

# **Ross Lobegeiger report to farmers**

## **Aquaculture production summary for Queensland 2016–17**

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

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## Dedication

In 2011 there was widespread support for the renaming of this report to the *Ross Lobegeiger report to farmers*. This change was to help acknowledge and honour the pivotal role that Ross played in developing and supporting the Queensland aquaculture industry, as Supervising Extension Officer. Ross provided the aquaculture industry with almost 20 years of dedicated service and was responsible, as co-author, for producing the very first annual edition of this 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 2016-17 .....	1
2	Overall value and production .....	2
3	Return methods .....	4
4	Aquaculture sector production and value .....	5
5	Regional summary .....	7

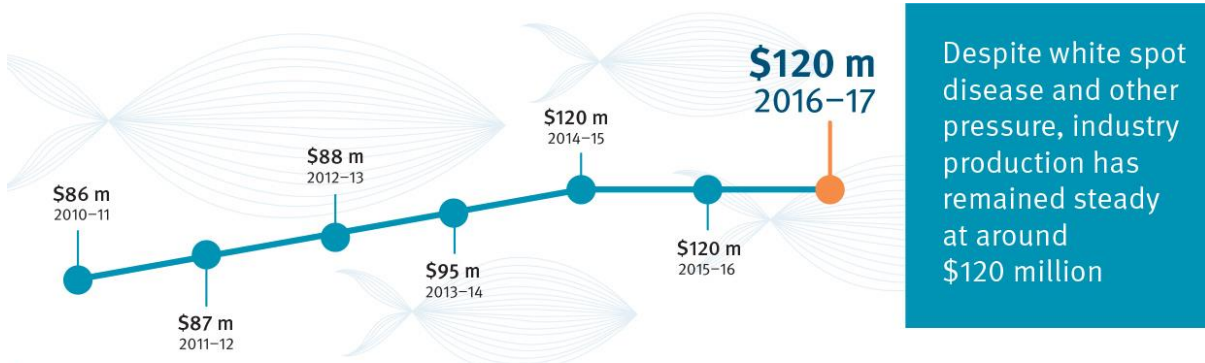
## Table of figures

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 for each Australian Bureau of Statistics statistical division within Queensland. ....	7

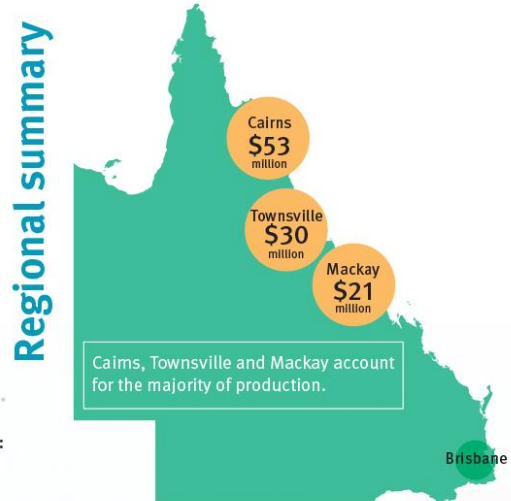
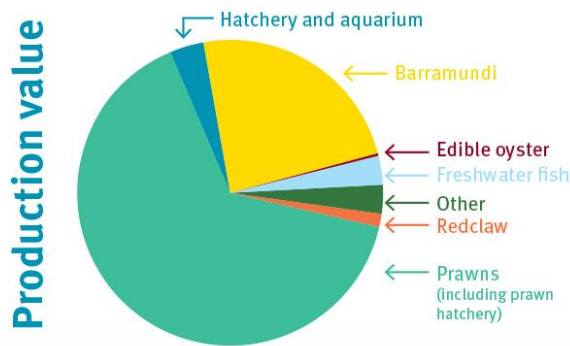
## Table of tables

Table 1 – Queensland fisheries production – gross value (2011–12 to 2016–17). ....	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—Queensland aquaculture industry (2016–17). ....	8

# 1 Queensland aquaculture industry summary 2016-17



Production (tonnes)		2015-16	2016-17	Production (tonnes)		2015-16	2016-17
	↓	4302	4264		↑	223	269
	↑	51	65		↑	155	284
	↓	3051	2987	<b>TOTAL</b>	↑	7782	<b>7869</b>



The combined Queensland aquaculture industry employed:



CS7839 02/18

## 2 Overall value and production

Despite the impact of white spot disease and other pressures, the Queensland aquaculture industry's total production value has remained steady at around \$120 million in 2016-17.

The total value of the Queensland aquaculture industry had decreased by 0.5%, with the value of production decreasing from \$120.2 million in 2015–16 to \$119.7 million in 2016–17.

In 2016–17, the total value of fisheries production in Queensland increased by 4.5% to \$311.7 million. While the total value of aquaculture production decreased in 2016–17, the wild harvest fishery in Queensland had increased to \$192 million in 2016–17 (Table 1).

Therefore, the relative importance of aquaculture to Queensland's total fisheries production has decreased, from 40.3% in 2015–16 to 38.4% in 2016–17. 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: difference in ABARES figures to Queensland figures due to ABARES exclusion of hatchery production that is sold to supply aquaculture grow out operations).

**Table 1 – Queensland fisheries production – gross value (2011–12 to 2016–17).**

Queensland figures <sup>(1)</sup>			
Year	Total fisheries (\$m)	Aquaculture (\$m)	Aquaculture (%)
2011–12	276.8	86.6	31.5
2012–13	269.5	87.6	32.5
2013–14	276.5	94.5	34.2
2014–15	314.9	119.9	38.1
2015–16	298.3	120.2	40.3
2016–17	311.7	119.7	38.4
ABARES figures <sup>(1)</sup>			
Year	Total fisheries (\$m)	Aquaculture (\$m)	Aquaculture (%)
2011–12	275.7	83.1	31.3
2012–13	265	82.9	31.2
2013–14	271.2	89.2	32.9
2014–15	309.3	114.3	36.9
2015–16	293.2	115.5	39.4
2016–17	307.4	115.4	37.5

**Notes:**

(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.

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. 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. 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 at a rate of 5.2% per annum since 1999-2000.

Gains in value in the 2016–17 financial year have been in the freshwater fish, redclaw (Cherax quadricarinatus), and other sectors. The barramundi, prawn, and prawn hatchery sectors have recorded a declined in value, while the aquarium and hatchery and oyster sectors have remained unchanged.

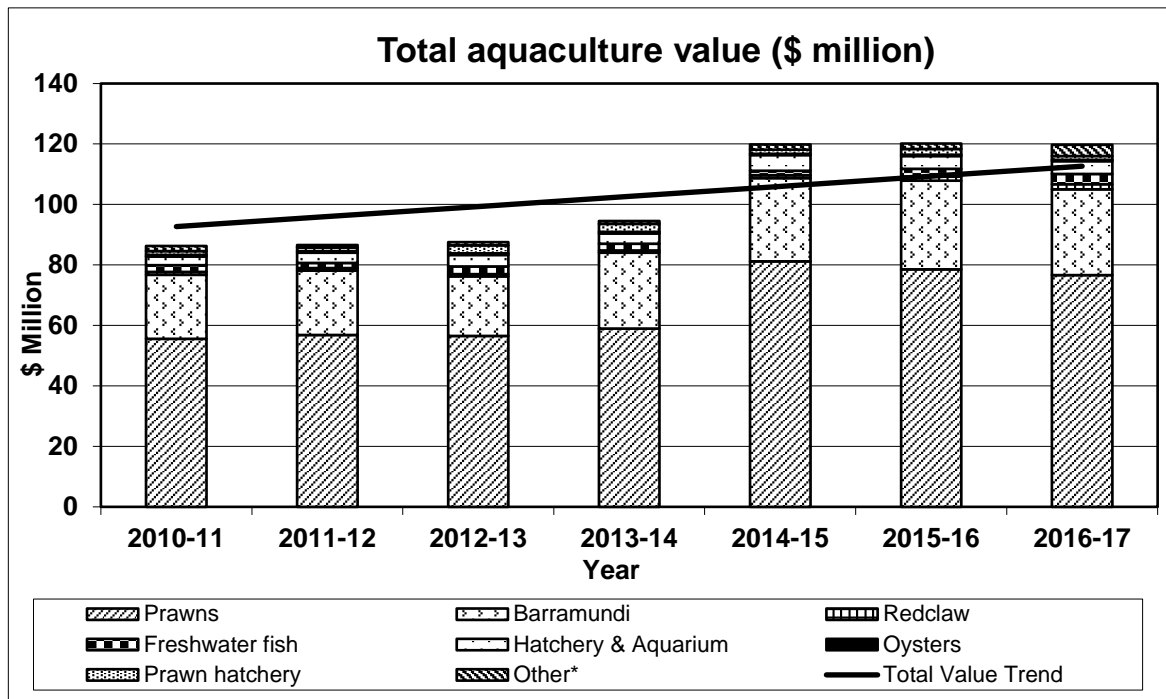


Figure 1 – Trend in value (\$million) of Queensland aquaculture production

In 2016–17, there was a small increase in total production compared to the previous year (2015–16). The long term 17 year average has the industry increasing at a rate 6.3% per annum (Figure 2). Actual production figures (tonnes) for each sector are given in Table 3.

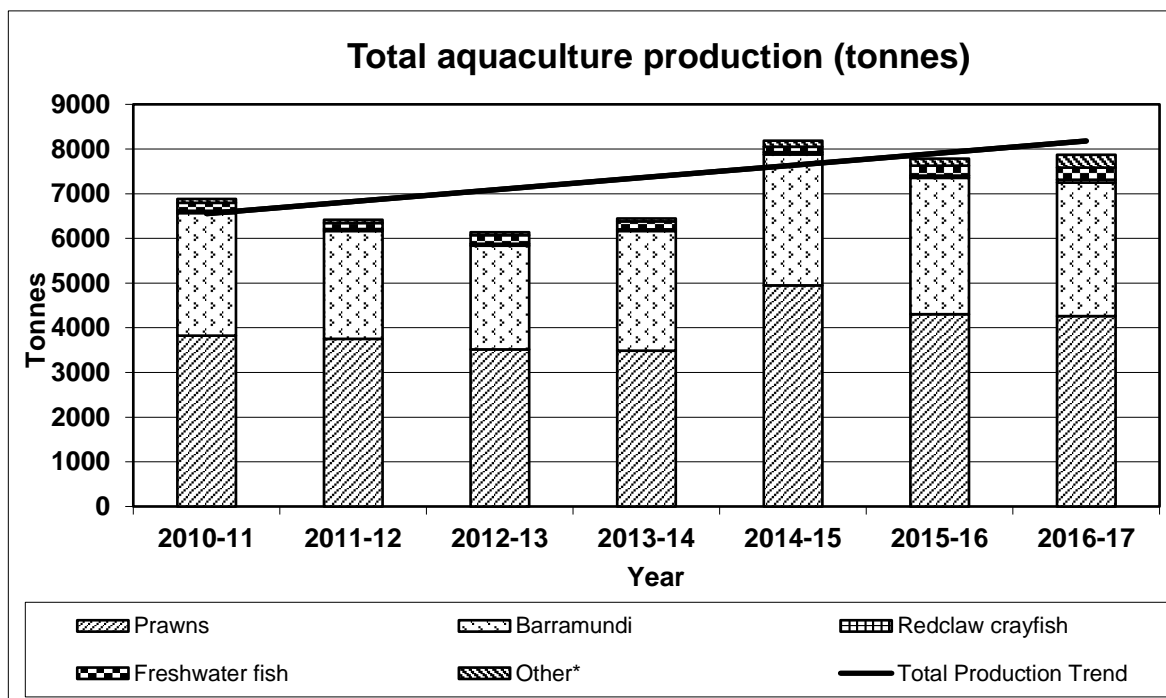


Figure 2 – Trend in Queensland aquaculture total production (tonnes)

### **3 Return methods**

Production statistics for the 2016–17 financial year were collected from all sectors of the Queensland aquaculture industry. The requirement to complete the production survey is a mandatory condition imposed on all holders of a current aquaculture development authority.

Of the 422 current registered aquaculture authority holders in Queensland, 407 producers completed the production survey this year—a response rate of 96.4%. The results presented reflect the information provided by the industry through the statistical returns. Since this report is produced largely as a service to the Queensland aquaculture industry, we strongly encourage growers to participate in the yearly production return and remind them of the mandatory requirement to lodge production data as a condition of their development authority.

The following are conversion factors and definitions 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 (FCR)**

Estimated average FCRs are published for most species sectors. However this information is only an estimate as it is reported as a direct ratio of the weight of feed provided verse 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 gram range.

#### **Juvenile Crayfish**

Juvenile crayfish are immature crayfish in the 1–5 gram range.

#### **Labour Conversion**

Labour full time employees (FTEs) are calculated by adding the total permanent labour units to the casual labour units converted 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 three species of prawns—black tiger (*Penaeus monodon*), banana (*Fenneropenaeus merguensis*) and eastern king (*Melicertus plebejus*). Production in the prawn sector decreased by 0.9% (from 4302 tonnes in 2015–16 to 4264.1 tonnes in 2016–17), while the value decreased by 3.4% (from \$80.5 million in 2015–16 to \$77.8 million in 2016–17). Noting production in the Gold Coast region was impacted by white spot disease. Hatchery sales of prawns for the year were \$1.2 million, which is down from \$1.9 million in 2015–16. The number of post larvae (PL) produced had decreased from 398,252,250 in 2015–16 to 332,660,450 in 2016–17. There were 21 producing farms for 2016–17, this was down one from the previous financial year.

### Barramundi

Barramundi production decreased by 2.1%, with 3052.7 tonnes sold in 2015–16 and 2987.4 tonnes sold in 2016–17. The value of the barramundi sector decreased by 3.1%, from \$29.3 million in 2015–16 to \$28.4 million in 2016–17. Over this period the average price (whole fish basis) has decreased, from \$9.59/kg in 2015–16 to \$9.47/kg in 2016–17. The majority of barramundi production is in pond-based systems. There were 25 producing farms in 2016–17, this is one more compared to the previous year. The total feed used in ponds and tanks increased from 4635.5 tonnes in 2015–16 to 4932 tonnes in 2016–17. The estimated average feed conversion ratio (FCR) in the 2016–17 was 1.6:1, up from 1.5:1 in 2015–16.

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

	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Prawns (includes prawn hatchery)	\$56.9	\$57.9	\$59.3	\$61.7	\$82.6	\$80.5	\$77.8
Barramundi	\$21.2	\$21.3	\$19.7	\$25.1	\$27.5	\$29.3	\$28.4
Redclaw crayfish	\$0.9	\$0.9	\$0.8	\$0.7	\$1.0	\$1.3	\$1.7
Freshwater fish	\$2.2	\$1.7	\$2.5	\$2.2	\$1.5	\$2.6	\$3.4
Hatchery and aquarium	\$2.9	\$3.4	\$3.8	\$3.4	\$5.2	\$4.2	\$4.2
Edible oysters	\$0.5	\$0.5	\$0.5	\$0.5	\$0.4	\$0.5	\$0.5
Other <sup>(1)</sup>	\$1.7	\$0.9	\$1.1	\$0.9	\$1.7	\$1.8	\$3.7
<b>Total</b>	<b>\$86.3</b>	<b>\$86.6</b>	<b>\$87.6</b>	<b>\$94.5</b>	<b>\$119.9</b>	<b>\$120.2</b>	<b>\$119.7</b>

#### Notes:

\* Not available for publication (included in 'Other')

(1) Includes marine fish, eels, crabs and pearls in some years.

### Freshwater fish

The freshwater fish growout sector currently produces silver perch (*Bidyanus bidyanus*), jade perch (*Scortum barcoo*), golden perch (*Macquaria ambigua*), saratoga (*Scleropages leichardti*) and Murray cod (*Maccullochella peelii peelii*). The total production of freshwater fish (species other than barramundi) was 268.6 tonnes, which has increased from the 222.7 tonnes produced in 2015–16. The value of the sector also increased to \$3.4 million, up from \$2.6 million in 2015–16. The number of producing farms decreased from 16 to 14 for 2016–17.

Silver perch production has increased this reporting season to 125 tonnes, up from 103 tonnes for 2015–16. The value of the silver perch sector increased from \$1,105,000 in

2015–16 to \$1,503,220, with an average price of \$12.04/kg. For silver perch production the total feed used increased from 245.7 tonnes in 2015–16 to 268.7 in 2016–17. Based on the silver perch harvest figures, this equates to a FCR of 1.9:1.

Jade perch production increased from 93.5 tonnes in 2015–16 to 101 tonnes for 2016–17. The value of jade perch sales totalled at \$1,219,587 with an average price of \$12.05/kg. While Murray cod, golden perch and saratoga remain contributors to the freshwater fish sector, in 2016–17 only a few growers produced Murray cod, golden perch and saratoga and detailed production data cannot be published due to client confidentiality.

### Redclaw

Production of the redclaw crayfish sector increased by 26.3% (from 51.3 tonnes in 2015–16 to 64.8 tonnes in 2016–17). Value of the redclaw sector increased to \$1,704,748 up from \$1,341,000 in 2015–16. The number of producing farms for 2016–17 was 25. Average prices increased from \$26.16/kg in 2015–16 to \$26.29/kg.

**Table 3 – Queensland aquaculture production (tonnes) by sector.**

	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Marine prawns	3822	3751	3518.7	3487.1	4951.5	4302	4264.1
Barramundi	2746	2416	2319.1	2681.7	2930.9	3052.7	2987.4
Redclaw crayfish	52	41	40.8	35.2	45.0	51.3	64.8
Freshwater fish	177	135	196.8	180.4	120.7	222.7	268.6
Other *	101	73	65	62	139.0	154.8	284.3
<b>Total</b>	<b>6898</b>	<b>6416</b>	<b>6140</b>	<b>6446.4</b>	<b>8187.1</b>	<b>7783.5</b>	<b>7869.2</b>

### Notes:

\* 'Other' includes marine fish, eels, sea scallops and crabs.

### 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 2016–17, 16.9 million fish were sold, this was 42% more than the 11.9 million fish sold during 2015–16. The value of the hatchery sector increased, from \$4.2 million for 2015–16 to \$6 million for 2016–17. Fingerling sales had increased for Murray cod, while there was a notable decline in fingerling sales for golden perch, jade perch, barramundi, Australian bass and silver perch.

The value of fingerlings sold to the aquaculture sector for commercial grow out was \$2 million, this was a 5% increase in sales compared to 2015–16 at \$1.9 million. Value of fingerlings sold for the state fish restocking program into public impoundments had increased by 13.6%, from \$968,000 in 2015–16 to \$1.1 million in 2016–17. Ornamental sales decreased by 23.1% from \$1.3 million in 2015–16 to \$1 million in 2016–17.

### Oysters

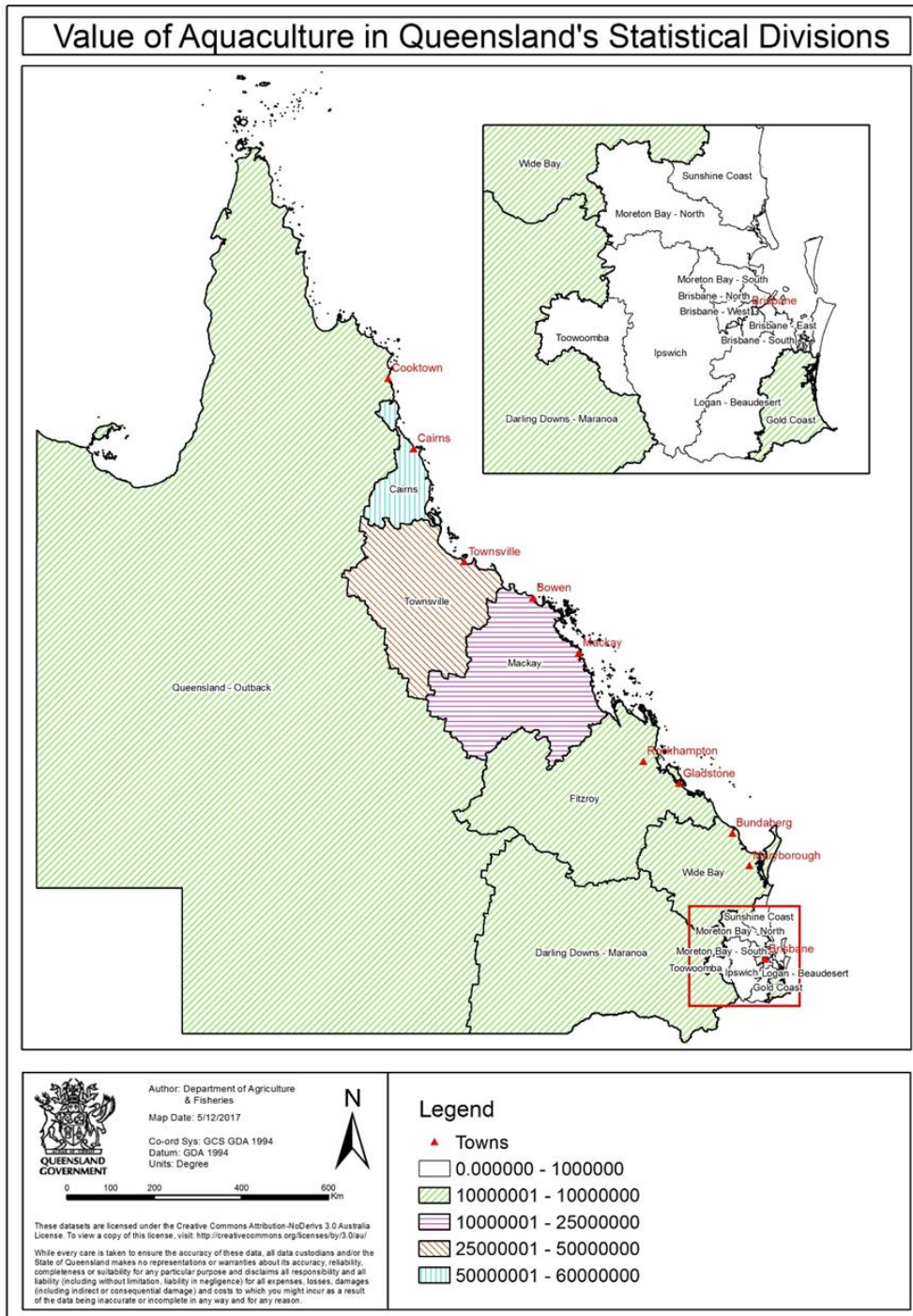
Total edible oyster production has decreased by 18.1%, from 112,433 dozen in 2015–16 to 92,037 dozen in 2016–17. The value of the edible oyster industry decreased from \$581,030 in 2015–16 to \$536,388. Average price per dozen of oysters has increased from \$5.17 to \$5.83.

### Labour

The combined Queensland aquaculture industry employed 533.8 full-time equivalents (FTEs)—calculated by combining numbers of permanent and casual labour. The prawn farming sector was the largest employer at 292.5 FTE workers or 54.8% 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 (ASGS) SA4 statistical division adopted by the Australian Bureau of Statistics (ABS). Figure 3 depicts the statistical divisions (Cairns, Townsville, and Mackay) which account for the majority of the industry value and production.



**Figure 3 – Value of aquaculture 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 ABS Queensland statistical divisions.

**Table 4 – Production, ponded area, employment and total production value-Queensland aquaculture industry (2016–17).**

Statistical division	Production (tonnes)	Ponded area (hectares)	Employment (FTE)	Total production value (\$ million)
Brisbane – East			23.3	\$0.4
Brisbane – North				
Brisbane – West				
Cairns	3717	328.6	177.4	\$53.3
Darling Downs – Maranoa	76.6	8.9	3.4	\$1.2
Fitzroy	99.9	22.3	18.7	\$1.7
Gold Coast	115	59.6	37.5	\$1.9
Ipswich	13.4	23.9	10.7	\$0.7
Logan – Beaudesert				
Mackay	1471	89	80.4	\$20.9
Moreton Bay – North	3.1	0.4	1.6	\$0.1
Moreton Bay – South				
Queensland – Outback	163.5	8.1	32	\$1.8
Sunshine Coast	8.4	16.8	11.5	\$0.3
Toowoomba			4	
Townsville	1826	144.6	83.8	\$29.5
Wide Bay-Burnett	370.6	93.9	49.4	\$7.7
<b>Total</b>	<b>7869.1</b>	<b>795.9</b>	<b>533.8</b>	<b>\$119.7</b>

**Note:**

Due to client confidentiality detailed production, ponded area, employment and total production value data cannot be published for all Statistical Divisions.