

Ross Lobegeiger report to farmers

Aquaculture production summary for Queensland 2020–21

This publication has been compiled by Rebecca Schofield of Fisheries Queensland, Department of Agriculture and Fisheries.

Enquiries and feedback regarding this document can be made as follows:

Email: info@daf.qld.gov.au

Telephone: 13 25 23 (cost of a local call within Australia)

Monday, Tuesday, Wednesday and Friday: 8 am to 5 pm, Thursday: 9 am to 5 pm

Post: Department of Agriculture and Fisheries GPO Box 46 BRISBANE QLD 4001 AUSTRALIA

Website: daf.qld.gov.au

Interpreter statement

The Queensland Government is committed to providing accessible services to Queenslanders from all culturally and linguistically diverse backgrounds. If you need an interpreter to help you understand this document, call **13 25 23** or visit daf.qld.gov.au and search for 'interpreter'.

© State of Queensland, 2020.

The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence.

Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms.



You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

Note: Some content in this publication may have different licence terms as indicated.

For more information on this licence, visit creativecommons.org/licenses/by/4.0.

The information contained herein is subject to change without notice. The Queensland Government shall not be liable for technical or other errors or omissions contained herein. The reader/user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using this information.

Dedication

In 2011, there was widespread support to rename this report the *Ross Lobegeiger report to farmers* to acknowledge and honour the pivotal role that Ross played in developing and supporting the Queensland aquaculture industry. Ross provided the aquaculture industry with almost 20 years of dedicated service and was responsible, as co-author, for producing the very first edition of this annual report in 1991. Overall he produced a total of 19 issues. As such, Ross Lobegeiger's name has become intrinsically linked with the report and it seems only fitting for the publication to continue to carry his name.

Tragically, Ross Lobegeiger passed away in 2010. He was such a well-known and enormously liked individual that his loss has been felt deeply by a great many people in his professional network and the aquaculture industry.



Table of contents

1	Queensland aquaculture industry summary 2020–21	1
2	Overall value and production	2
3	Return methods	4
4	Aquaculture sector production and value	5
5	Regional summary	7

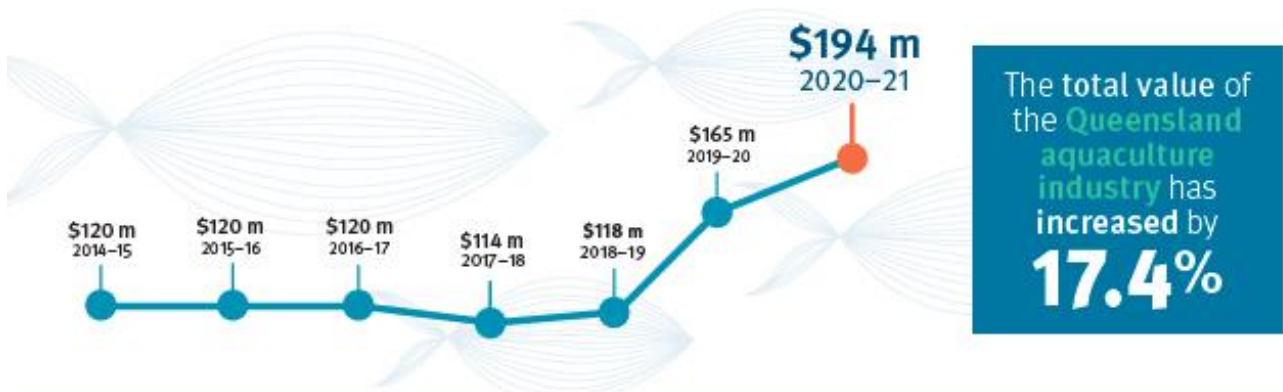
Table of figures

Figure 1 – Trend in value (\$ million) of Queensland aquaculture production	3
Figure 2 – Trend in Queensland aquaculture total production (tonnes)	3
Figure 3 – Value of aquaculture (\$ million) for each Australian Bureau of Statistics statistical division within Queensland.....	7

Table of tables

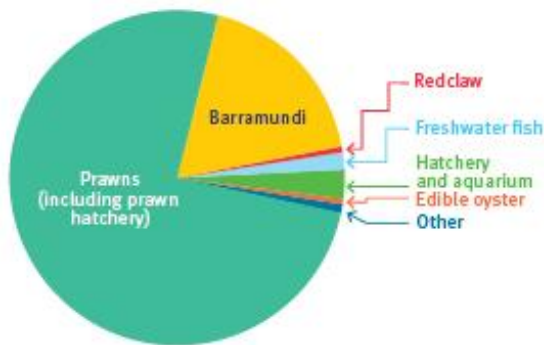
Table 1 – Queensland fisheries production—gross value (2014–15 to 2020–21)	2
Table 2 – Queensland aquaculture production—gross value by sector (\$ million)	5
Table 3 – Queensland aquaculture production (tonnes) by sector	6
Table 4 – Production, ponded area, employment and total production value of the Queensland aquaculture industry (2020–21)	8

1 Queensland aquaculture industry summary 2020–21



Production (tonnes)		2019-20	2020-21	Production (tonnes)		2019-20	2020-21
	↑	6245	8003		↓	235	224
	↓	62	33		↓	89	87
	↑	2904	3478	TOTAL	↑	9536	11825

Production value



Regional summary



The combined Queensland aquaculture industry employed:

Labour



DAF1504 - 12/21

2 Overall value and production

The total value of the Queensland aquaculture industry has increased by 17.4%, with the value of production increasing from \$164.9 million in 2019–20 to a new record high of \$193.5 million in 2020–21.

In 2020–21, the total value of fisheries production in Queensland increased by 9.2% to \$349.9 million. The relative importance of aquaculture to Queensland’s total fisheries production has increased, from 51.5% in 2019–20 to 55.3% in 2020–21. Similar trends in Queensland’s fisheries and aquaculture production can be seen in the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) figures (note: the difference in ABARES figures compared to Queensland figures is due to ABARES exclusion of hatchery production, which is sold to supply aquaculture growout operations).

Table 1 – Queensland fisheries production—gross value (2014–15 to 2020–21)

Queensland figures ⁽¹⁾			
Year	Total fisheries (\$m)	Aquaculture (\$m)	Aquaculture (%)
2014–15	\$302.4 (figure updated)	\$119.9	39.6 (figure updated)
2015–16	\$296.6 (figure updated)	\$120.2	40.5 (figure updated)
2016–17	\$313.1 (figure updated)	\$119.7	38.2 (figure updated)
2017–18	\$294.8 (figure updated)	\$114.2	38.7 (figure updated)
2018–19	\$277.3 (figure updated)	\$118.4	42.7 (figure updated)
2019–20	\$320.5 (figure updated)	\$164.9	51.5
2020–21	\$349.9	\$193.5	55.3
ABARES figures ⁽¹⁾			
Year	Total fisheries (\$m)	Aquaculture (\$m)	Aquaculture (%)
2014–15	\$309.3	\$114.3	37.0
2015–16	\$293.2	\$117.3 (figure updated)	40.0
2016–17	\$309.3 (figure updated)	\$116.5 (figure updated)	37.7
2017–18	\$294.4 (figure updated)	\$114.2 (figure updated)	38.8
2018–19	\$394.8	\$115 (figure updated)	28.8
2019–20	\$317 (figure updated)	\$161 (figure updated)	50.8
2020–21	Figure unavailable at the time of publication	\$188.5	Figure unavailable at the time of publication

Note: (1) The Queensland figures include hatchery production for farm stocking and impoundment stocking. Farm stocking details and product supplied to aquaculture growout operations are excluded from the figures used by ABARES.

Figures updated in line with current available data.

Sources: ABARES and Fisheries Queensland, Department of Agriculture and Fisheries.

The trend of aquaculture industry growth in Queensland over the past seven years can be seen in Figure 1 (page 3). The most valuable sectors of the Queensland aquaculture industry continue to be prawn and barramundi (*Lates calcarifer*) respectively. The actual dollar value of each sector is given in Table 2 (page 5). Acknowledging that there will always be some degree of fluctuation between years (for example, due to climatic issues), there is still a clear trend that the overall industry value has been increasing, on average, at a rate of 6.6% per annum since 1999–2000.

Gains in value in the 2020–21 financial year have been in the prawn, barramundi, freshwater fish, hatchery and aquarium and oyster sectors. The redclaw and other sectors recorded a decline in value from the previous year.

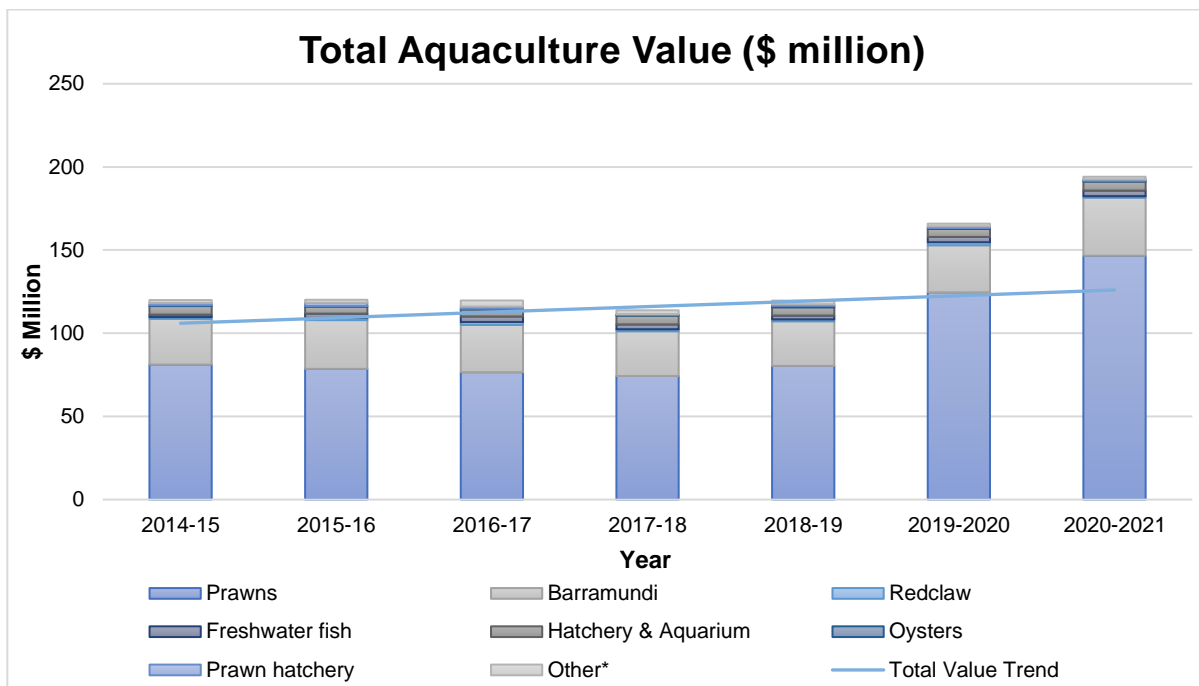


Figure 1 – Trend in value (\$ million) of Queensland aquaculture production

*Other' includes marine fish, sea cucumbers, algae and ulva, crustaceans and other bivalves.

In 2020–21, there was a 24% increase in total production compared to the previous year. The long term, 21-year average has the industry increasing at a rate of 7.1% per annum (Figure 2). Actual production figures (tonnes) for each sector are in Table 3 (page 6).

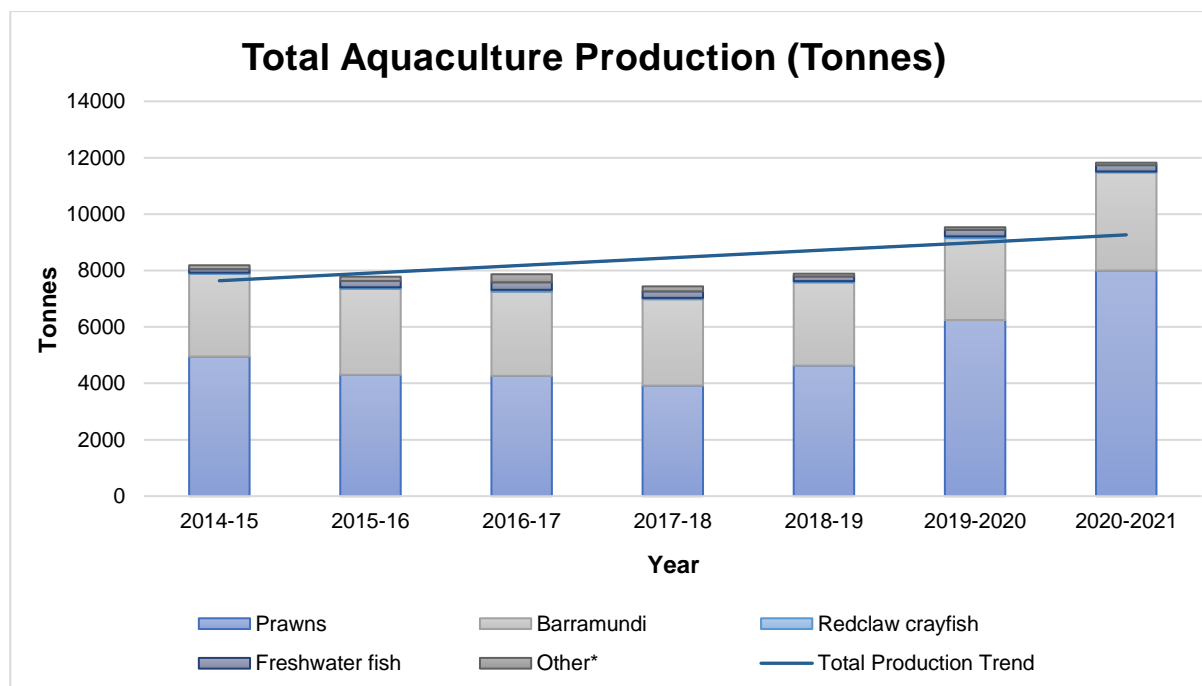


Figure 2 – Trend in Queensland aquaculture total production (tonnes)

*Other' includes marine fish, sea cucumbers, algae and ulva, crustaceans and other bivalves.

3 Return methods

Production statistics for the 2020–21 financial year were collected from all sectors of the Queensland aquaculture industry. The requirement to complete the production survey is a mandatory condition for all holders of a current aquaculture development authority.

Of the 399 current registered aquaculture authority holders in Queensland, 385 producers completed the production survey this year—a response rate of 96.5%. The results presented reflect the information provided by the industry through these statistical returns.

The following conversion factors and definitions are used in the report:

- **Conversion factors**
Fish production is reported on a whole fish basis. For example, gilled and gutted barramundi to whole fish (0.89:1 on weight basis) and fillet barramundi to whole fish (0.48:1 on weight basis).
- **Feed conversion ratio**
Estimated average feed conversion ratios are published for most species sectors. However, these ratios are only estimates as they are reported as direct ratios of the weight of feed provided versus the weight of product sold. Therefore, a number of other relevant factors, such as the weight of stock remaining in ponds at the end of the reporting period (i.e. fed but not yet harvested), are not considered.
- **Fingerling fish**
Fingerling fish are small fish in the 2–10 g range.
- **Labour conversion**
Labour Full Time Equivalent (FTE) employees are calculated by adding the total permanent labour units to the casual labour units and then converting to FTEs. Forty hours per week casual labour for 48 weeks per year is considered one FTE labour unit.

4 Aquaculture sector production and value

Prawn

Queensland's marine prawn industry produced two species of prawns—black tiger (*Penaeus monodon*) and banana (*Fenneropenaeus merguensis*). Production in the prawn sector increased by 28.1% (from 6245.2 tonnes in 2019–20 to 8002.7 tonnes in 2020–21), while the value increased by 17.6% (from \$124.6 million in 2019–20 to \$146.6 million in 2020–21). Hatchery sales of prawns for the year were \$0.8 million, which is down from \$1 million in 2019–20. The number of post larvae produced increased from 392 million in 2019–20 to 455 million in 2020–21. The number of producing farms remained the same at 18 in 2020–21.

Barramundi

Barramundi production increased by 19.7%, with 2904.4 tonnes sold in 2019–20 and 3477.9 tonnes sold in 2020–21. The value of the barramundi sector increased by 23.2%, from \$28.3 million in 2019–20 to \$34.9 million in 2020–21. Over this period, the average price (whole fish basis) increased, from \$9.76/kg in 2019–20 to \$10.04/kg in 2020–21. The majority of barramundi production is in pond-based systems. The number of producing farms remained the same at 16 in 2020–21. The total feed used in ponds and tanks increased from 4277.1 tonnes in 2019–20 to 5803.8 tonnes in 2020–21. The estimated average feed conversion ratio in 2020–21 was 1.7:1, up from 1.5:1 in 2019–20.

Table 2 – Queensland aquaculture production—gross value by sector (\$ million)

	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Prawns (includes prawn hatchery)	\$82.6	\$80.5	\$77.8	\$74.7	\$80.4	\$124.6	\$146.6
Barramundi	\$27.5	\$29.3	\$28.4	\$26.9	\$26.8	\$28.3	\$34.9
Redclaw crayfish	\$1.0	\$1.3	\$1.7	\$1.3	\$1.2	\$1.8	\$0.9
Freshwater fish	\$1.5	\$2.6	\$3.4	\$2.9	\$2.3	\$3.2	\$3.4
Hatchery and aquarium	\$5.2	\$4.2	\$4.2	\$5.3	\$4.9	\$4.8	\$5.4
Edible oysters	\$0.4	\$0.5	\$0.5	\$0.9	\$0.6	\$0.5	\$0.7
Other ⁽¹⁾	\$1.7	\$1.8	\$3.7	\$2.3	\$2.2	\$1.6	\$1.6
Total	\$119.9	\$120.2	\$119.7	\$114.2	\$118.4	\$164.9	\$193.5

Note: (1) Not available for publication (included in 'Other'). 'Other' includes marine fish, sea cucumbers, algae and ulva, crustaceans and other bivalves.

Freshwater fish

The freshwater fish growout sector produced silver perch (*Bidyanus bidyanus*), jade perch (*Scortum barcoo*), Murray cod (*Maccullochella peelii peelii*) and Sleepy cod (*Oxyeleotris lineolate*). The total production of freshwater fish (species other than barramundi) was 224.2 tonnes, which has decreased from the 235.3 tonnes produced in 2019–20. The value of the sector increased to \$3.4 million, up from \$3.2 million in 2019–20. The number of producing farms remained the same at 15 in 2020–21.

Silver perch production decreased during this reporting season to 93 tonnes, down from 111 tonnes in 2019–20. The value of the silver perch sector decreased from \$1.5 million in 2019–20 to \$1.3 million with an average price of \$14.26/kg. For silver perch production, the total feed used decreased from 231 tonnes in 2019–20 to 176.7 tonnes in 2020–21. Based on the silver perch harvest figures, this equates to a feed conversion ratio of 1.9:1.

Jade perch production decreased from 102 tonnes in 2019–20 to 83 tonnes in 2020–21. The value of jade perch sales totalled \$1.1 million with an average price of \$13.74/kg.

While Murray cod contributes to the freshwater fish sector, in 2020–21 only one grower produced this species and detailed production data cannot be published due to client confidentiality.

Redclaw

Production of the redclaw crayfish sector decreased by 47.2% (from 61.6 tonnes in 2019–20 to 32.5 tonnes in 2020–21). Value of the redclaw sector decreased to \$0.9 million down from \$1.8 million in 2019–20. The number of producing farms for 2020–21 was 19, down four from the previous financial year. Average prices increased from \$28.99/kg in 2019–20 to \$29.12/kg.

Table 3 – Queensland aquaculture production (tonnes) by sector

	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Marine prawns	4951.5	4302	4264.1	3921.2	4630.0	6245.2	8002.7
Barramundi	2930.9	3052.7	2987.4	3060.9	2950.2	2904.4	3477.9
Redclaw crayfish	45.0	51.3	64.8	48.8	44.9	61.6	32.5
Freshwater fish	120.7	222.7	268.6	231.7	168.3	235.3	224.2
Other ⁽¹⁾	139.0	154.8	284.3	176.4	96.9	89.3	87.3
Total	8187.1	7783.5	7869.2	7439	7890.3	9535.8	11824.6

Note: (1) 'Other' includes marine fish, sea cucumbers, algae and ulva, crustaceans and other bivalves.

Hatchery and aquarium

The hatchery and aquarium sector encompasses growers who produce ornamental aquarium species and native fish fingerlings for commercial growout (aquaculture) and stocking in public impoundments. In 2020–21, 9.6 million fish were sold. The value of the hatchery sector increased, from \$4.2 million in 2019–20 to \$4.8 million in 2020–21. Fingerling sales increased for Silver perch, Golden perch and Australian bass, while there was a notable decline in fingerling sales for Jade perch, Murray cod, and Barramundi.

The value of fingerlings sold to the aquaculture sector for commercial growout was \$3.4 million—this was an 8.5% increase in sales compared to 2019–20 at \$3.1 million. Value of fingerlings sold for the state fish restocking program into public impoundments increased by 49.4%, from \$0.6 million in 2019–20 to \$0.9 million in 2020–21. Ornamental sales have increased by 9.1%, from \$1.0 million (figure updated) in 2019–20 to \$1.1 million in 2020–21.

Oysters

Total edible oyster production increased by 57%, from 55,685 dozen in 2019–20 to 87,407 dozen in 2020–21. The value of the edible oyster industry increased from \$0.5 million in 2019–20 to \$0.7 million. Average price per dozen of oysters decreased from \$9.16 to \$8.03.

Labour

The combined Queensland aquaculture industry employed 786.3 FTEs—calculated by combining numbers of permanent and casual labour. The prawn farming sector was the largest employer at 514 FTE workers or 65.4% of the industry's total labour force.

5 Regional summary

Information has been analysed to provide a regional overview of the aquaculture industry in Queensland. The regions are based on the Australian Statistical Geography Standard SA4 statistical division adopted by the Australian Bureau of Statistics. Figure 3 illustrates the majority of the industry value comes from the Cairns, Townsville, Mackay and Gold Coast statistical divisions.

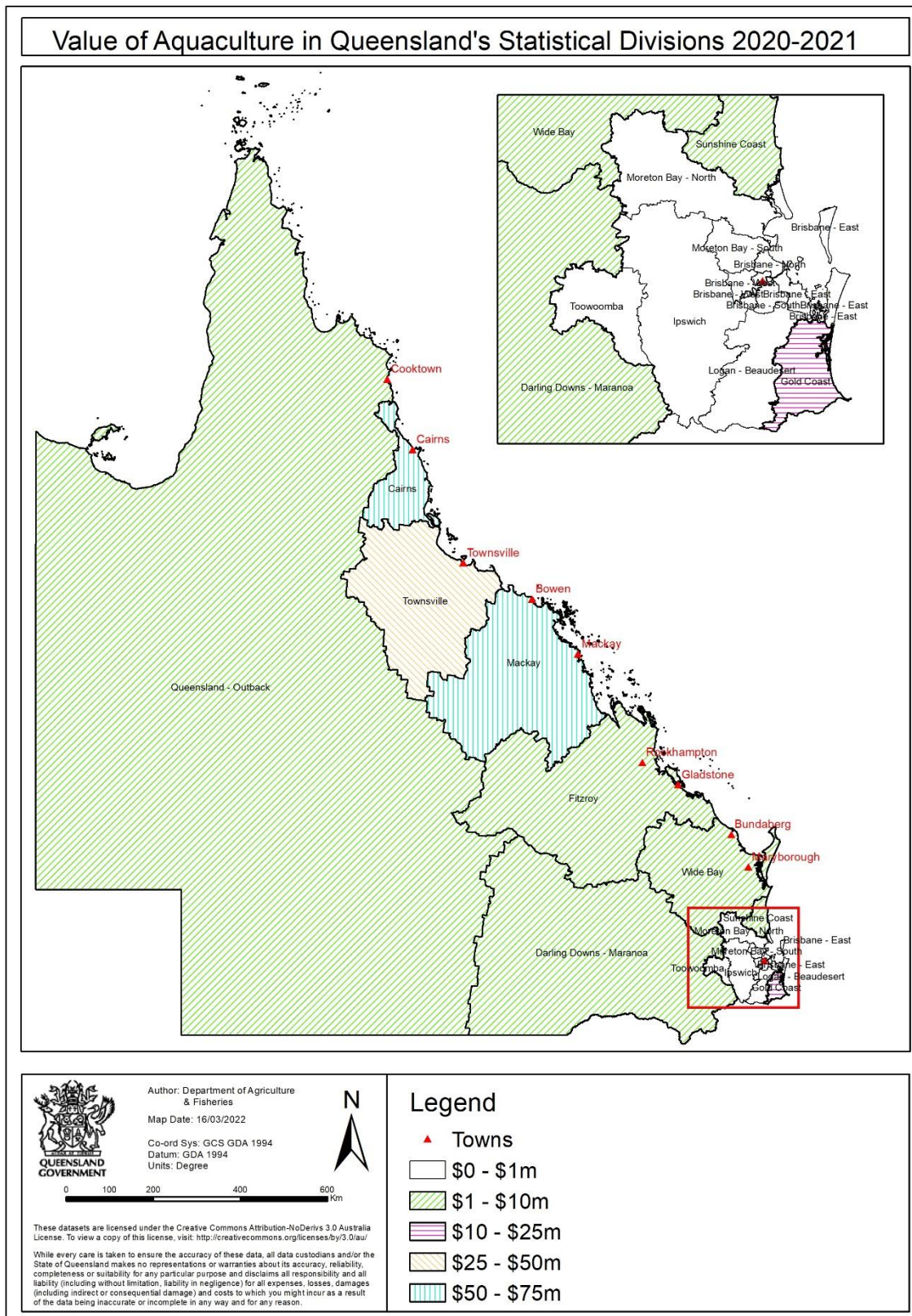


Figure 3 – Value of aquaculture (\$ million) for each Australian Bureau of Statistics statistical division within Queensland

Information presented in Table 4 was compiled from the annual production returns received from registered aquaculture authority holders. Table 4 demonstrates how some of the major production parameters such as production, ponded area, labour and total production value are divided between the respective Australian Bureau of Statistics Queensland statistical divisions.

Table 4 – Production, ponded area, employment and total production value of the Queensland aquaculture industry (2020–21)

Statistical division	Production (tonnes)	Ponded area (hectares)	Employment (FTE)	Total production value (\$ million)
Brisbane – East			16.4	\$0.5
Brisbane – North				
Brisbane – West				
Cairns	3603.2	367.3	191.8	\$54.2
Darling Downs – Maranoa				
Fitzroy			13.4	\$7.1
Gold Coast			45.6	\$19.4
Ipswich				
Logan – Beaudesert				
Mackay	4363.5	347	270.0	\$73.2
Moreton Bay – North				
Moreton Bay – South				
Queensland – Outback			13.8	\$1.5
Sunshine Coast		4.9	10.2	\$1.1
Toowoomba				
Townsville	1851.5	134.7	109.2	\$27.8
Wide Bay-Burnett	289.5	147.4	68.2	\$7.0
Total	11824.6	1137.9	786.3	\$193.5

Note: Due to client confidentiality, detailed production, ponded area, employment and total production value data cannot be published for all statistical divisions.