

Ross Lobegeiger report to farmers

Aquaculture production summary for Queensland 2019-20

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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.



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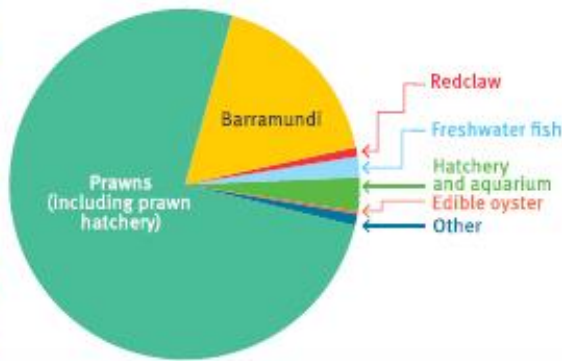
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1 Queensland aquaculture industry summary 2019–20

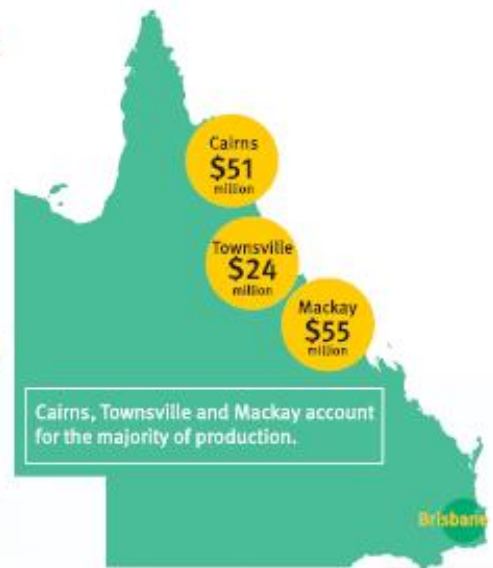


Production (tonnes)	2018-19	2019-20	Production (tonnes)	2018-19	2019-20
Prawns	4630	6245	Freshwater fish	168	235
Redclaw	45	62	Other	97	89
Barramundi	2950	2904	TOTAL	7890	9536

Production value



Regional summary



The combined Queensland aquaculture industry employed:

Labour



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2 Overall value and production

The total value of the Queensland aquaculture industry has increased by 39.2%, with the value of production increasing from \$118.4 million in 2018-19 to a record high of \$164.9 million in 2019-20. This increase in total value has been largely driven by the prawn sector where the total value increased by 55.1% to \$124.6 million.

With continued investment in a number of sectors and future development of a number of the Aquaculture Development Areas identified by the Department of Agriculture and Fisheries, it is anticipated that the total value of the Queensland aquaculture industry will continue to increase in the coming years.

In 2019–20, the total value of fisheries production in Queensland increased by 15.5% to \$320.3 million. The relative importance of aquaculture to Queensland’s total fisheries production has increased, from 42.7% in 2018–19 to 51.5% in 2019–20. 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 (2013–14 to 2019–20)

Queensland figures ⁽¹⁾			
Year	Total fisheries (\$m)	Aquaculture (\$m)	Aquaculture (%)
2013–14	\$285.8 (figure updated)	\$94.5	33.1 (figure updated)
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	\$320.3	\$164.9	51.5
ABARES figures ⁽¹⁾			
Year	Total fisheries (\$m)	Aquaculture (\$m)	Aquaculture (%)
2013–14	\$271.2	\$89.2	32.9
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	\$113.6	28.8
2019–20	Figure unavailable at the time of publication	\$160.2	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 6.4% per annum since 1999–2000.

Gains in value in the 2019–20 financial year have been in the prawn, barramundi, redclaw and freshwater fish sectors. The aquarium and hatchery, oyster and other sectors recorded a decline in value from the previous year.

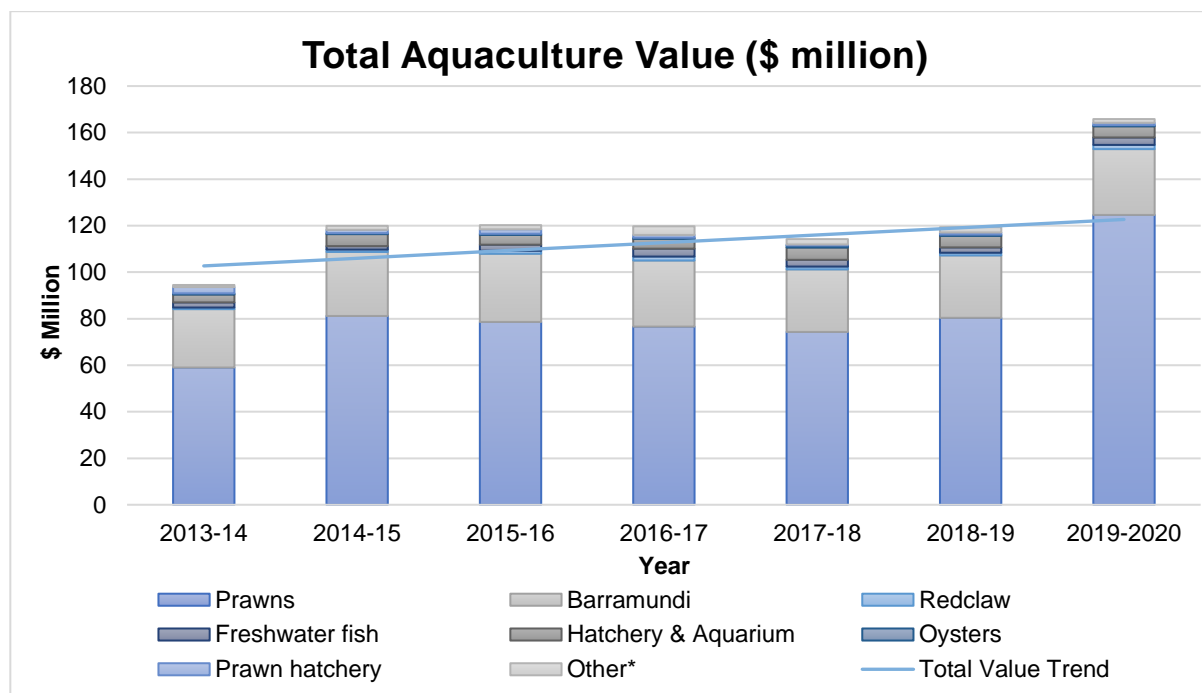


Figure 1 – Trend in value (\$ million) of Queensland aquaculture production

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

In 2019–20, there was a 20.9% increase in total production compared to the previous year. The long term, 20-year average has the industry increasing at a rate of 6.1% per annum (Figure 2). Actual production figures (tonnes) for each sector are in Table 3 (page 6).

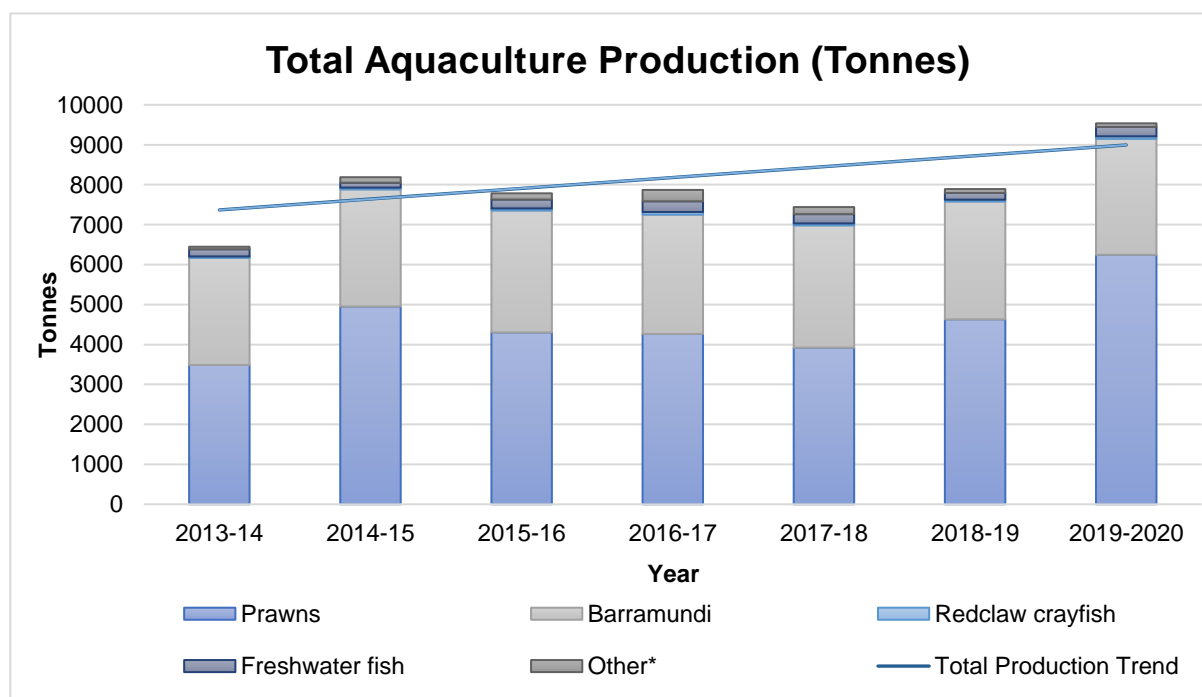


Figure 2 – Trend in Queensland aquaculture total production (tonnes)

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

3 Return methods

Production statistics for the 2019–20 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 418 current registered aquaculture authority holders in Queensland, 411 producers completed the production survey this year—a response rate of 98.3%. 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 34.9% (from 4630 tonnes in 2018–19 to 6245.2 tonnes in 2019–20), while the value increased by 55.1% (from \$80.4million in 2018–19 to \$124.6 million in 2019–20). Hatchery sales of prawns for the year were \$1 million, which is up from \$0.9 million in 2018–19. The number of post larvae produced increased from 388 million in 2018–19 to 392 million in 2019–20. There were 18 producing farms for 2019–20, down two from the previous financial year.

Barramundi

Barramundi production decreased by 1.6%, with 2950.2 tonnes sold in 2018–19 and 2904.4 tonnes sold in 2019–20. The value of the barramundi sector increased by 5.6%, from \$26.8 million in 2018–19 to \$28.3 million in 2019–20. Over this period, the average price (whole fish basis) increased, from \$9.09/kg in 2018–19 to \$9.76/kg in 2019–20. The majority of barramundi production is in pond-based systems. There were 16 producing farms in 2019–20, which is nine less compared to the previous year. The total feed used in ponds and tanks decreased from 4829.6 tonnes in 2018–19 to 4277.1 tonnes in 2019–20. The estimated average feed conversion ratio in 2019–20 was 1.5:1, down from 1.6:1 in 2018–19.

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

	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20
Prawns (includes prawn hatchery)	\$61.7	\$82.6	\$80.5	\$77.8	\$74.7	\$80.4	\$124.6
Barramundi	\$25.1	\$27.5	\$29.3	\$28.4	\$26.9	\$26.8	\$28.3
Redclaw crayfish	\$0.7	\$1.0	\$1.3	\$1.7	\$1.3	\$1.2	\$1.8
Freshwater fish	\$2.2	\$1.5	\$2.6	\$3.4	\$2.9	\$2.3	\$3.2
Hatchery and aquarium	\$3.4	\$5.2	\$4.2	\$4.2	\$5.3	\$4.9	\$4.8
Edible oysters	\$0.5	\$0.4	\$0.5	\$0.5	\$0.9	\$0.6	\$0.5
Other ⁽¹⁾	\$0.9	\$1.7	\$1.8	\$3.7	\$2.3	\$2.2	\$1.6
Total	\$94.5	\$119.9	\$120.2	\$119.7	\$114.2	\$118.4	\$164.9

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*) and Murray cod (*Maccullochella peelii peelii*). The total production of freshwater fish (species other than barramundi) was 235.3 tonnes, which has increased from the 168.3 tonnes produced in 2018–19. The value of the sector also increased to \$3.2 million, up from \$2.3 million in 2018–19. The number of producing farms remained the same at 15 in 2019–20.

Silver perch production increased during this reporting season to 111 tonnes, up from 66 tonnes in 2018–19. The value of the silver perch sector increased from \$0.9 million in 2018–19 to \$1.5 million with an average price of \$13.04/kg. For silver perch production, the total feed used increased from 117.8 tonnes in 2018–19 to 231 tonnes in 2019–20. Based on the silver perch harvest figures, this equates to a feed conversion ratio of 2.1:1.

Jade perch production increased from 78 tonnes in 2018–19 to 102 tonnes in 2019–20. The value of jade perch sales totalled \$1.3 million with an average price of \$13.12/kg.

While Murray cod contributes to the freshwater fish sector, in 2019–20 only a few growers produced this species and detailed production data cannot be published due to client confidentiality.

Redclaw

Production of the redclaw crayfish sector increased by 37.4% (from 44.9 tonnes in 2018–19 to 61.6 tonnes in 2019–20). Value of the redclaw sector increased to \$1.8 million up from \$1.2 million in 2018–19. The number of producing farms for 2019–20 was 23. Average prices increased from \$25.69/kg in 2018–19 to \$28.99/kg.

Table 3 – Queensland aquaculture production (tonnes) by sector

	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20
Marine prawns	3487.1	4951.5	4302	4264.1	3921.2	4630.0	6245.2
Barramundi	2681.7	2930.9	3052.7	2987.4	3060.9	2950.2	2904.4
Redclaw crayfish	35.2	45.0	51.3	64.8	48.8	44.9	61.6
Freshwater fish	180.4	120.7	222.7	268.6	231.7	168.3	235.3
Other ⁽¹⁾	62	139.0	154.8	284.3	176.4	96.9	89.3
Total	6446.4	8187.1	7783.5	7869.2	7439	7890.3	9535.8

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 2019–20, 13.8 million fish were sold—this was 29.2% greater than the 10.7 million fish sold during 2018–19. The value of the hatchery sector decreased, from \$5.6 million in 2018–19 to \$4.2 million in 2019–20. Fingerling sales increased for Jade perch, while there was a notable decline in fingerling sales for Silver perch, Golden perch, Murray cod, Australian bass and Barramundi.

The value of fingerlings sold to the aquaculture sector for commercial growout was \$3.1 million—this was a 7.9% increase in sales compared to 2018–19 at \$2.9 million. Value of fingerlings sold for the state fish restocking program into public impoundments decreased by 39.9%, from \$1 million in 2018–19 to \$0.6 million in 2019–20. Ornamental sales have remained the same at \$1.1 million in 2019–20.

Oysters

Total edible oyster production decreased by 26.1%, from 75,395 dozen in 2018–19 to 55,685 dozen in 2019–20. The value of the edible oyster industry decreased from \$0.6 million in 2018–19 to \$0.5 million. Average price per dozen of oysters increased from \$7.74 to \$9.16.

Labour

The combined Queensland aquaculture industry employed 717.8 FTEs—calculated by combining numbers of permanent and casual labour. The prawn farming sector was the largest employer at 473.4 FTE workers or 66% 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.

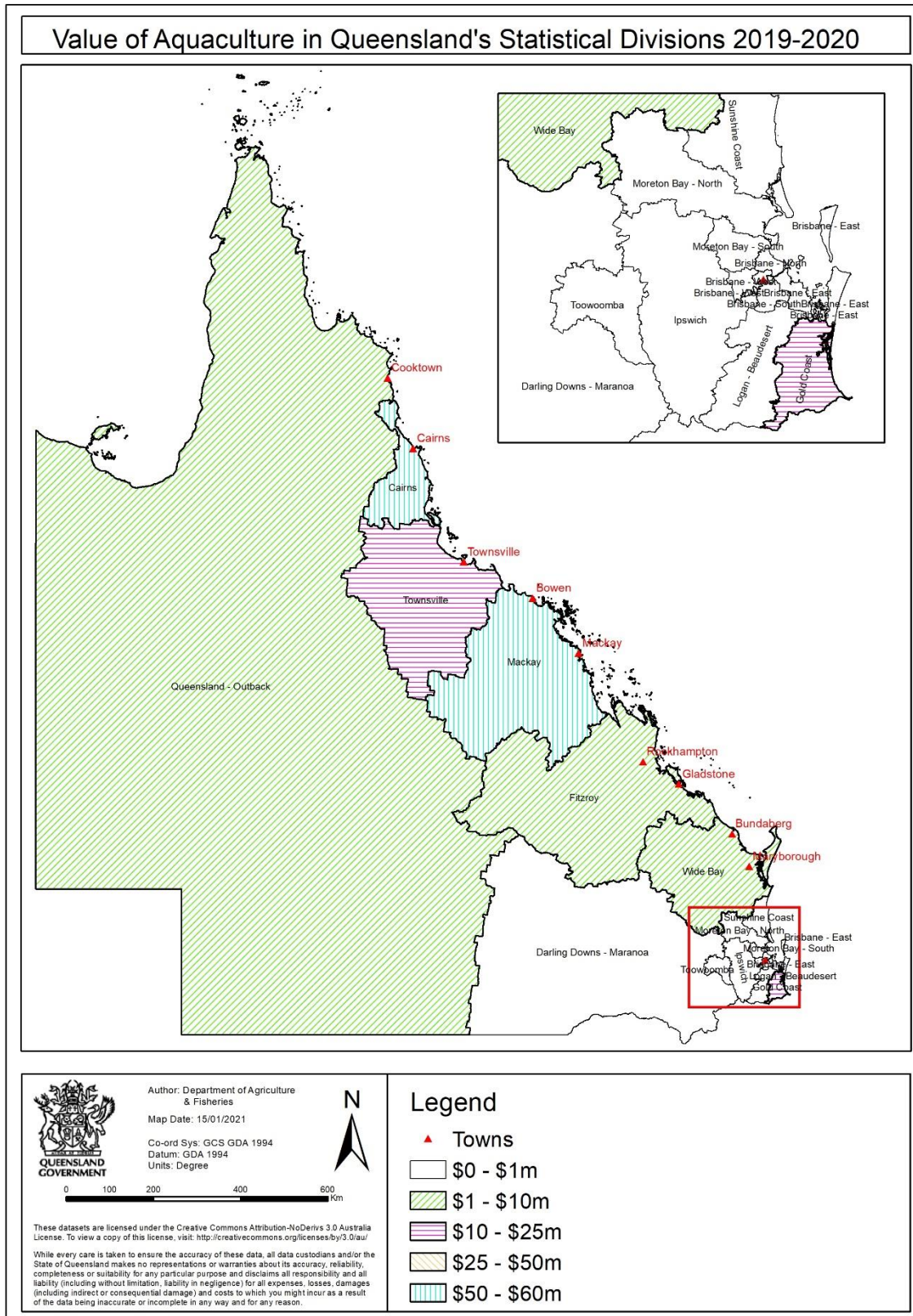


Figure 3 – Value of aquaculture (\$ million) for each Australian Bureau of Statistics statistical division within Queensland

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 (2019–20)

Statistical division	Production (tonnes)	Ponded area (hectares)	Employment (FTE)	Total production value (\$ million)
Brisbane – East			17.2	\$0.4
Brisbane – North				
Brisbane – West				
Cairns	3475.6	368.0	218.1	\$50.6
Darling Downs – Maranoa				
Fitzroy	355.2	30.7	19.4	\$7.2
Gold Coast	722.7	103.3	61.4	\$15.3
Ipswich				
Logan – Beaudesert				
Mackay	2973.4	262.8	188.3	\$55.1
Moreton Bay – North				
Moreton Bay – South				
Queensland – Outback		7.4	15.3	\$1.5
Sunshine Coast		3.0	10.5	\$0.1
Toowoomba				
Townsville	1361.9	135.9	103.0	\$24.0
Wide Bay-Burnett	431.7	118.0	65.1	\$8.8
Total	9535.8	1045.4	713.7	\$164.9

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