

5 Queensland Harvest Industry and Owner-Operator Profiles

The following analyses are undertaken for all harvest businesses throughout Queensland. Where appropriate, comparisons across the 15 TRCs are also presented.

BUSINESS PROFILES

Number of Harvest Businesses

There were 194 individual license holders identified in the Queensland Fisheries Service Harvest Fishery Database (Table 3.1). On the basis of this survey research it was estimated that there was a 22.5% latency within the industry, which consisted of all fishers who were either deceased, had reported they were no longer in business or had retired. It is estimated that there were 163 active harvest license holders in Queensland over the past 12 months.

Table 5.1 and Figure 5.1 show the estimated count and percentage distribution of harvest businesses within 15 TRCs in Queensland. Most harvesters worked from the Brisbane TRC (31.7%). The Cairns (13.9%), Mackay (8.9%) and Mooloolaba (7.9%) TRCs were also major centres for harvest activity in Queensland. Table 5.1 also shows that there were more harvest businesses in the southern sections of Queensland than in the northern sections. Those TRCs that are directly adjacent to the Great Barrier Reef Marine Park (TRCs from Cooktown to Gladstone) accounted for 40.0% of harvest businesses in Queensland.

No harvest activity was recorded in the Ayr, Bowen or Bundaberg TRCs, or on Cape York (Karumba, Weipa, Thursday Island or Cooktown TRCs).

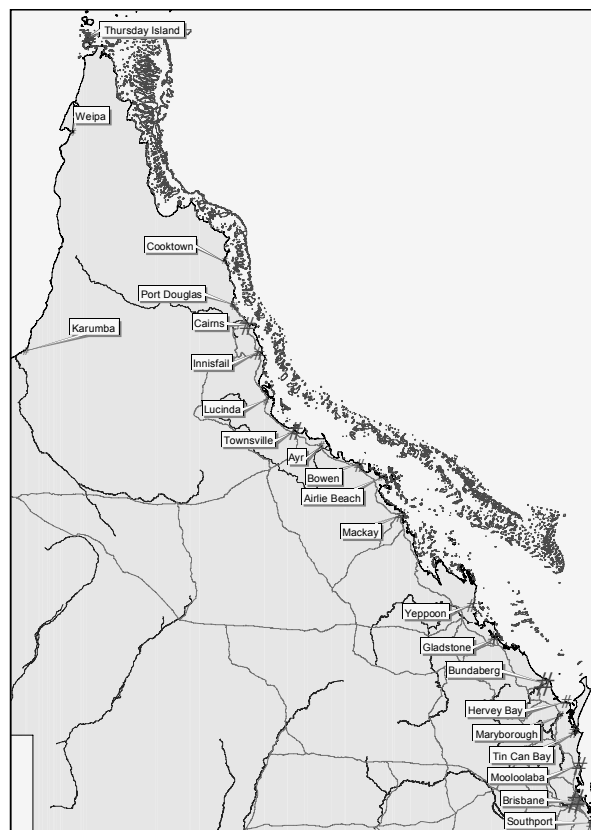


Figure 5.1 Percentage of Harvest Businesses within TRCs

Table 5.1. Number of Harvest Businesses by TRC

TRCs	Estimated Count	Percent of all Businesses
Port Douglas	3	2.0
Cairns	21	13.9
Innisfail	5	3.0
Lucinda	2	1.0
Townsville	8	5.0
Airlie Beach	2	1.0
Mackay	14	8.9
Yeppoon	5	3.0
Gladstone	6	4.0
Hervey Bay	8	5.0
Maryborough	2	1.0
Tin Can Bay	6	4.0
Mooloolaba	12	7.9
Brisbane	49	31.7
Southport	14	8.9
Total	154	100.0

Note: The total estimated count is based on the sum of individual estimates from within each TRC.

Fishing Activity and Type

Table 5.2 shows the types of harvesting activity undertaken in Queensland over the previous year. Aquarium fish (27.5%), bloodworms (20.2%), coral (19.3%) and sandworms (10.1%) were the main products harvested.

Table 5.2 Queensland State: Type of Harvest Activity

Fishing Type	Sample Count	Sample Percent	Estimated Population Count
Aquarium fish	30	27.5	42
Bloodworms	22	20.2	31
Coral	21	19.3	30
Sandworms	11	10.1	16
Yabbies	9	8.3	13
Grit and coral sand	6	5.5	8
Trochus, seacucumber	5	4.6	7
Shells	5	4.6	7

Note: All rows are independent.

Table 5.3 shows the percentage of harvest businesses collecting aquarium products (fish, invertebrates, grits and sands), trochus, seacucumber, sandworms, bloodworms and yabbies across each TRC. Aquarium products were mostly collected from the Cairns (26.8%), Mackay (14.6%), and Brisbane (14.6%) TRCs.

Trochus and Seacucumber were harvested only north of Mackay, mostly from the Cairns (66.1%) and Mackay (19.5%) TRCs. Sandworms were collected only south of Mackay, especially from the Southport (48.7%), Mooloolaba (28.4%) and Brisbane (10.3%) TRCs. Bloodworms and yabbies were collected predominately from the Brisbane (66.7%) and Southport (20.0%) TRCs.

Table 5.3. Type of Fishing Activity Across TRCs

TRC	Aquarium Products (%)	Trochus/ Seacucumber	Sandworms (%)	Bloodwms/ Yabbies(%)
Port Douglas	2.4	3.9	0.0	0.0
Cairns	26.8	66.1	0.0	0.0
Innisfail	2.4	5.4	0.0	3.3
Lucinda	2.4	0.0	0.0	0.0
Townsville	4.9	5.1	0.0	0.0
Airlie Beach	0.0	0.0	0.0	0.0
Mackay	14.6	19.5	0.1	0.0
Yeppoon	4.9	0.0	4.5	0.0
Gladstone	9.8	0.0	0.0	3.3
Hervey Bay	2.4	0.0	0.0	3.3
Maryborough	0.0	0.0	7.7	0.0
Tin Can Bay	0.0	0.0	0.3	3.3
Mooloolaba	9.8	0.0	28.4	0.0
Brisbane	14.6	0.0	10.3	66.7
Southport	4.9	0.0	48.7	20.0
Total	100.0	100.0	100.0	100.0

Source CRC Reef (2000).

Table 5.4 shows the frequency of harvest activity in Queensland across all fisheries with the peak season between November to January. The peak season for harvesting aquarium fish, grit and sand was July to November. The peak for trochus and seacucumber was August to December. The peak months for collecting sandworms were January, April, July and December, and the peak months for collecting bloodworms & yabbies were December and January.

Table 5.4. Peak Harvesting Months During Past 12 Months

Month	QLD %	Aq. Fishery(%)	Trochus/ Seacuc.%	Sandwms %	Bloodwms/ yabbies(%)
January	37.6	21.2	40.0	54.5	45.5
February	18.8	18.2	40.0	9.1	22.7
March	15.3	21.2	0.0	9.1	18.2
April	21.2	15.2	0.0	36.4	22.7
May	12.9	18.2	0.0	18.2	4.5
June	18.8	27.3	0.0	27.3	9.1
July	28.2	30.3	40.0	36.4	13.6
August	31.8	42.4	60.0	27.3	18.2
September	28.2	27.3	60.0	27.3	22.7
October	30.6	39.4	80.0	27.3	18.2
November	34.1	42.4	80.0	18.2	27.3
December	48.2	24.2	60.0	63.6	68.2

Source: Reef CRC (2000)

Location of Resource Use

Figure 5.2 shows the location of resource use across all harvest operations in Queensland. The highest density of use was on the reefs closest to Cairns and Port Douglas, as well as coastal areas nearest Yeppoon and Moreton Island.

The harvesting of aquarium fish and coral occurred mostly on the reefs closest to Port Douglas, Cairns, Innisfail, Townsville and Bowen. The harvesting of grit and sands occurred mostly along the coast nearest Tin Can Bay, Mooloolaba and Southport. Bloodworms were harvested mostly along the beaches of Moreton Bay, and sandworms were harvested mostly around Southport, Mooloolaba and Tin Can Bay.

Harvest Industry Employment

There were an estimated 502 fulltime equivalent people employed in the harvesting industry in Queensland over the previous year (Table 5.5). Table 5.5 also shows that nearly 44% of people working in the industry were from the Cairns TRC. Brisbane (16.1%) and Mackay (10.6%) were also major centres for employment for employment in Queensland.

Table 5.6 shows that most harvesters were employed in a fulltime capacity (76.2%). There were an average of 2.6 fulltime equivalent employees per business, and 48.5% of businesses had fulltime owner-operators with no additional full-time staff.

Table 5.5 Number of Employees Across TRCs

TRC	Estimated Count	Percent of all Employees %
Port Douglas	14	2.7
Cairns	218	43.5
Innisfail	20	4.0
Lucinda	2	0.3
Townsville	20	4.0
Airlie Beach	2	0.3
Mackay	53	10.6
Yeppoon	8	1.5
Gladstone	15	3.0
Hervey Bay	17	3.3
Maryborough	2	0.3
Tin Can Bay	6	1.2
Mooloolaba	24	4.9
Brisbane	81	16.1
Southport	21	4.3
Total	502	100.0

Source CRC Reef (2000).

Business Ownership and Size

Table 5.7 shows that the number of years the current operator has owned the harvest business was an average of 12 years. The majority of businesses had been owned by the current operator between 6-10 years (36%), and 25% had been owned by the current operator for more than 15 years.

Table 5.8 shows that harvesting businesses in Queensland had been operating for an average of 12.4 years, and that most businesses had been operating between 6-10 years (39%).

Table 5.9 shows the number of years that businesses have been operating, and the number of years that they have been owned by the current harvester across TRCs. Many harvest businesses have been owned and operated for many years. Businesses in the Maryborough, Innisfail, Yeppoon, and Southport TRCs have been owned by the current operator for the longest period. In addition, businesses in the Mooloolaba, Yeppoon, and Innisfail TRCs have been in operation for the longest period.

Table 5.6 Number of Employees

Number of Employees	Full-Time Count	Full-Time Percent	Part-Time Count	Part-Time Percent	Casual Count	Casual Percent
0	24	23.8	70	71.4	74	75.5
1	49	48.5	17	16.8	15	14.9
2-3	18	18.4	9	8.9	5	5.0
4-5	5	5.0	1	1.0	2	2.0
6-10	0	0.0	0	0.0	1	1.0
10+	2	2.0	1	1.0	1	1.0
Total Businesses	98		98		98	
Total Employees	174		89		66	
Mean Number of Harvesters per Business		2.6				
Estimated Number Employed within the TRC		502				

Note: Part-time and casual employment is recorded as 0.5 when contributing to total employment.
Total number of employees includes the owner-operator and is the number of full-time equivalent employees.

Table 5.7 Queensland State: Number of Years of Current Ownership of the Harvest Business

Number of Years	Sample Count	Percent	Cumulative Percent
1-5	25	25.0	25.0
6-10	36	36.0	61.0
11-15	14	14.0	75.0
16-20	8	8.0	83.0
21-25	4	4.0	87.0
26-30	6	6.0	93.0
31+	7	7.0	100.0
Total	100	100.0	100.0
Mean Number of years owned or operated			12.0

Note: Standard error of 0.37 for number of years ownership
Only 100 businesses reported this information

Table 5.8 Queensland State: Number of Years of Operation of the Harvest Business

Number of Years	Sample Count	Percent	Cumulative Percent
1-5	22	22.0	22.0
6-10	39	39.0	61.0
11-15	17	17.0	78.0
16-20	7	7.0	85.0
21-25	3	3.0	88.0
26-30	6	6.0	94.0
31+	6	6.0	100.0
Total	100	100.0	100.0
Mean Number of years owned or operated			12.4

Note: Standard error of 0.37 for number of years ownership
Only 100 businesses reported this information

Table 5.10 shows that there was an average of 1.4 boats per harvest business in Queensland. The majority of businesses operated one boat (54%), and 4% operated with more than four boats. Some 15% of businesses did not operate with a boat.

Table 5.11 shows that the average length of boats used in the harvesting industry was 7.4m, and the average length of the largest boat owned was 7.6m. Most vessels were small, where 59.1% were between 2-6m.

Table 5.9 Mean Years of Current Ownership and Operation of Harvest Businesses by TRC

TRCs	Mean Years Owned	Mean Years Operated
Port Douglas	7.0	3.8
Cairns	10.4	12.4
Innisfail	22.3	18.3
Lucinda	0.4	1.5
Townsville	12.3	12.3
Airlie Beach	10.0	10.0
Mackay	10.0	10.0
Yeppoon	20.0	20.0
Gladstone	6.4	4.7
Hervey Bay	7.2	6.6
Maryborough	38.0	17.0
Tin Can Bay	11.1	9.1
Mooloolaba	14.8	23.1
Brisbane	11.5	11.5
Southport	15.1	15.2

Table 5.10 Number of Boats Operated by Businesses

Number of Boats	Sample Count	Percent
0	15	15.0
1	54	54.0
2	19	19.0
3	8	8.0
4+	4	4.0
Total Number of Businesses	100	100.0
Mean Number of Boats Operated		1.4

Note: Standard errors for number of boats operated = 0.1

Table 5.11 Length of Boats Operated by Harvest Businesses

Length of Boats	Sample Count	Percent
2-6	81	59.1
7-10	33	24.1
11-14	13	9.5
15-18	6	4.4
18-24	2	1.4
24+	2	1.4
Total Number of Boats	137	100.0
Mean Length of Boats (metres)		7.4
Mean Length of Largest Boat (metres)		7.6

Note: Standard errors for number of boats operated = 0.1

Table 5.12 shows that the TRCs with the greatest number of boats per business were Airlie Beach, Gladstone, Hervey Bay and Southport. The largest vessels, however, were in the Port Douglas, Hervey Bay and Townsville TRCs.

Table 5.12 Queensland State: Number and Length of Boats per Harvest Business by TRC

TRC	Mean Number of Boats	Mean Length of Boats	Mean Length of Largest Boat
Port Douglas	1.0	12.5	12.5
Cairns	1.8	10.6	9.3
Innisfail	1.0	8.6	8.6
Lucinda	1.0	5.8	5.8
Townsville	1.0	11.4	11.4
Airlie Beach	2.0	4.6	5.2
Mackay	1.3	7.7	9.9
Yeppoon	1.7	6.0	6.7
Gladstone	2.0	4.1	6.0
Hervey Bay	1.6	8.9	11.9
Tin Can Bay	0.3	5.8	5.8
Mooloolaba	1.4	6.5	6.7
Brisbane	1.2	5.4	5.5
Southport	1.6	5.8	6.9

Source: Reef CRC (2000)

Value of Production

All harvest businesses were asked to identify the amounts of product harvested during the previous 12 months. From these amounts, the GVP for each business was calculated using the current wholesale price for each product (Table 5.13). Across the sample of 101 harvesting businesses, all but 15 provided this information to the interviewer. For these businesses, the GVP was calculated using the business income quoted. For two businesses, the business income did not correspond with the wholesale value of product value, and adjustments were made on the average price of aquarium fish for these businesses.

Table 5.14 shows the estimated annual GVP for each harvesting product collected in Queensland over the previous year. Most businesses harvested aquarium fish (30), and the total GVP for aquarium fish was estimated at \$8.8 million for Queensland. The mean GVP per aquarium fish business (\$192,000) was substantially higher than the median GVP per business (\$60,000), suggesting that there is a range of sizes in aquarium fish businesses.

Table 5.14 Annual GVP for all Harvesting Products

Product	Sample Size	Mean GVP (\$)	Median GVP (\$)	SE Mean (\$)	Estimated Sum (\$,000)
Aquarium Fish	30	192,116	60,000	100,000	10,019
Trochus/Seacucumber	5	307,200	168,040	112,000	2,670
Bloodworms	22	35,360	15,400	15,500	1,352
Coral Harvesting	21	11,700	2,040	10,000	427
Sandworms	11	15,200	6,700	7,500	290
Grit/Sand	6	18,650	12,300	2,600	193
Shell	5	8,300	2,200	9,000	72
Yabbies	9	3,600	1,330	1,000	56
Total					\$15,000

Note: 15 businesses were unable to provide this information

Source: Reef CRC

Table 5.13 Wholesale Value of Product

Harvest Product	Price per Unit
Aquarium fish	\$10 per fish,*
Coral	\$5,000 per tonne
Bloodworms/tubeworms	70 cents each
Sandworms	50 cents each
Sea-cucumber	\$8,000 per tonne
Trochus	\$5,500 per tonne
Yabbies	5 cents each
Starsand, grit, coral sand	\$500 per tonne
Shells	\$30 each

Note: *supplied by John Kung, CRC Reef

Harvesters of trochus and seacucumber had the highest mean and median GVP per business (\$307,000 and \$168,000 respectively). The total GVP for the trochus and seacucumber industry was estimated at \$2.3 million.

Bloodworms were also a substantial harvesting industry in Queensland, estimated at \$1.2 million. Coral was collected by several harvesters, although the mean GVP (\$11,700) and median GVP (\$2,000) were relatively low. Grit, sand, shells and yabbies were relatively minor products harvested in Queensland, totalling less than \$300,000 for the year.

Table 5.15 displays the distribution of GVP for all harvesters in Queensland. Most businesses (70.4%) produced less than \$50,000 during the twelve month period. The histogram indicates that the industry is highly skewed towards smaller businesses. Around 4.2% of businesses, however, produced more than \$300,000. The mean (\$97,000) was substantially higher than the median (\$33,000) for the sample population.

Table 5.16 shows that the Cairns TRC produces 53.6% of the Queensland GVP, and that the Brisbane TRC (15.0%), Gladstone TRC (10.2%) and Mackay TRC (7.3%) are also major producers of harvest product in Queensland.

Table 5.15 Annual GVP and Mean GVP for All Queensland Harvest Businesses

Gross Value of Production (\$,000)	Sample Count	Percent	Cumulative Percent
1 - 25	45	45.9	45.9
25 - 50	24	24.5	70.4
50 - 75	8	8.2	78.6
75 - 100	5	5.1	83.7
100 - 125	5	5.1	88.8
125 - 150	0	0.0	88.8
150 - 175	2	2.0	90.8
175 - 200	2	2.0	92.8
200 - 225	0	0.0	92.8
225 - 250	0	0.0	92.8
250 - 275	2	2.0	94.8
275 - 300	1	1.0	95.8
300,000+	4	4.2	100.0
Sample size		98	
Mean GVP		\$97,000	
Median GVP		\$33,000	
SE GVP		\$30,000	
Estimated Total GVP for QLD		\$14,563,450	

Source: Reef CRC (2000)

Table 5.16 Histogram of GVP for all Harvesting Activities in Queensland

TRC	Median GVP (\$)	Annual GVP (\$)	Percent QLD
Port Douglas	82,000	164,000	1.7
Cairns	76,250	5,120,900	53.6
Innisfail	25,000	137,000	1.4
Lucinda	3,000	3,000	0.0
Townsville	31,250	169,500	1.8
Airlie Beach	50,000	50,000	0.5
Mackay	50,000	699,000	7.3
Yeppoon	15,000	38,000	0.4
Gladstone	80,000	975,000	10.2
Hervey Bay	5,000	55,700	0.6
Maryborough	12,900	12,900	0.1
Tin Can Bay	27,500	180,400	1.9
Mooloolaba	43,750	309,900	3.2
Brisbane	19,900	1,433,100	15.0
Southport	7,500	201,100	2.1
SAMPLE TOTAL		9,549,500	100.0

OWNER-OPERATOR PROFILES

Table 5.17 provides basic demographic and social profiles of owner-operators throughout Queensland. Information shown in these profiles will be used in further studies to develop indices of sensitivity to change for both owner-operators and employees.

In the following chapters, only those TRCs with five or more businesses sampled within them are analysed.

Table 5.17 Queensland State: Owner-Operator Profiles

Profile	All QLD
Estimated Number of Active Harvesting Businesses	163
Mean age of fisher	46.9
Age range	21-72
Percent males	93.9
Mean years resident in town	19.5
Mean number of years in harvesting industry	16.4
Median hours per week in harvesting industry	29
Percent moved town to retain employment	14.4
Percent currently employed in other industry	37.8
Percent previously employed in other industry	87.6
Housing tenure (%)	
Rent	33.0
Mortgage	24.7
Own home	42.3
Other (eg, live with parents, on boat)	0.0
Educational	
Year completed school (%)	
Primary school	13.7
Year 8	6.3
Year 9	10.5
Year 10	27.4
Year 11	9.5
Year 12	32.7
Percent completed trade or TAFE certificate	34.7
Percent completed industry or business course	11.9
Percent with business plan	29.6
Marital Status	
Percent married or relationship	64.3
Partner's Income*	
Full-time employment	39.1
Part-time employment	25.0
Casual employment	9.4
Not employed	26.6
Family Composition	
Mean family size	2.1
Estimated number of total family members	215
Dependency Ratios	
Age Dependency Ratio**	19.6
Elderly Dependency Ratio	2.3
Child Dependency Ratio	17.3
Family Member Industry Dependency Ratio***	14.7
Gross Individual Income (%)	
Less than \$16,000	25.0
\$16,000 - \$26,000	19.3
\$26,000 - \$36,000	15.9
\$36,000 - \$52,000	23.9
\$52,000 - \$78,000	8.0
Over \$78,000	8.0
Average Income (\$)	\$33,602

Note: * Percentage based on those fishers with partners. Includes partner's income from all sources.

** The age dependency ratio is the number of children (below 15 years) and elderly persons (above 65 years) to every 100 persons in the population.

*** The industry dependency ratio is the number of persons in the family who are over 15 years of age and working in the fishing industry (excluding the direct industry employee) as a proportion of all family members over 15 years of age.

Figure 5.2 Location of all harvesting activities in Queensland

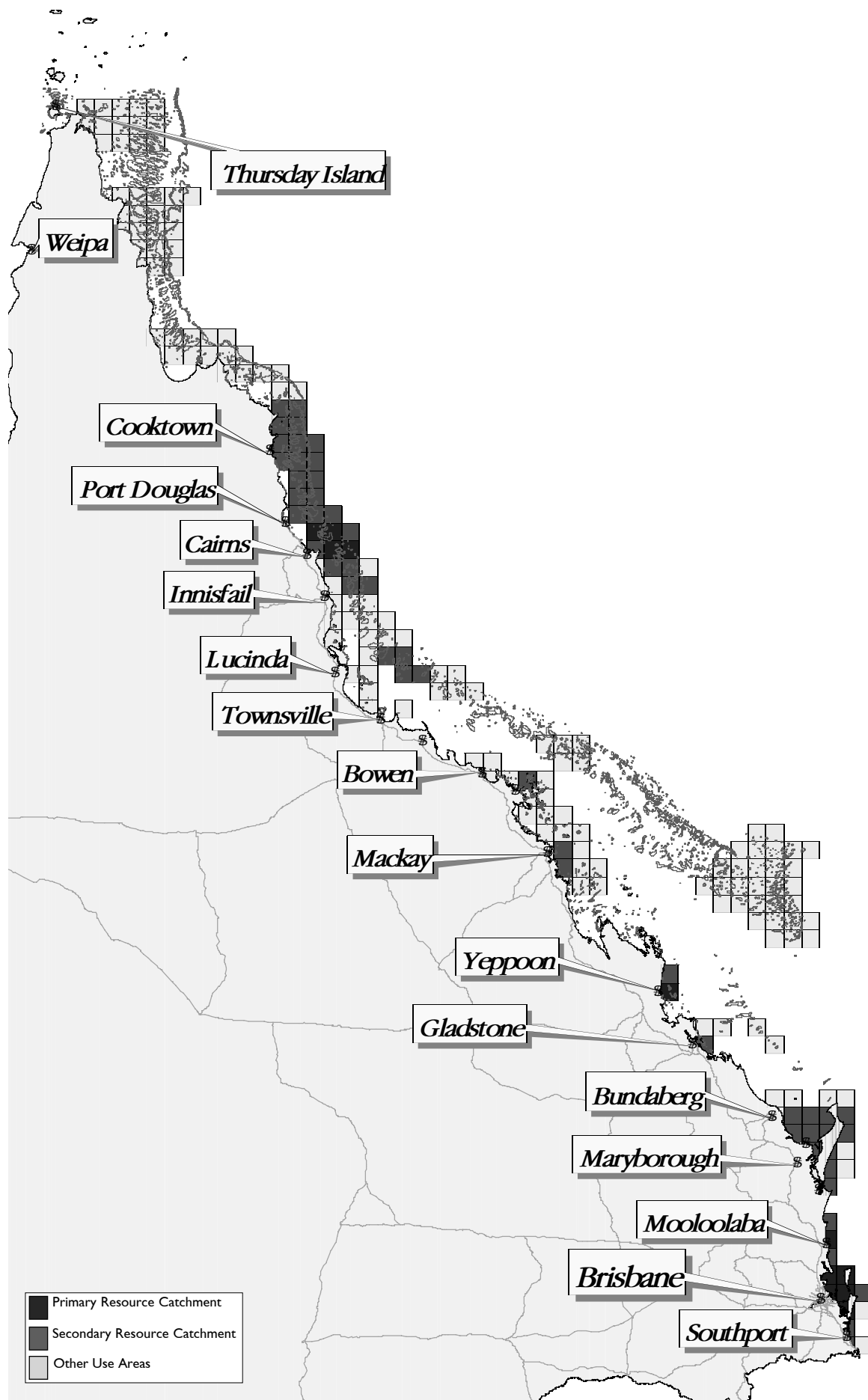
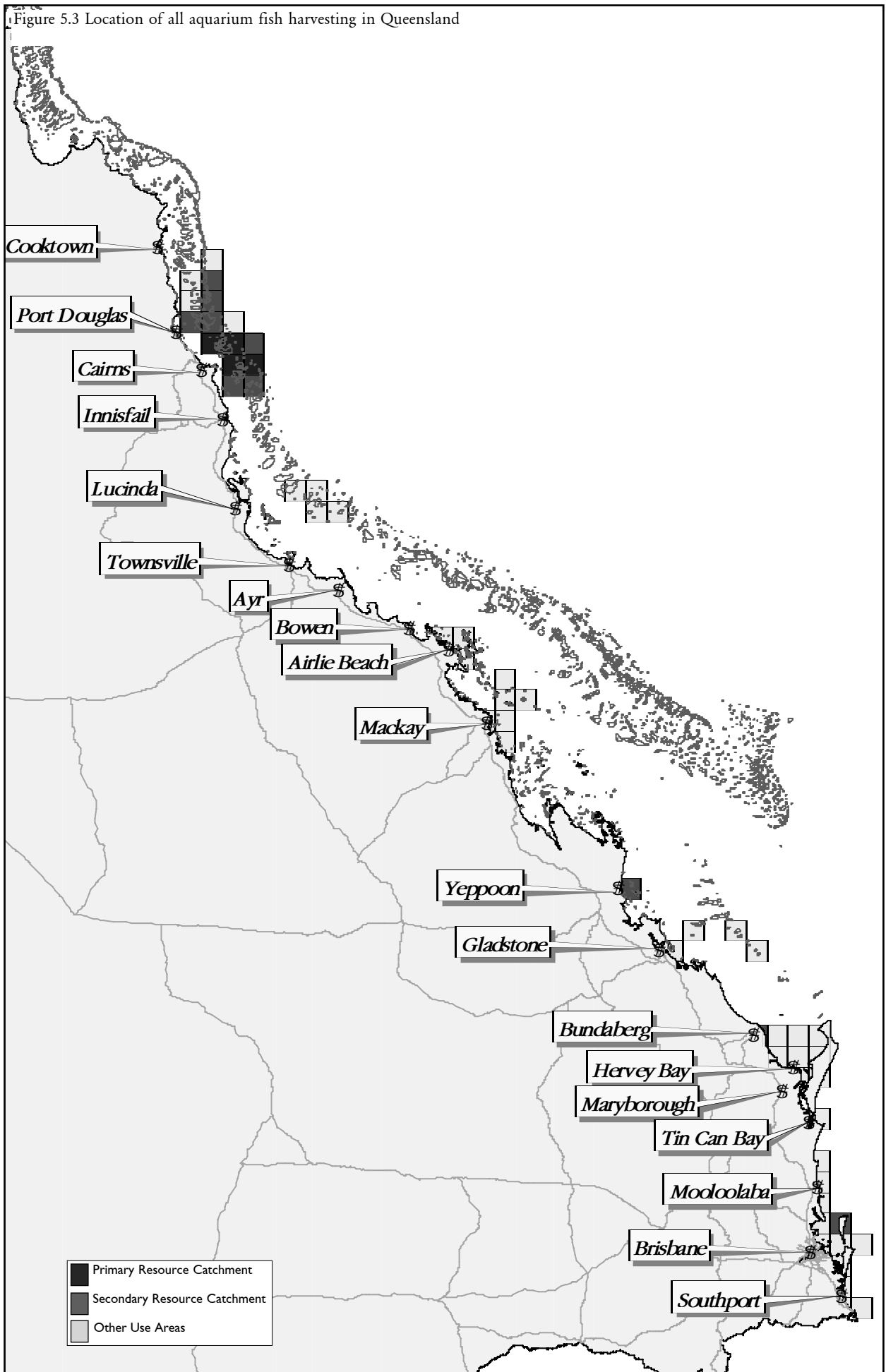


Figure 5.3 Location of all aquarium fish harvesting in Queensland



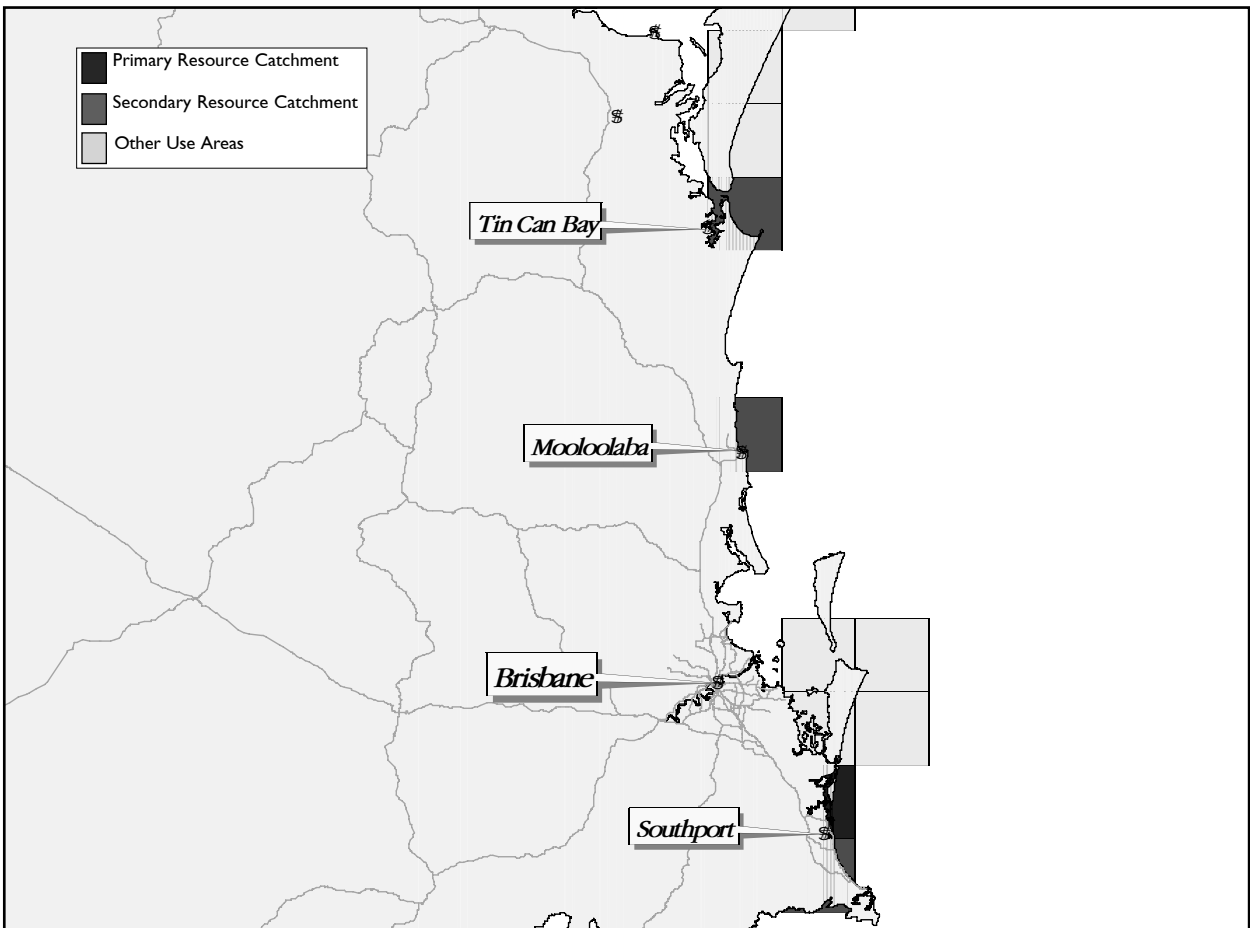


Figure 5.4 Location of all beachworm harvesting in Queensland

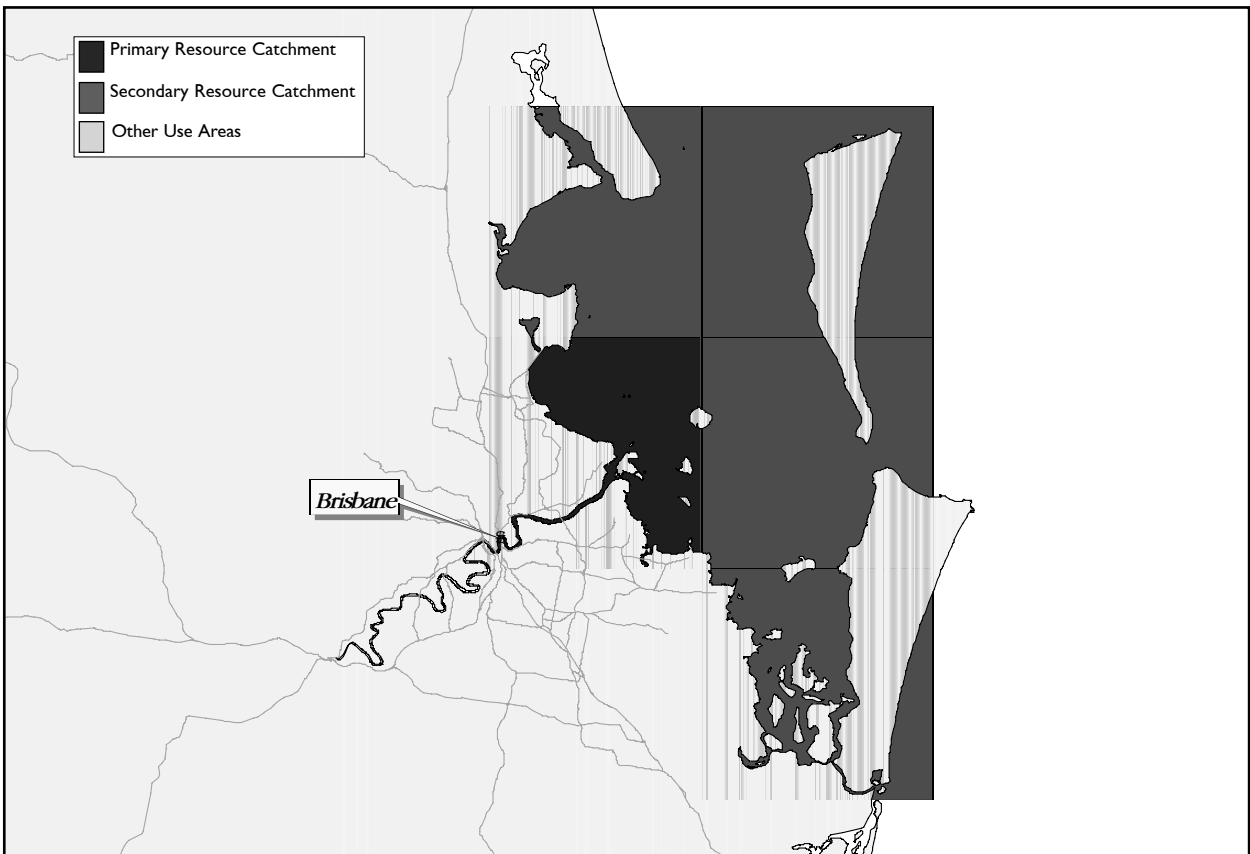


Figure 5.5 Location of all bloodworm and tubeworm harvesting in Queensland

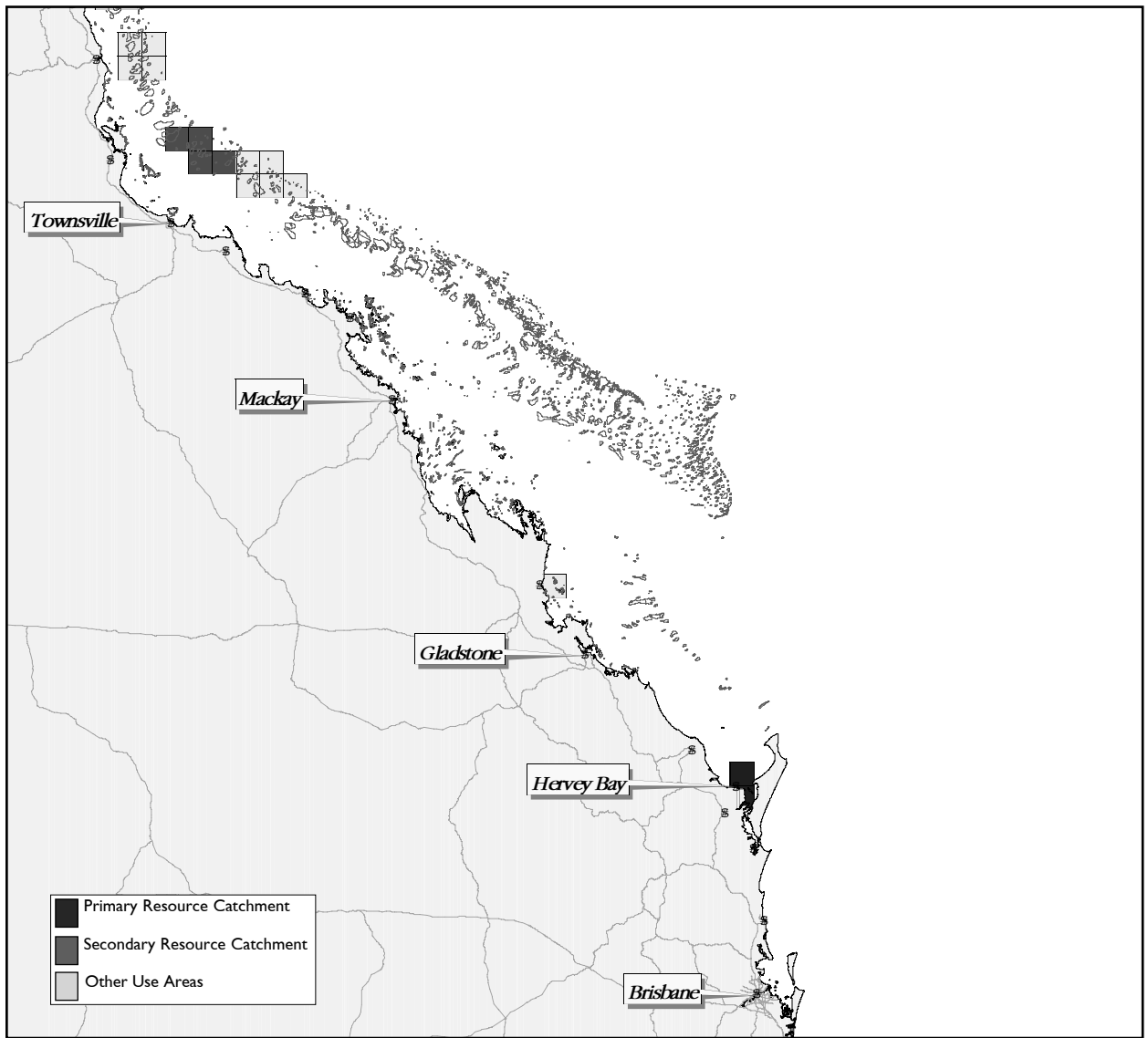


Figure 5.6 Location of all grit and sand harvesting in Queensland