



AUSTRALIAN BUREAU OF STATISTICS

QUEENSLAND

**NON-COMMERCIAL
FISHING**

OCTOBER 1985

Catalogue No. 4504.3

NEW ISSUE

**AUSTRALIAN BUREAU OF STATISTICS
QUEENSLAND OFFICE**

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NON-COMMERCIAL FISHING, QUEENSLAND, OCTOBER 1985

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Main Features

- In the 12 months ended October 1985, an estimated 572,000 persons, or 30 per cent of those aged 15 years and over, engaged in one or more non-commercial fishing activities such as rod or line fishing, crabbing, spear fishing, or netting.
- Of the total population aged 15 years and over, the participation rate in non-commercial fishing activity by males was 42 per cent and for females 19 per cent. The participation rate by age group was 33 per cent for the 15 to 19 years age group, 38 per cent for 20 to 44 years, 25 per cent for 45 to 64 years, and 10 per cent for the 65 years and over group. For both employed and unemployed persons the participation rate was 38 per cent and for persons not in the labour force it was 19 per cent.
- An estimated 561,000 persons engaged in rod or line fishing and 69 per cent of these were males. Of the persons involved, 12 per cent were in the 15 to 19 years age group, 64 per cent in the 20 to 44 years age group, 20 per cent in the 45 to 64 years age group, and 4 per cent in the 65 years and over age group.

Main Features (continued)

- Employed persons made up 70 per cent of the rod and line fishing population, unemployed 6 per cent, and not in the labour force 24 per cent.
- Of those who engaged in rod or line fishing in the 12 month period, 29 per cent went fishing on 1 or 2 days, 17 per cent on 3 or 4 days, 23 per cent on 5 to 9 days, 16 per cent on 10 to 19 days, and 15 per cent on 20 days or more.
- For the period covered, an estimated 85,000 boats owned by persons aged 15 years and over were used for non-commercial fishing and 91 per cent of these were power boats. In length, 41 per cent of the boats were under 4 metres, 38 per cent were 4 to under 5 metres, and 21 per cent were 5 metres or over.

Explanatory Notes

Introduction

This publication contains the results of a survey conducted throughout Queensland in October 1955 to investigate participation in non-commercial fishing. The survey, conducted as a supplement to the Australia-wide monthly population survey, was carried out at the request of the Queensland Government.

The survey investigated non-commercial fishing participation in terms of the numbers of persons involved, their fishing destinations, number of days fishing, types of fishing undertaken, and fishing boat ownership and usage.

Monthly Population Survey

The monthly population survey is based on a multi-stage area sample of private dwellings and non-private dwellings (hotels, motels, caravan parks, etc.). The sample covers about two-thirds of 1 per cent of the civilian population of Australia and includes slightly more than two-thirds of 1 per cent of the population of Queensland. Information is obtained from the occupants of selected dwellings.

Non-commercial Fishing Survey

The survey was conducted using the sample of occupied private dwellings and non-private dwellings in Queensland which were included in the monthly population survey. This provided a sample of more than 5,600 households where full response was obtained. Information was obtained from any responsible adult member of the household for all persons in the household in the scope of the survey.

Scope

All persons aged 15 years and over were included in the scope of the survey except:

- (a) usual residents of Queensland temporarily interstate or overseas;
- (b) institutionalised residents of non-private dwellings (e.g. hospitals, nursing homes, prisons, etc.);
- (c) members of the permanent defence forces;
- (d) certain diplomatic personnel of overseas governments, customarily excluded from Census and estimated populations;

(e) visitors to Queensland from interstate or overseas; and

(f) members of non-Australian defence forces (and their dependants) stationed in Australia.

For professional fishermen, charter boat operators, professional fishing guides, and their employees, only fishing activities for their personal recreation were included. That is, the survey results exclude business or employment-related fishing activity and boat usage.

Definitions

Regions of usual residence are based on statistical divisions or groupings of statistical divisions.

The Brisbane Statistical Division (B.S.D.) Region is divided into the Brisbane City (Inner Suburbs and Outer Suburbs) and Balance of B.S.D. Regions. The Moreton Region is the Moreton Statistical Division; the Wide Bay-Burnett/Darling Downs Region is the Wide Bay-Burnett and Darling Downs Statistical Divisions; and the Fitzroy/Mackay Region is the Fitzroy and Mackay Statistical Divisions.

The North and Western Queensland Region comprises the North-West, Far North, Northern, Central-West, and South-West Statistical Divisions.

The Brisbane Statistical Division comprises the Cities of Brisbane, Ipswich, Logan, and Redcliffe, the Shire of Redland, and parts of the Shires of Albert, Beaudesert, Caboolture, Moreton, and Pine Rivers.

Maps delineating the regions are included on pages 11 and 12.

Fishing areas used in the survey were designated by the Fisheries Management Branch of the Queensland Department of Primary Industries.

Queensland was divided into 19 designated fishing areas numbered from 2 to 20 and area 1 was used to designate the Outside Queensland Fishing Area. The major sand islands of North Stradbroke, Moreton, Bribie, and Fraser were designated as Fishing Areas 3, 4, 5, and 8, respectively. The boundary of each of these areas represents fishing from the island itself and thus excludes fishing from a boat.

Explanatory Notes (continued)

Definitions (continued)

Maps delineating the fishing areas are included on pages 13 and 14.

The employment status to which a person is assigned, i.e. employed, unemployed, or not in the labour force, depends on the actual activity during the survey week and conforms closely to definitions specified by the International Labour Office (ILO).

Reliability of the Estimates

All estimates in this publication are based on information obtained from occupants of the dwellings included in the sample. Thus they may differ from the figures that would have resulted if the information had been obtained from the occupants of all private dwellings and non-private dwellings in Queensland. An indication of the likely differences in terms of standard errors is given in the Technical Notes on pages 15 and 16.

Comparability with Data from Other Sources

Differences between estimates in this publication and in other publications relating to the October 1985 monthly population survey are caused by the exclusion of usual residents of Queensland temporarily interstate and institutionalised residents of non-private dwellings as well as a marginally lower response rate for the non-commercial fishing supplement to the monthly survey.

Related Publications

Users may wish to refer to the following publications which are available on request:

"Household Fish Consumption and Non-commercial Fishing, Tasmania, October 1985" (7601.6)

All publications produced by the ABS are listed in the "Catalogue of Publications" (Catalogue No. 1101.0) which is available from any ABS Office.

Unpublished Statistics

The ABS can also make available certain statistics of this survey which are not published. Where it is not practicable to provide the required statistics by telephone, they may be available in other forms, such as photocopy, computer printout, or clerically extracted tabulation. A charge may be made for providing unpublished statistics in these forms.

For further information on these unpublished statistics contact Vern Wills by telephoning Brisbane (07) 222 6260, or write to Information Services at the address above.

NOTE: In the majority of tables in this publication, the sum of the values in the columns and/or rows does not add to the totals. This is because persons who fished in more than one area, engaged in more than one fishing activity, or used different bait sources are counted in each appropriate cell of the table, but are counted only once in the totals.

Symbols and Other Usages

- Nil or less than half the final digit shown.
- * Estimate is subject to a standard error of between 25 and 50 per cent.
- ** Estimate is subject to a standard error of over 50 per cent.
(See Technical Notes on pages 15 and 16.)

Where figures have been rounded, discrepancies may occur between sums of the component items and totals.

D. N. ALLEN
DEPUTY COMMONWEALTH STATISTICIAN

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1 September 1986

Diagram 1 - Boats Used for Non-commercial Fishing by Frequency of Use, Queensland, 12 Months Ended October 1995

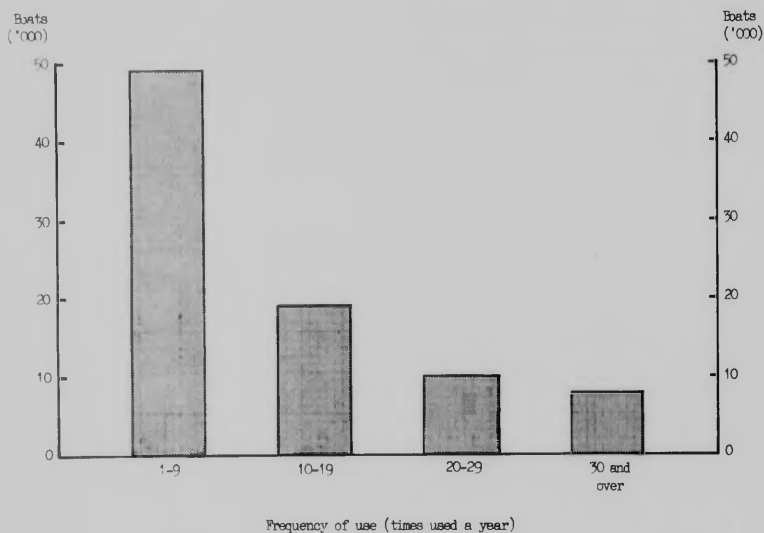


Diagram 2 - Persons Aged 15 Years and Over Engaged in Non-commercial Fishing Activity, Queensland, 12 Months Ended October 1995

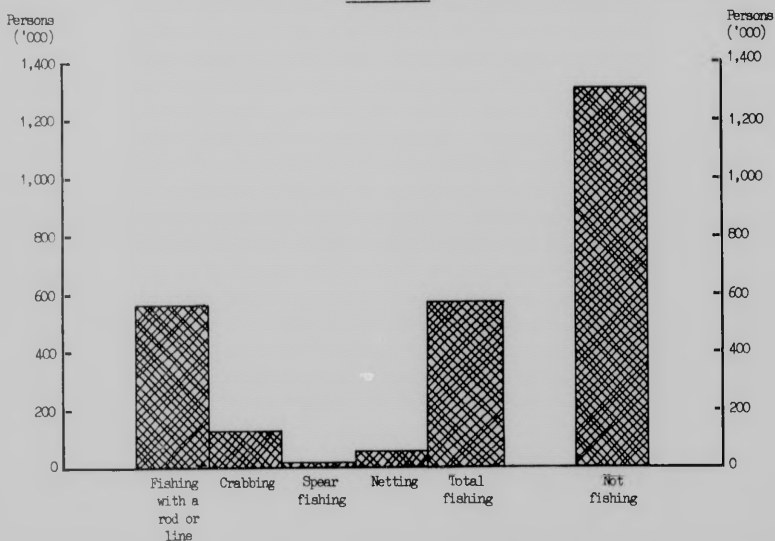


Diagram 3 - Persons Aged 15 Years and Over by Non-commercial Fishing Status, Age, and Sex, Queensland, 12 Months Ended October 1995

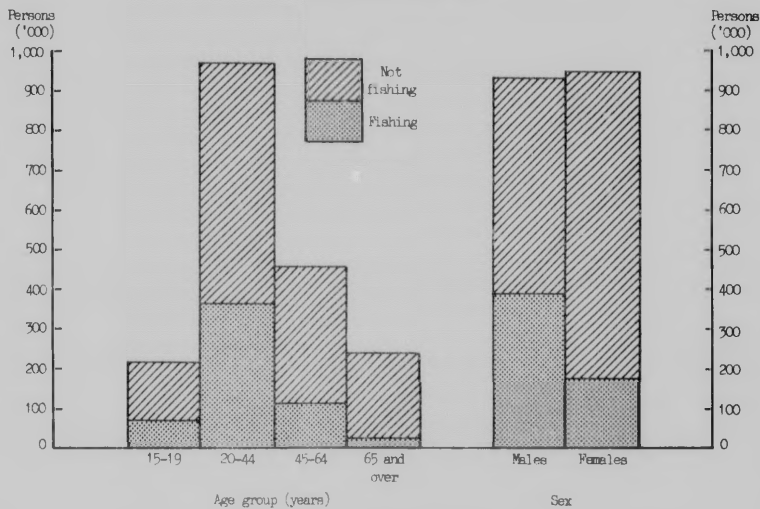


Diagram 4 - Persons Aged 15 Years and Over by Non-commercial Fishing Status, Employment Status, and Sex, Queensland, 12 Months Ended October 1995

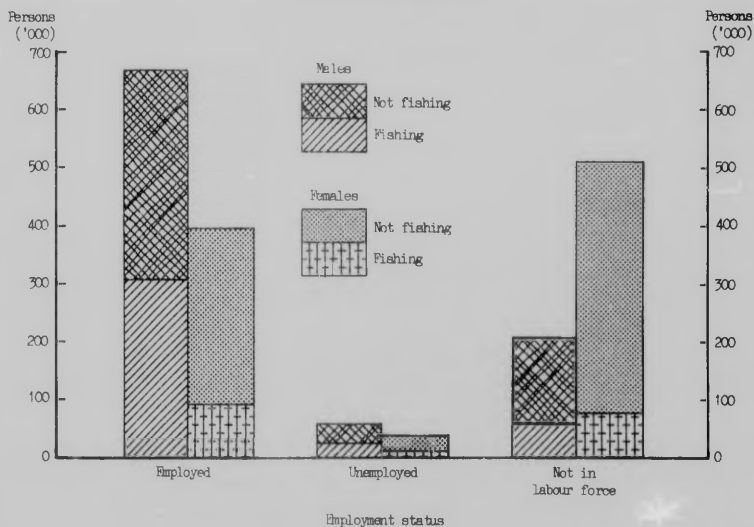


Diagram 5 - Persons Aged 15 Years and Over Fishing with a Rod or Line by Frequency of Fishing, Queensland, 12 Months Ended October 1985

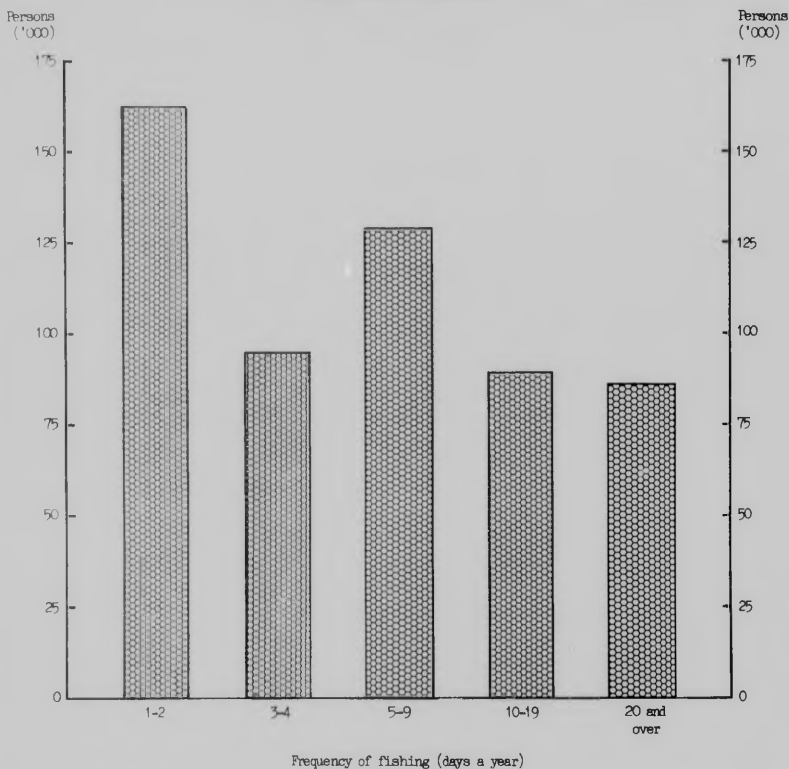


Table 1 - Boats Used for Non-commercial Fishing: Type and Length of Boats Owned by Frequency of Use, Queensland, 12 Months Ended October 1985 ('000)

Frequency of use (a)	Boat length			Boat type		Total boats
	Under 4 metres	4 to under 5 metres	5 metres and over	Power	Other	
1-9	22	16	11	43	6	49
10-19	7	8	4	18	**	19
20-29	4	5	* 1	9	**	10
30 and over	3	3	* 2	7	**	8
<u>Total</u>	35	32	18	77	8	85

(a) Number of times used in last 12 months.

Table 2 - Persons Aged 15 Years and Over: Type of Fishing Activity by Age, Sex, and Employment Status, Queensland, 12 Months Ended October 1955
('000)

Particulars	Type of fishing activity				Total persons fishing etc. (a)	Persons not fishing etc.
	Rod or line fishing	Crabbing	Spear fishing	Netting		
Age group (years)						
15-19	69	11	3	6	70	145
20-44	357	87	11	40	364	600
45-64	111	23	**	9	113	345
65 and over	24	4	**	* 2	24	215
Employment status						
Males: Employed	301	80	10	36	307	358
Unemployed	25	6	* 2	4	26	32
Not in labour force	58	12	* 1	5	59	150
<u>Total</u>	<u>365</u>	<u>98</u>	<u>14</u>	<u>46</u>	<u>392</u>	<u>540</u>
Females: Employed	90	13	* 1	7	92	303
Unemployed	10	* 1	**	**	11	27
Not in labour force	76	12	**	4	77	435
<u>Total</u>	<u>176</u>	<u>26</u>	<u>* 2</u>	<u>11</u>	<u>180</u>	<u>765</u>
Persons: Employed	391	94	11	43	398	660
Unemployed	35	8	3	5	37	59
Not in labour force	134	23	* 2	10	136	586
<u>Total</u>	<u>561</u>	<u>125</u>	<u>16</u>	<u>57</u>	<u>572</u>	<u>1,305</u>

(a) The total does not equal the sum of the component items owing to the involvement of individuals in more than one activity.

Table 3 - Persons Aged 15 Years and Over Fishing with a Rod or Line: Employment Status and Number of Days Fishing by Local and Non-local Area Fishing, Queensland, 12 Months Ended October 1955
('000)

Employment status	Destination fishing area (a)	Number of days fishing					Total persons
		1-2	3-4	5-9	10-19	20 and over	
Employed ..	Local	93	60	67	49	38	307
	Non-local	57	31	38	20	16	162
	<u>Total (b)</u>	<u>111</u>	<u>67</u>	<u>91</u>	<u>64</u>	<u>58</u>	<u>391</u>
Unemployed ..	Local	8	4	6	5	8	31
	Non-local	4	* 1	3	* 2	* 2	11
	<u>Total (b)</u>	<u>8</u>	<u>4</u>	<u>8</u>	<u>6</u>	<u>9</u>	<u>35</u>
Not in labour force	Local	39	18	23	14	16	111
	Non-local	13	8	10	5	3	39
	<u>Total (b)</u>	<u>42</u>	<u>24</u>	<u>30</u>	<u>19</u>	<u>19</u>	<u>134</u>
<u>Total persons</u>	Local	140	82	96	68	62	449
	Non-local	74	40	50	27	21	211
	<u>Total (b)</u>	<u>162</u>	<u>95</u>	<u>129</u>	<u>89</u>	<u>86</u>	<u>561</u>

(a) See Explanatory Notes and fishing areas maps. "Local" denotes fishing by individuals in the fishing area where they normally reside. "Non-local" denotes fishing by individuals in fishing areas other than where they normally reside. (b) The total does not equal the sum of the component items owing to individuals fishing in local and non-local fishing areas.

Table 4 - Persons Aged 15 Years and Over Fishing with a Rod or
(*000)

Particulars	Fishing area (a)								
	2	3	4	5	6	7	8	9	
Persons (c)	259	14	12	26	57	56	21	20	
Males	183	11	11	18	41	39	17	14	
Females	76	3	* 1	8	17	17	4	6	
Age group (years)									
15-19	33	* 1	* 1	3	8	5	3	3	
20-44	166	11	8	19	37	36	14	12	
45-64	48	* 2	* 2	4	10	13	4	4	
65 and over ..	11	**	**	**	3	* 2	**	**	
Employment status									
Employed	180	11	10	20	42	39	17	14	
Unemployed ..	16	* 1	**	* 2	3	4	**	* 2	
Not in labour force ..	63	* 2	* 2	4	13	13	3	4	
Region of usual residence									
Brisbane									
Brisbane City									
Inner suburbs	49	4	3	7	10	5	* 2	* 1	
Outer suburbs	61	4	5	6	9	6	6	**	
Balance	75	4	3	7	10	7	4	* 1	
Moreton	59	* 2	**	4	21	7	4	**	
Wide Bay-Burnett/Darling Downs ..	10	**	-	**	5	30	5	13	
Fitzroy/Warwick	* 2	**	**	**	**	**	**	* 2	
North and Western Queensland ..	3	**	**	**	**	* 2	**	**	
Number of days fishing									
1-2	91	5	4	13	22	18	5	6	
3-4	49	4	4	3	12	13	5	3	
5-9	53	3	3	5	11	11	7	5	
10-19	39	* 1	**	* 2	8	8	3	3	
20 and over	23	* 1	**	3	4	7	* 1	3	
Type of fishing									
Salt-water									
Boat: In open reef	20	-	-	-	4	8	-	3	
In other open water	25	-	-	-	5	8	-	6	
In bay	94	-	-	-	3	22	-	3	
In sheltered waters	64	-	-	-	15	14	-	9	
Shore in bay	47	* 2	* 1	4	5	11	**	4	
Shore in sheltered waters	45	**	**	3	18	6	**	4	
Beach	76	12	10	18	24	20	20	6	
Rocky headland	19	4	* 2	**	7	5	5	* 2	
Jetties etc.	49	**	**	**	7	7	**	**	
Freshwater									
Boat	3	-	-	-	**	**	-	**	
Other	13	-	-	-	3	* 1	**	**	
Usage and source of bait									
Bought bait	172	7	6	18	34	23	8	9	
Gathered bait	26	* 2	* 2	3	7	12	4	4	
Bought and gathered bait	61	5	5	6	16	21	8	6	
Did not use bait, used lures	**	-	-	-	**	**	**	-	

(a) See Explanatory Notes and fishing areas maps. (b) The total does not equal the sum of the component items owing to individuals fishing in more than one area. (c) The total does not equal the sum of the component items for "type of fishing" owing to individuals engaging in more than one type of fishing. (d) The total does not equal the

Line: Details by Fishing Area, Queensland, 12 Months Ended October 1965
(¹⁰⁰⁰)

Fishing area (a)											Total Queens- land (b)
10	11	12	13	14	15	16	17	18	19	20	
38	10	40	11	48	12	26	13	* 1	17	36	(d) 561
27	8	26	9	32	9	19	10	* 7	10	25	365
11	* 2	14	* 2	16	* 2	7	3	**	6	11	176
4	**	4	**	5	**	4	* 1	**	* 2	4	69
26	7	25	7	33	8	16	8	**	12	23	357
7	* 2	8	3	9	* 2	4	3	**	* 2	7	111
**	**	* 2	**	* 1	**	* 1	**	**	**	* 2	24
29	9	27	9	34	10	17	9	**	12	25	391
* 2	-	* 2	**	3	**	4	**	**	* 1	* 1	35
6	**	10	* 1	10	**	5	3	**	4	9	134
**	**	* 1	* 2	**	**	**	**	**	**	**	66
* 1	* 2	**	* 2	* 1	**	**	**	-	**	**	79
* 1	* 1	* 1	**	* 1	**	* 1	-	**	**	* 1	92
**	**	**	* 1	**	**	**	**	**	**	* 2	84
* 2	**	**	**	**	**	-	**	**	**	19	72
31	5	26	4	**	**	* 2	-	-	-	* 1	63
**	**	10	* 2	43	9	22	11	**	15	12	105
13	4	11	4	14	6	8	4	**	4	14	162
7	* 2	10	* 2	7	* 2	5	3	**	2	8	95
9	* 2	8	3	12	* 2	5	3	**	4	7	129
4	**	6	* 1	8	* 1	4	* 1	**	* 2	4	89
5	**	5	**	8	**	3	* 1	**	4	3	86
3	7	7	10	9	11	5	4	* 1	3	-	79
5	* 2	6	* 2	8	* 1	5	* 2	**	3	-	70
4	**	8	**	10	**	* 2	* 2	-	3	-	146
12	**	16	**	23	-	7	4	-	4	-	158
4	**	8	**	8	-	4	* 2	-	* 1	-	92
14	-	14	**	12	**	7	3	-	3	-	121
11	* 1	11	**	12	**	6	* 2	-	3	-	186
7	-	6	**	3	**	* 2	* 1	-	* 2	-	56
7	**	6	**	7	-	5	* 1	-	3	-	91
* 2	-	**	-	* 1	-	* 1	**	-	* 2	4	16
* 2	-	* 1	-	* 2	-	5	* 2	-	8	35	72
20	4	14	4	24	6	12	3	**	4	* 1	318
6	* 2	11	3	10	* 2	5	5	**	6	33	131
11	4	15	3	13	3	8	3	**	4	* 2	159
**	-	**	**	**	**	**	* 1	-	3	-	7

sum of the component items for "usage and source of bait" owing to individuals fishing in more than one area for which different baits usages were applicable.

Table 5 - Persons Aged 15 Years and Over Fishing with a Rod or Line: Reason for Non-local Fishing by Fishing Area, Queensland, 12 Months Ended October 1985
('000)

Fishing area (a)	Reason for non-local (b) fishing			Total persons
	For the fishing	Holiday/visiting/ outing	Other	
2	8	10	3	21
3	5	7	* 2	14
4	7	4	* 1	12
5	11	12	* 1	24
6	12	23	3	38
7	14	20	0	40
8	10	7	4	21
9	* 2	4	4	10
10	3	5	* 2	11
11	6	3	* 1	10
12	3	6	* 2	11
13	6	4	* 1	11
14	3	4	* 2	8
15	8	* 2	* 2	12
16	**	3	* 2	6
17	* 2	5	* 1	8
18	**	**	**	* 1
19	* 1	3	* 2	6
20	**	3	**	4
Total Queensland (c)	88	108	35	(d) 211

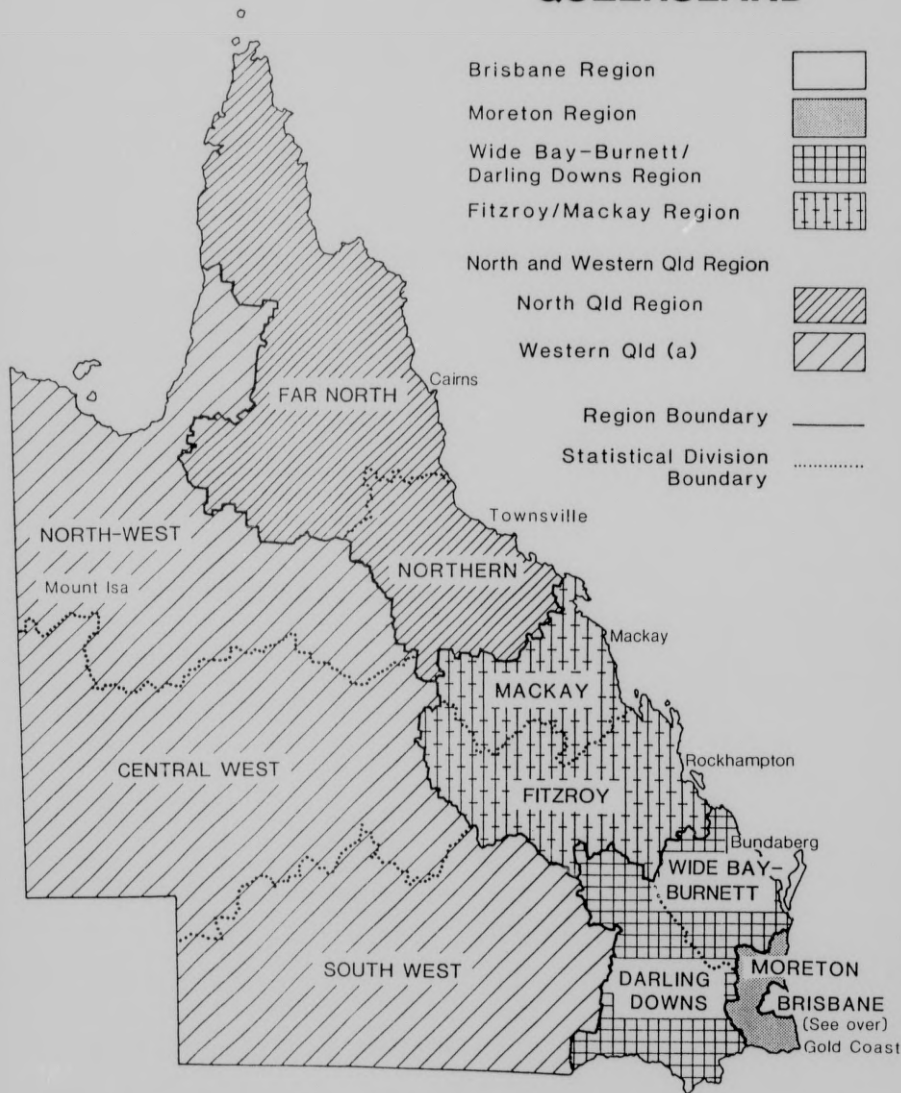
(a) See Explanatory Notes and fishing areas maps.

(b) "Non-local" denotes fishing in areas other than where individuals normally reside.

(c) The total does not equal the sum of the component items owing to individuals fishing in more than one area.

(d) The total does not equal the sum of the component items owing to individuals fishing in more than one non-local area for which different reasons were applicable.

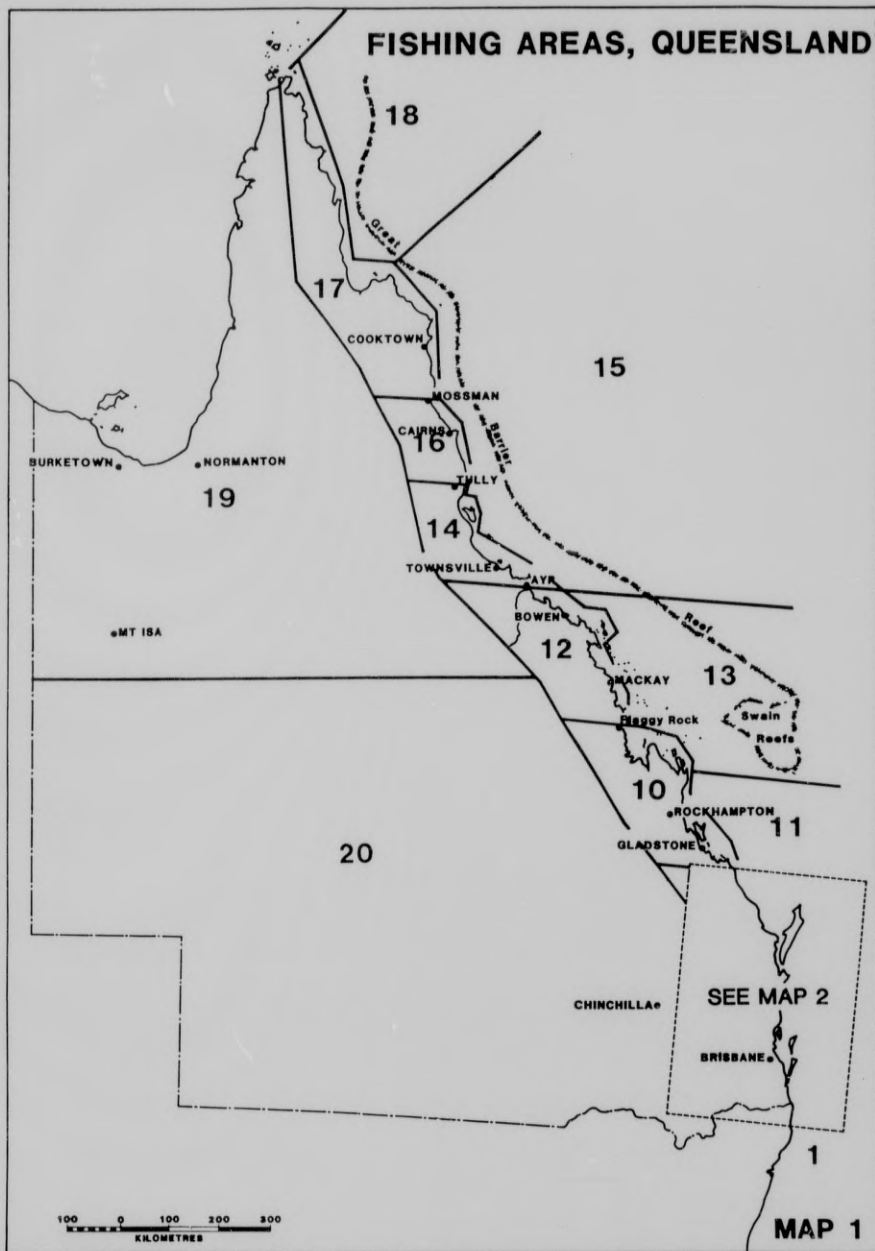
REGIONS OF USUAL RESIDENCE, QUEENSLAND

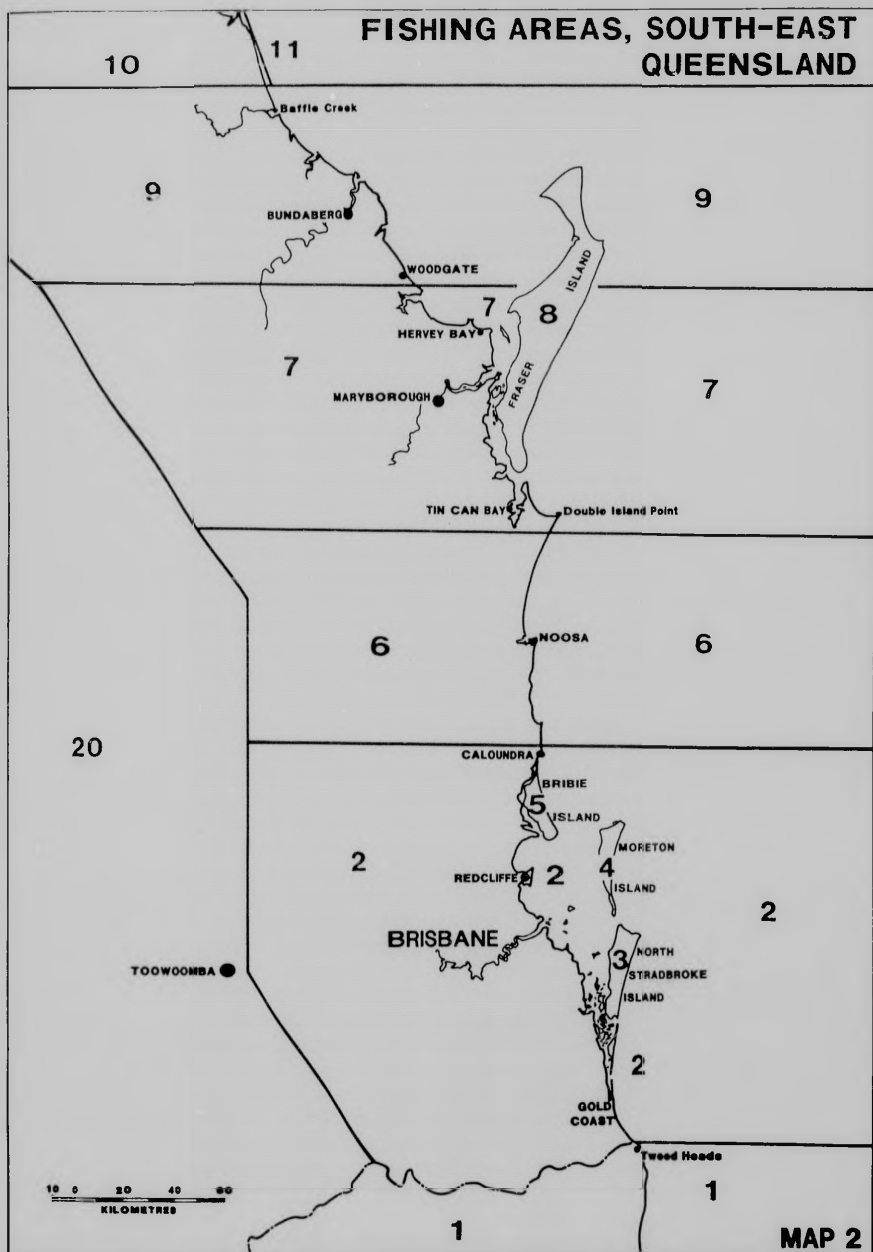


(a) Labour force estimates are not separately available for Western Queensland, but are combined with the North Queensland Region and published as North and Western Queensland Region.

REGIONS OF USUAL RESIDENCE, BRISBANE STATISTICAL DIVISION







Technical Notes

Estimation Procedures

The population estimates for this survey were produced by a ratio estimation technique which ensures that the estimates conform to the estimated age and sex distribution of the population rather than to the age and sex distribution within the sample itself.

Reliability of the Estimates

The statistics from the Survey of Non-commercial Fishing are subject to two types of errors:

- (i) sampling errors (inaccuracies in the estimates because a sample was used rather than a complete count of the population - see below); and
- (ii) non-sampling errors (all other types of errors, e.g. those inaccuracies that may occur because of imperfections in reporting by interviewers or respondents, processing errors, etc.).

Non-sampling errors may occur in any statistical collection, whether it be a full census count or a sample survey. Every effort was made to minimise non-sampling errors in this survey by careful design of questionnaires, by intensive training and supervision of interviewers, and by adopting efficient operating procedures.

Sampling Errors

The estimates in this publication are subject to sampling variability, i.e. they may differ from the figures that would have been produced if all of the population had been included in the survey. One measure of the likely difference attributable to sampling error is given by the standard error, which indicates the extent to which an estimate might have varied by chance because only a sample of units was included. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure which would have been obtained if all of the population had been included. There are about 19 chances in 20 that the difference will be less than two standard errors.

Another measure of sampling error is the relative standard error, which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The relative standard error is a useful measure in that it provides an immediate indication of the percentage errors likely to have occurred due to sampling. A table of standard errors for person estimates is given below.

Standard Errors of Person Estimates, Queensland, October 1955

Size of estimate	Standard errors															
	Brisbane City				Balance of Brisbane Statistical Division		Moreton	Wide Bay-Burnett/Darling Downs		Fitzroy/Mackay		North and Western Queensland		Queensland		
	Inner Suburbs		Outer Suburbs		No.	%		No.	%	No.	%	No.	%	No.	%	No.
1,000	360	36.11	360	35.66	360	36.15	390	38.68	380	37.82	470	47.10	430	42.82	400	40.24
1,200	400	33.00	390	32.59	400	33.04	420	35.35	410	34.57	510	43.04	470	39.14	440	36.73
1,600	460	28.65	450	28.29	460	28.68	490	30.68	480	30.68	600	37.36	540	33.97	510	31.92
2,000	510	25.68	510	25.36	510	25.71	530	27.51	540	26.90	670	33.49	610	30.45	570	28.52
2,500	580	23.03	570	22.75	580	23.06	620	24.67	600	24.12	750	30.04	680	27.31	640	25.45
3,000	630	21.08	620	20.82	630	21.18	680	22.58	660	22.08	820	27.49	750	25.00	690	23.16
4,000	730	18.34	720	18.11	730	18.36	790	19.64	770	19.21	960	23.92	870	21.75	800	19.91
5,000	820	16.47	810	16.27	820	16.49	880	17.64	860	17.25	1,070	21.48	970	19.53	880	17.67
6,000	910	15.09	890	14.90	910	15.11	970	16.16	950	15.81	1,180	19.68	1,070	17.90	960	16.02
8,000	1,050	13.15	1,040	12.99	1,050	13.17	1,130	14.09	1,100	13.78	1,370	17.15	1,250	15.60	1,090	13.68
10,000	1,180	11.83	1,170	11.68	1,180	11.84	1,270	12.67	1,240	12.38	1,540	15.43	1,400	14.03	1,200	12.09
20,000	1,710	8.53	1,690	8.42	1,710	8.54	1,830	9.14	1,790	8.93	2,230	11.13	2,020	10.12	1,690	8.14
30,000	2,120	7.07	2,090	6.97	2,120	7.07	2,270	7.56	2,220	7.39	2,760	9.21	2,510	8.37	1,930	6.42
40,000	2,470	6.18	2,440	6.10	2,470	6.19	2,650	6.62	2,590	6.47	3,220	8.06	2,930	7.33	2,160	5.40
50,000	2,790	5.57	2,750	5.50	2,790	5.58	2,990	5.97	2,920	5.84	3,630	7.27	3,310	6.61	2,350	4.72
100,000	4,060	4.06	4,010	4.01	4,060	4.06	4,350	4.35	4,250	4.25	5,290	5.29	4,810	4.81	3,050	3.07
200,000	5,940	2.97	5,370	2.93	5,950	2.97	6,890	3.44	6,730	3.37	8,380	4.19	7,620	3.81	3,950	1.96

The figures do not give a precise measure of the standard error of a particular estimate since they are based on calculations from a limited number of monthly population surveys over a wide range of labour force characteristics. However, they do provide a suitable indication of the magnitude of the standard errors of estimates from the Survey of Non-commercial Fishing. As the standard errors in the table show, the smaller the estimate the higher the relative

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standard error. Very small estimates are thus subject to such high standard errors (relative to the size of the estimate) as to detract seriously from their value for most reasonable uses. In the tables in this publication, estimates of less than 1,000 persons have not been included and are replaced by "###". Although figures for these small components can in some cases be derived by subtraction, they should not be regarded as reliable. In addition, estimates between 1,000 and 2,500 have been prefixed by "W" to indicate that their standard error is relatively large (between approximately 25 and 50 per cent dependent on the region) compared to the size of the estimate. These figures should thus be interpreted with caution.

The standard errors of the estimates of the number of boats owned are not the same as for the number of persons estimates. Standard errors for boat estimates are given below.

Standard Errors of Boat Estimates, Queensland, October 1955

Size of estimate	Standard error		Size of estimate	Standard error	
	Number	Per cent		Number	Per cent
1,000 ..	410	41.15	12,500 ..	1,470	11.79
1,500 ..	500	33.60	15,000 ..	1,620	10.78
2,000 ..	580	29.12	17,500 ..	1,750	10.00
2,500 ..	650	26.06	20,000 ..	1,870	9.37
3,000 ..	710	23.81	30,000 ..	2,310	7.69
4,000 ..	830	20.65	40,000 ..	2,670	6.69
5,000 ..	920	18.50	50,000 ..	3,000	6.00
7,500 ..	1,140	15.15	65,000 ..	3,950	4.64
10,000 ..	1,310	13.15			

An example of the calculation and use of standard errors is as follows. Table 4 shows that the estimated number of persons aged 15 years and over fishing with a rod or line in Fishing Area 9 was 20,000. The Standard Errors of Person Estimates Table shows that the standard error for this estimate is 1,650, i.e. about 8 per cent of the estimate. Therefore there are two chances in three that the number that would have been obtained if all dwellings had been included in the survey lies between 18,350 and 21,650 and there are about 19 chances in 20 that it would have been within the range 16,700 and 23,300.

Proportions and percentages formed from the ratio of two estimates are also subject to sampling error. The size of the error depends on the accuracy of both the numerator and denominator. The formula for the relative standard error (RSE) of a proportion or percentage is given below:

$$RSE \left(\frac{X}{Y} \right) = \sqrt{[RSE(X)]^2 + [RSE(Y)]^2}$$

