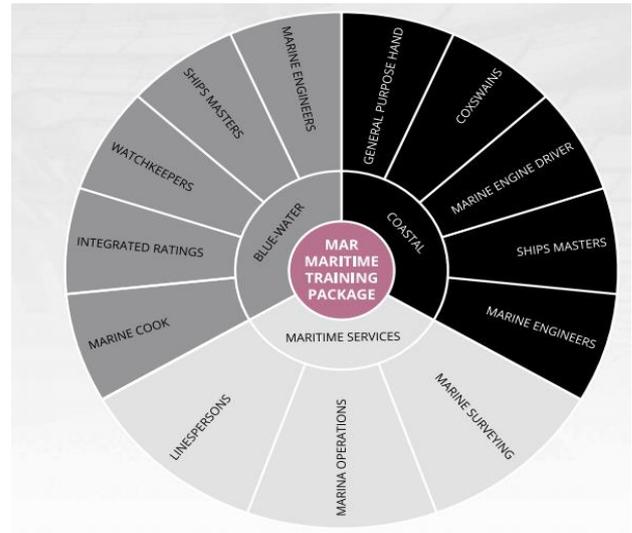
The MAR Maritime Training Package is the only nationally recognised VET qualifications covering near coastal and ocean going maritime operations<sup>42</sup>.

Qualifications	26
Skill Sets	16
Units of competency	199

Source: Australian Industry Standards - Maritime Industry 2018 Key Findings Discussion Paper

This package includes the qualifications for the following occupations:

- General Purpose Hands
- Coxswains
- Marine Engine Drivers
- Marine Engineers
- Marine Surveyors
- Cooks
- Integrated Ratings
- Deck Officers
- Ship's Masters
- Marina Operations



Source: Australian Industry Standards - MAR Training Package Architecture

### Training Enrolments

Respectively, for the past three years the Certificate II and Certificate III enrolments have remained the largest. Third is the Certificate I, however it is the only qualification to report a growth in numbers over the period.

**Industry surveyed preferred formal training for the majority of roles, complemented with private and in-house training<sup>43</sup>.**

### UNIT ENROLMENT COUNT BY STATE AND FUNDING TYPE 2014, 2015 AND 2016 AVERAGE



Government funding supports 62 per cent of Maritime commencing enrolments. Government funding is particularly high in Tasmania, the Northern Territory, and South Australia (87.4, 83, and 80.9 per cent respectively). New South Wales and Western Australia have a significant amount of government funding also, albeit lower than the previous States/Territories mentioned.

<sup>42</sup> Australian Industry Standards - Maritime Industry 2018 Key Findings Discussion Paper

<sup>43</sup> T&L FUTURE READY SURVEY



## MAR Maritime Training Package

### Certificates

Certificate I in Maritime Operations (General Purpose Hand Near Coastal)  
 Certificate I in Maritime Operations (Coxswain Grade 2 Near Coastal)  
 Certificate II in Maritime Operations (Marine Engine Driver Grade 3 Near Coastal)  
 Certificate II in Maritime Operations (Coxswain Grade 1 Near Coastal)  
 Certificate II in Maritime Operations (Linesperson)  
 Certificate III in Maritime Operations (Master up to 24 metres Near Coastal)  
 Certificate III in Maritime Operations (Master Inland Waters)  
 Certificate III in Maritime Operations (Marine Engine Driver Grade 2 Near Coastal)  
 Certificate III in Maritime Operations (Marine Surveying)  
 Certificate III in Maritime Operations (Marine Engine Driver Steam) Certificate III in Marina Operations  
 Certificate III in Maritime Operations (Marine Cookery)  
 Certificate III in Maritime Operations (Integrated Rating)  
 Certificate IV in Maritime Operations (Marine Engine Driver Grade 1 Near Coastal)  
 Certificate IV in Maritime Operations (Master up to 35 metres Near Coastal)  
 Certificate IV in Maritime Operations (Marine Surveying)  
 Certificate IV in Maritime Operations (Chief Integrated Rating)

### Diploma - Advanced Diploma

Diploma of Maritime Operations (Master up to 80 metres Near Coastal)  
 Diploma of Maritime Operations (Marine Engineering Class 3 Near Coastal)  
 Diploma of Maritime Operations (Marine Surveying)  
 Diploma of Maritime Operations (Engineer Watchkeeper)  
 Diploma of Maritime Operations (Master up to 500 GT)  
 Diploma of Maritime Operations (Watchkeeper Deck)  
 Advanced Diploma of Maritime Operations (Marine Engineering Class 2)  
 Advanced Diploma of Maritime Operations (Marine Engineering Class 1)  
 Advanced Diploma of Maritime Operations (Master Unlimited)

### TLI Transport and Logistics Training Package

Certificate III in Stevedoring  
 Certificate IV in Stevedoring Operations

The Vocational Education and Training (VET) sector and training package development has undergone considerable changes to improve its relevance and responsiveness to the changing industry needs.

***Nine new skill sets are planned in the forward program of work 2018-22<sup>44</sup>.***

Ongoing agility in the training package development will be needed to meet the future workforce needs and some measures to achieve this include review of package design and an increase in skill sets, with the aim of improved workforce mobility.

### Industry's Feedback on Accredited Training<sup>45</sup>

*"Marine surveying is listed as a traineeship. This will encourage more employers to take on trainees."*

*"Curriculum needs to be developed by the fishing industry."*

*"Biggest challenge for the industry is the competency-based training system. AMSA conducts oral assessments for licensing of students after RTO training and there is huge gaps and discrepancies in knowledge."*

The MAR Maritime Training Package is in scope for

**47** RTOs  
in QLD

<sup>44</sup> AIS Skills Forecast 2018 - Maritime

<sup>45</sup> T&L FUTURE READY SURVEY



## Non-Accredited Training

- The emphasis for staff to be multi-skilled has been highlighted across industries.
- Technology is ever-changing and technology-based skills for specific industries will drive training needs for the future. These may be better delivered by specialists or the provider of the technology platform themselves.

## Private and In-house

The fundamental skills identified by industry for continued growth and effective staff training include technology, IT skills, regulatory compliance and navigation.

***All industry surveyed offered some form of in-house training for specialty skills, and most businesses support staff through up-skilling and reskilling of staff via external providers<sup>46</sup>.***

Survey respondents indicated that inconsistencies with training quality across the sector, Registered Training Organisations' having poorly skilled trainers and assessors providing qualifications without meeting the skill requirements as reasons for considering a private training as an option.

## Emerging Training Trends

- Shorter course durations preferred and more flexibility in skill sets.
- Use of ship and tug simulators.
- Innovation continues the 'bigger is better' trend in ship building, including technology<sup>47</sup>.

## Marine Innovation Hub

Gold Coast City Marina and Shipyard are expected to invest in Australia's first marine innovation hub<sup>48</sup>. The hub will create a collaborative space for start-ups, operators and industry members to focus on improvements for industry.

## Boat Builders expanding operations

Riviera has the largest number of employees by a marine firm in Australia with 500 staff, including 53 apprentices<sup>49</sup>.

## Coomera Marina – Gold Coast TAFE

TAFE Gold Coasts and Riviera hosts a specialised, on-site training facility for boat building. It provides a practical learning environment for students to gain the necessary work-place skill for their future. The model offers students both practical and theoretical learning experiences<sup>50</sup>.

## Other Government Initiatives

*Awareness - Job Outlook* is an initiative of the Australian Government Department of Jobs and Small Business. Job Outlook provides information about Australian careers, labour market trends and employment projections.

## Industry's Commitment to Diversity<sup>51</sup>

- AMSA Diversity Plan<sup>52</sup>
- Job networks and through diversity and inclusion initiatives
- Torres Strait has training programs in place to support locals
- Accredited training via the proposed new traineeship arrangements
- School to work programs and traineeships

<sup>46</sup> T&L FUTURE READY SURVEY

<sup>47</sup> <https://wearegoldcoast.com.au/articles/new-high-water-mark-for-gold-coast-marine-industry/>

<sup>48</sup> <http://www.gccm.com.au/gccm-invest-australias-first-marine-innovation-hub/>

<sup>49</sup> <https://wearegoldcoast.com.au/articles/new-high-water-mark-for-gold-coast-marine-industry/>

<sup>50</sup> <https://international.tafeqld.edu.au/study-with-us/campus/gold-coast-coomera>

<sup>51</sup> T&L FUTURE READY SURVEY

<sup>52</sup> AMSA Diversity Plan