



National Panel Survey of Marine Recreational Fishers 2011–12: Harvest Estimates

New Zealand Fisheries Assessment Report 2014/67

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EXECUTIVE SUMMARY

Wynne-Jones, J.; Gray, A.; Hill, L.; Heinemann, A. (2014). National Panel Survey Of Marine Recreational Fishers 2011–12: Harvest Estimates.

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This report presents the results of a nationwide panel survey of over 7000 marine fishers who reported their fishing activity over the fishing year from 1 October 2011 to 30 September 2012.

The survey was intended as an improvement over previous ‘phone-diary’ surveys, with numerous features designed to reduce bias in terms of respondent selection, the effects of attrition, and recall accuracy. Features of the survey included: meshblock-based face-to-face recruitment, a frequent and adaptable contact regime with a SMS texting option, and a structured questionnaire administered by telephone to record fishing details. Full details of the methodology and its rationale can be found in a separate report (Heinemann et al. 2014).

The concept of this panel survey was that the same fishers remained in the survey for the whole year, in order that their whole year’s fishing could be accurately recorded. Important to the survey’s design was the method of recruitment. Fishers, whether avid or not so avid, were randomly selected thorough meshblock sampling (a form of geographical sampling) to ensure a robust sample with no ‘self selection’ into the survey – a serious problem with some fishing survey designs. Where people self-select into such surveys, this tends to result in the more avid fishers taking part, which produces harvest estimates which are too high.

1000 meshblocks in New Zealand were sampled and 30 390 dwellings were visited. The screening response rate was 86% and of those successfully screened with one or more fishers, 90.8% agreed to participate. 84% of participants agreed to the SMS texting option.

Various techniques were used to ensure regular contact with the fishers. These included SMS texting, direct telephone contact and the use of prizes to encourage on-going participation. Although previous surveys relied more heavily on the participants filling in diaries of their harvest, this was relied on less for this survey. This is because people often do not fill these in dutifully which creates the possibility for improper recall to affect the results. Instead, this survey increased the frequency of contact and directly asked fishers about their catch relatively close to the time of the catch.

Collected data were expanded by recognized statistical methods to produce harvest estimates for the entire New Zealand population (aged 15 or older), for the whole country, by Fisheries Management Areas, and by Fishstock for a number of species. Estimated harvests of finfish and other marine species were converted to total harvest weight using mean weight data provided separately.

The total recreational marine harvest of all marine species, according to the methods of this survey, amounted to over 17 million by number. This included 8.7 million finfish and 8.3 million other marine species. In terms of finfish, the top three species accounted for 38% of all finfish harvested. The most common species by far was snapper, which alone amounted to nearly 27 percent of the finfish harvest by number. Of the other marine species, kina were estimated as the most common harvest, with over 2 million being harvested (but note that this estimate has a CV of 0.76). Next were scallops with an estimate of nearly 1.7 million harvested. Third were mussels with nearly a million harvested. Harvested estimates for commonly caught species are provided.

The report includes an evaluation section that suggests possible ways of refining the survey methodology in the future. It is concluded that the survey’s methods appeared to be an advance over previous methods and able to produce more accurate and defensible harvest estimates.

1. INTRODUCTION

1.1 Background

In order to sustainably manage fish stocks, fisheries managers need to account for all forms of harvesting, including fish taken by recreational fishers.

There are a number of different methods of surveying recreational catch. These include on-site surveys at boat ramps or shore sites, bus-stop (roving) style surveys, aerial over-flight surveys to observe boat activity, boat counts at ramps via observation or ramp cameras, and charter vessel reporting (Hartill et al. 2004). Some methods provide excellent counts of locally harvested marine species via direct observation and provide an opportunity to measure or weigh species. Others attempt to gauge fishing effort over time, or provide relative harvest estimates in one or more areas.

Each method has its advantages and disadvantages in terms of species and geographical coverage, measurement accuracy and scalability of results. However, the length of New Zealand's coastline, the sheer number of access points, and the need to measure fishing activity over time make it difficult and prohibitively expensive, to determine total marine harvest for all of New Zealand using such methods.

Off-site surveys offer a means of measuring all forms of fishing activity across large spatial scales to produce total harvest estimates. There are certain potential advantages with such methods, particularly in terms of geographical coverage, representativeness and thus scalability. Respondents can be asked about fishing over extended periods, especially when they are enrolled in a panel type survey.

There have been a number of attempts to conduct off-site surveys of fishing in New Zealand over the years. These include nationwide off-site surveys conducted in 1996, 1999–00 and 2000–01. Those surveys used telephone based sampling, routine telephone follow-up, and recall assisted by means of a self-completion diary. These historical surveys are generally referred to as 'telephone-diary' surveys.

However, there are potential difficulties with such off-site surveys. These include issues with the representativeness of the sample, biases arising from 'self selection' into such a study (e.g., systematic agreement to participate being related to fishing avidity), systematic attrition over the course of the survey, and the fidelity of any reporting (e.g. recall inaccuracy or 'telescoping' of events). There have been concerns over the final harvest figures provided by these surveys, particularly with the later surveys.

It is within this context that the National Panel Survey 2011–12, earlier known as the Large Scale Multi Species (LSMS) survey was conceived. Realising the potential for such an approach, but also the possible pitfalls, an improved survey method was developed to address issues encountered in past surveys.

The National Research Bureau Ltd, a specialist in large-scale social surveys, in close consultation with the Marine Amateur Fishing Working Group (MAFWG), developed and trialled an improved method (Heinemann & Gray 2009, Wynne-Jones & Heinemann 2010, and Wynne-Jones et al. 2010). This included a more sophisticated population-based known-probability sampling method. Features of the survey were: enrolment of a large panel of fishers to complete a survey over a 12 month period; an adaptable contact regime and use of cell phone texting to assist low burden and frequent contact with panel members, and a structured CATI (Computer Assisted Telephone Interviewing) to standardise delivery of questions about fishing to the panellists. Although a 'diary' of sorts was supplied, completion was not insisted on nor relied on in the interviewing process. The new form of the national off-site survey is technically not a 'diary' survey and is more properly referred to as a 'panel survey'.

1.2 Survey Objectives

The overall objective of this survey was to provide estimates of New Zealand's total amateur marine harvest to inform fisheries management. It was important that these harvest figures be more scientifically robust than in the past and comparable with any repeat of the survey in the future.

Specific objectives were to implement a large scale multi species survey to estimate amateur fisheries harvest in Fisheries Management Areas and Quota Management Areas during the period 01 October 2011 through to 30 September 2012; to optimise the design to ensure that an adequate sample of fishers are surveyed according to age, avidity and location; and to provide absolute estimates of total amateur harvest on a Fishstock basis for all species recorded during the survey.

1.3 About This Report

This report presents summary results from the National Panel Survey Of Marine Recreational Fishers 2011–12. Although this document has a brief description of the method, readers interested in the development and details of the method are referred to Heinemann et al. (2014).

The main body of this report gives details of the outcomes of the recruitment phase of the survey and the resultant makeup of the panellists in terms of age and stated fishing avidity. The process and success in monitoring the panellists is shown and an examination of the 'drop-outs' conducted. A secondary survey of 'drop-in' fishers is also presented.

Key to this survey is the method of expanding the reported fishing by panellists to population estimates. Details of this are given here to better understand how the final harvest estimates were obtained (see also Heinemann et al. 2014).

A section on fishing trip data follows, with weighted data presented by week, method/platform and by FMA (Fisheries Management Area). The main output from this survey, the calculated harvest estimates in both number and tonnes, are presented for the whole of New Zealand. Harvest by species is shown by number, and for most species, by tonnage. Following this are various breakdowns for the species (by number not weight) including by FMA, by catch method, and by platform. Harvest estimates are also shown for 13 frequently caught species in a readily accessible 'one fish to a page' format. For each fish there is a summary of harvest (both number and tonnage) by Fishstock (defined by Quota Management Area, QMA), harvest (number) by method and also by platform, as well as bag size frequency by QMA. The appendices provide a detailed breakdown of harvest results within specific areas, and by fishing method (how the fishing was conducted, e.g. fishing with a rod and reel), and platform (from where the fishing was conducted, e.g. from a boat) and species.

Finally there is an evaluation of the new panel survey method approach which is intended to provide insights into the robustness of the data as well as potential improvements for future surveys of this type.

2. METHOD SUMMARY

2.1 Survey Design Summary

A detailed description of the methods employed for this survey can be found in Heinemann et al. (2014). An abridged version is presented here to provide sufficient context to understand the survey results. Key aspects of the survey's design were:

- Primary sampling of 1000 meshblocks drawn from 42 946 meshblocks nationwide. Meshblocks are defined by Statistics New Zealand and are the smallest population based sampling areas.
- Secondary sampling of up to 32 dwellings/homes within each sampled meshblock. In total, 30 390 dwellings were approached for this survey.
- Face-to-face interviewing of an adult in each selected home to screen for fishers (aged 15 plus) of any avidity from seldom to frequent fishers.
- Random (equal probability) selection of a fisher who was invited to be in the survey panel.

- The actual enrolment of 7013 fishers into the 12 month 2011–12 fisher panel survey.
- Panellists were instructed on the reporting requirements, given a main survey information brochure, instructions on SMS (Short Message Service) texting procedures and a web address with further information including fishing areas and species identification.
- Contact with fishers by automatic SMS or CATI (Computer Assisted Telephone Interview) at least once every month, but as often as weekly, to determine: a) if they had fished or not; and b) if they did fish, the details of their harvest. These details were always obtained by a structured telephone interview.
- Collected data expanded by recognised statistical methods to achieve harvest estimates for the entire New Zealand population (and by FMA, QMA etc.)
- Additional 'drop-in' survey of non-fishers to check on and correct for the harvest of any stated 'non-fishers' in the population who actually went fishing in 2011–12.

2.2 Survey Design Advantages

The development phase of the survey method was substantial and included a trial of text reporting, and a comprehensive pilot stage. It could be argued that the final design is 'state-of-the-art' and as robust as current technology and the budget allowed for. Claimed key advantages of the survey method are:

- Meshblock sampling reduces biases from working with samples based on listed/accessible telephone numbers.
- True nationwide coverage.
- 'Known probability of selection sampling' allows more accurate weighting of collected data up to population estimates.
- Face-to-face recruitment improves agreement to participate and allows physical demonstration of materials and procedures.
- Removal of reliance on a self-completion fishing diary plus user friendly contact methods (including a SMS option) that reduces respondent burden, minimises attrition rates and helps to maintain long term participation in the panel. There is no need to 'rotate' participants under such conditions.
- Overall higher frequency of contact, particularly with more avid fishers, reduces time between catch and reporting, thus reducing recall error.
- The SMS texting option allows a larger sample for the budget and provides instant and personal communication.
- The use of a CATI allows random allocation of interviewer to a fisher each call, reduces any interviewer effect, and ensures that a precise question stream is delivered – including verification and division of catch questions.

2.3 Schematic Of The Survey

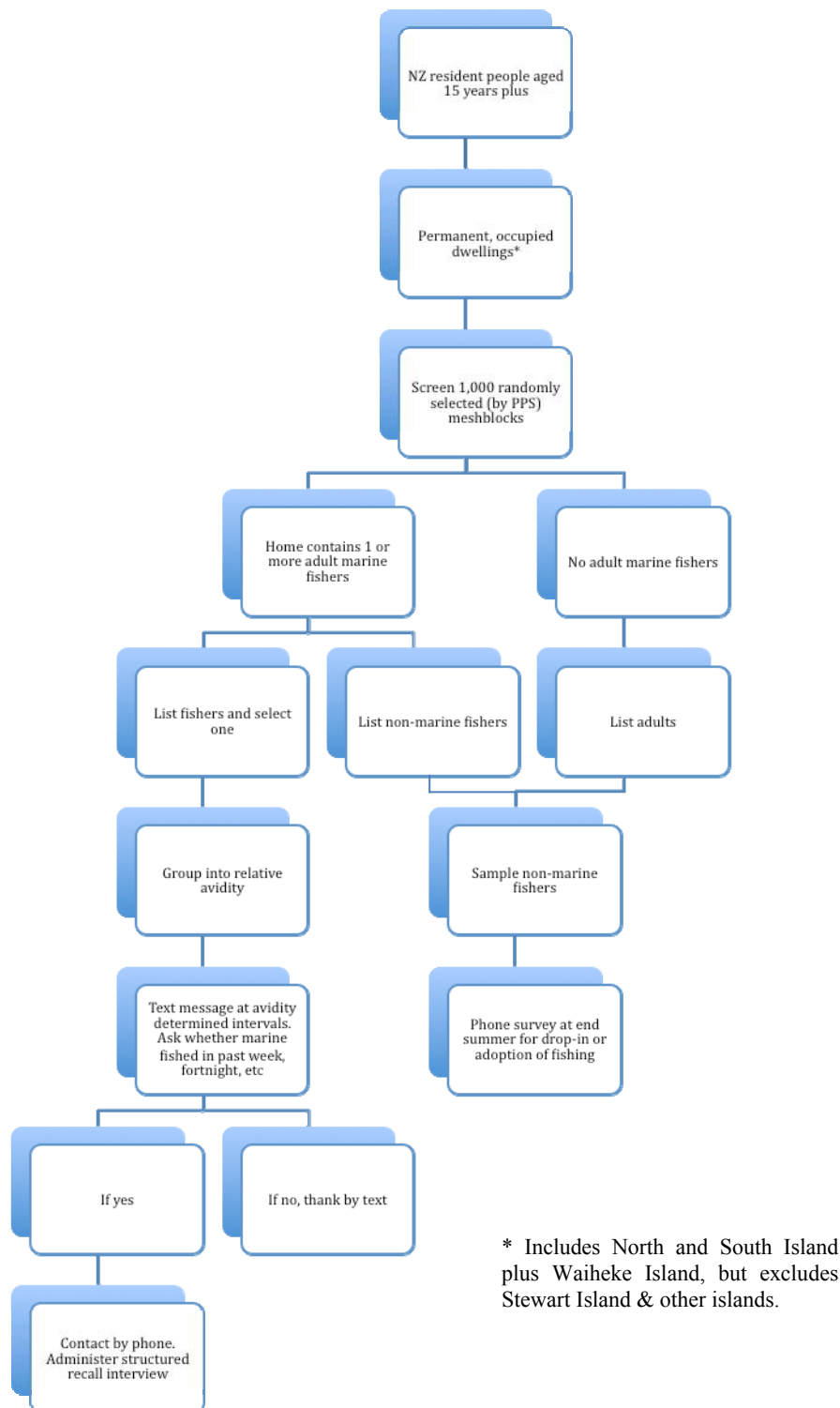


Figure 1: Schematic of panellist selection and contact approach used in the 2011–12 national panel survey.

Figure 1 shows a schematic representation of the panellist selection and contact approach used in the 2011–12 national panel survey.

2.4 The CATI Questionnaire

NRB and the Marine Amateur Fishing Working Group designed the CATI (Computer Assisted Telephone Interview) questionnaire to deliver temporally and spatially resolved estimates of fish harvest. Improvements in the sophistication of the instrument were made by NRB during and after the pilot survey.

The purpose of the questionnaire was to find out from each respondent whether they had been fishing at all (using any method) in a defined period (usually a week or weeks), and if so, details about fishing effort and any catch on a day-by-day basis.

The routing (branching, skips etc.) was conducted by the computer and depended on the answers given by the respondent. The following gives an overview of the major routing:

- For each week the program asked whether there was fishing on any day.
- For each day, the program asked about fishing trips.
- For each trip the program asked details of each platform.
- For each platform the program asked about areas fished.
- For each area fished the program asked about fishing method.
- For each method the program asked if:
 1. Nothing was caught or gathered.
 2. Caught and all released or discarded.
 3. Fish or other species were caught and not discarded or released.
- For each method where something was caught the program asked details on species caught.
- For each species caught by a group catch method (i.e., not rod/line, or spear fishing), there were further questions about any shared effort in catching them in order to isolate personal harvest.

2.5 Drop-In Fisher Survey

A random sample of 3000 'A avidity fishers' (claimed non-fishers) was drawn from all sampled homes where there was at least one declared non-fisher.

- 2621 from non-fishing homes.
- 379 from homes containing at least one fisher (B, C or D avidity).

A survey of the non-fishers (the Drop-In Fisher Survey) was conducted at the 6 month mark (close to the most likely summertime fishing) and again at the end of the main survey as a final check.

The method was a telephone interview with the interviewer following a structured paper-based questionnaire to record any fishing conducted. The question stream emulated that of the CATI questionnaire used to monitor the enrolled fishers. Data were collated and analysed separately from the main survey.

2.6 Survey Fishing Areas

In previous phone-diary surveys, New Zealand coastal waters were divided into 40 zones. These were further divided for the 2011–12 survey into 51 zones/areas in order to further delineate the boundaries of QMAs. Fishers reported catch within these 51 areas (Figure 2).

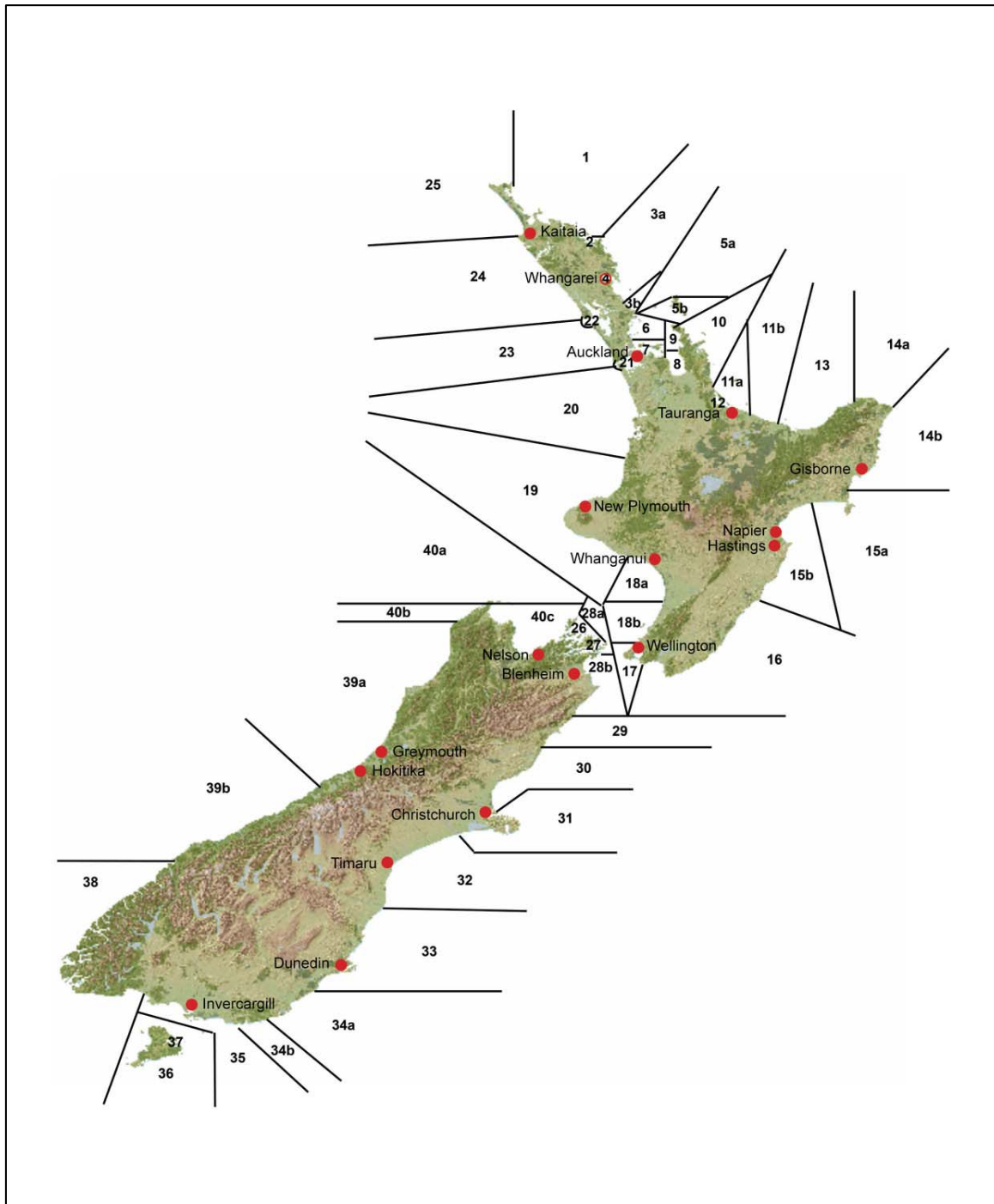


Figure 2: Fishing areas used by panellists when reporting the location of their fishing effort and catch.

2.7 Conversion to FMAs And QMAs

Table 1 shows how the 51 survey areas can be used to derive the generic FMAs (Fishery Management Areas) or species specific QMAs (Quota Management Areas for each species, used to derive the Fishstock).

Table 1: List of survey areas and equivalent FMAs/QMAs.

Area	Area Description	QMA									
		FMA	SNA/K IN	KAH	BCO/HPB/ TAR	GUR	TRE	ALB/ SKJ	CRA	SCA	PAU
1	North Cape to Cape Brett	1	1	1	1	1	1	1	1	1	1
2	Bay of Islands	1	1	1	1	1	1	1	1	1	1
3a	Cape Brett to Te Arai Point	1	1	1	1	1	1	1	1	1	1
3b	Te Arai Point to Cape Rodney	1	1	1	1	1	1	1	2	1	1
4	Whangarei Harbour & entrance	1	1	1	1	1	1	1	1	1	1
5a	North of Barrier Islands	1	1	1	1	1	1	1	2	1	1
5b	Barrier Islands	1	1	1	1	1	1	1	2	CS	1
6	Western Hauraki Gulf	1	1	1	1	1	1	1	2	CS	1
7	Inner Hauraki Gulf	1	1	1	1	1	1	1	2	CS	1
8	Firth of Thames	1	1	1	1	1	1	1	2	CS	1
9	Eastern Hauraki Gulf	1	1	1	1	1	1	1	2	CS	1
10	Eastern Coromandel	1	1	1	1	1	1	1	2	CS	1
11a	Northern Bay of Plenty	1	1	1	1	1	1	1	2	CS	1
11b	Middle Bay of Plenty	1	1	1	1	1	1	1	2	1A	1
12	Tauranga Harbour & entrances	1	1	1	1	1	1	1	2	CS	1
13	Eastern Bay of Plenty	1	1	1	1	1	1	1	2	1A	1
14a	East Cape – Northern	2	2	2	2	2	2	1	2	2A	2
14b	East Cape - Southern	2	2	2	2	2	2	1	3	2A	2
15a	Hawke Bay - Northern	2	2	2	2	2	2	1	3	2A	2
15b	Hawke Bay - Southern	2	2	2	2	2	2	1	4	2A	2
16	Cape Turnagain to Turakirae Head	2	2	2	2	2	2	1	4	2A	2
17	Turakirae Head to Titahi Bay	2	2	2	2	2	2	1	4	2A	2
18a	Waitotara River to Manawatu River	8	8	8	8	1	7	1	9	8A	2
18b	Manawatu River to Titahi Bay	8	8	8	8	1	7	1	4	8A	2
19	Waitotara River to Tirua Point	8	8	8	8	1	7	1	9	8A	2
20	Tirua Point to entrance area of Manukau	9	8	8	1	1	7	1	9	9A	1
21	Manukau Harbour & entrance area	9	8	8	1	1	7	1	9	9A	1
22	Kaipara Harbour & entrance area	9	8	8	1	1	7	1	9	9A	1
23	Manukau Entrance to Kaipara Entrance	9	8	8	1	1	7	1	9	9A	1
24	West of Northland	9	8	8	1	1	7	1	1	9A	1
25	Reef Point to North Cape	9	8	8	1	1	7	1	1	1	1
26	Marlborough Sounds	7	7	3	7	7	7	1	5	7	7
27	Queen Charlotte Sound & Tory Channel	7	7	3	7	7	7	1	5	7	7
28a	Stephen Is to Tory Channel excl. sounds	7	7	3	7	7	7	1	5	7	7
28b	Tory Channel to Clarence River	7	7	3	7	7	7	1	5	7C	7
29	Clarence River to Conway River	3	3	3	3	3	3	1	5	3	3
30	Conway River to Sumner Beach	3	3	3	3	3	3	1	5	3	3
31	Sumner Beach to Rakaia River	3	3	3	3	3	3	1	5	3	3
32	Rakaia River to Waitaki River	3	3	3	3	3	3	1	5	3	3
33	Waitaki River to Tokomirira River	3	3	3	3	3	3	1	7	3	5D
34a	Tokomirira River to Long Point	3	3	3	3	3	3	1	7	3	5D
34b	Long Point to Slope Point	3	3	3	3	3	3	1	8	3	5D
35	Slope Point to Te Waewae Inlet	5	3	3	5	3	3	1	8	5	5D
36	Stewart Is, Ruapuke Island & surrounds	5	3	3	5	3	3	1	8	5	5B
37	Patterson Inlet on Stewart Island	5	3	3	5	3	3	1	8	5	5B
38	South West of the South Island	5	3	3	5	3	3	1	8	5	5A
39a	North West of the South Island	7	7	3	7	7	7	1	9	7A	6
39b	West of the South Island	7	7	3	7	7	7	1	8	7A	6
40a	North of the South Island	7	7	3	7	7	7	1	9	7B	7
40b	Cape Farwell to Kahurangi Point	7	7	3	7	7	7	1	9	7A	7
40c	Golden Bay and Tasman Bay	7	7	3	7	7	7	1	5	7	7

Species key: SNA=snapper, KIN=kingfish, KAH=kahawai, BCO=blue cod, HPB=hapuku/bass, TAR=tarakihi, GUR=gurnard, TRE=trevally, ALB=Albacore tuna, SKJ=skipjack tuna, CRA=rock lobster, SCA=scallop, PAU=paua.

3. SCREENING AND ENROLMENT OUTCOMES

3.1 Sampled Meshblocks

The geographical spread of the 1000 sample meshblocks is shown by viewing their location according to Territorial Local Authority (TLA). The numbers given in Figure 3 are the count of sampled meshblocks in each TLA. Table 2 lists each TLA name together with the meshblock count.

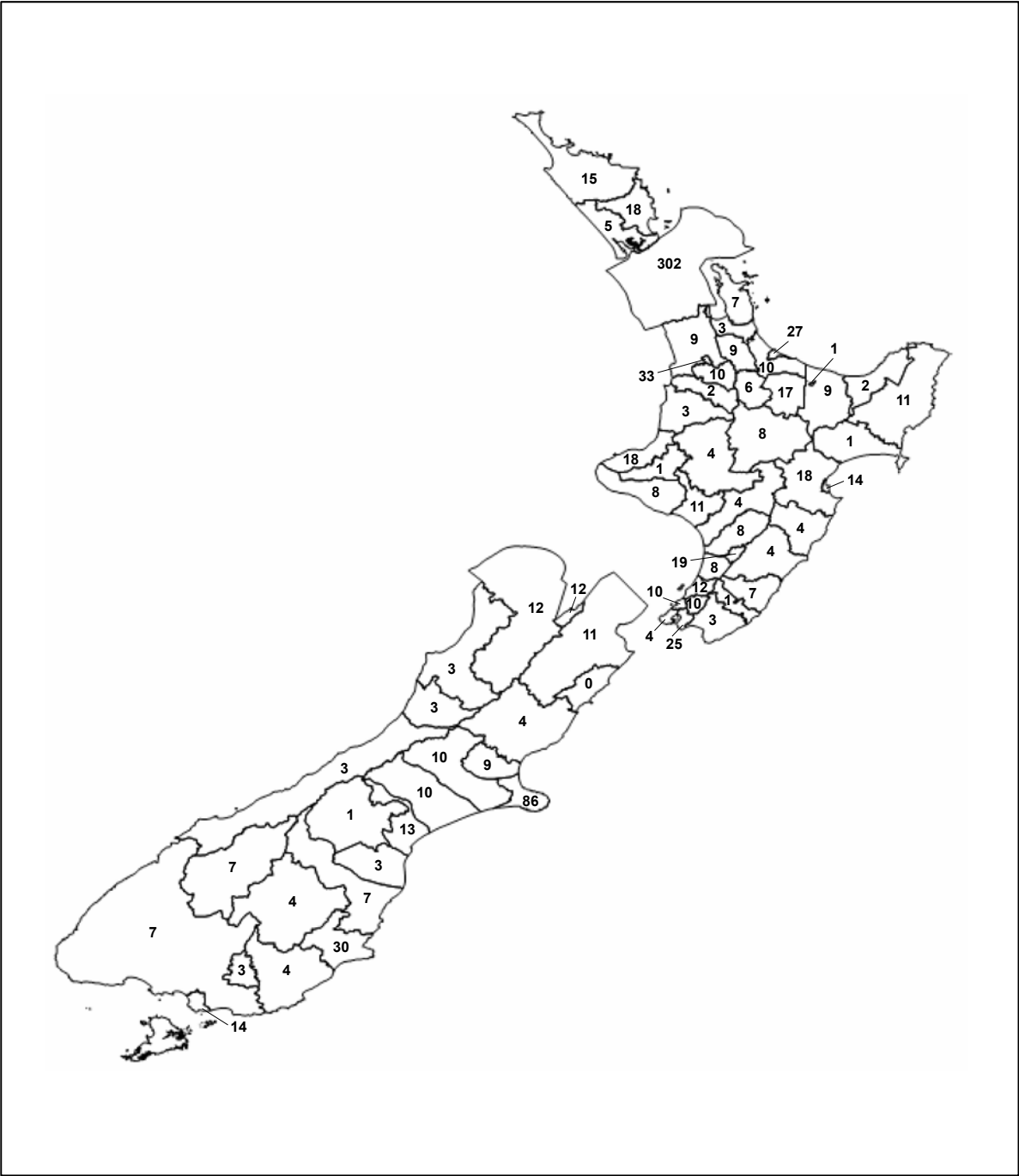


Figure 3: Location of sampled meshblocks within Territorial Local Authorities.

Table 2: List of Territorial Local Authorities and numbers of meshblocks sampled for the survey.

Territorial Local Authority	Meshblock Count	Territorial Local Authority	Meshblock Count
Far North District	15	Rangitikei District	4
Whangarei District	18	Manawatu District	8
Kaipara District	5	Palmerston North City	19
Rodney District	23	Taranua District	4
North Shore City	49	Horowhenua District	8
Waitakere City	42	Kapiti Coast District	12
Auckland City	99	Porirua City	10
Manukau City	66	Upper Hutt City	10
Papakura District	9	Lower Hutt City	25
Franklin District	14	Wellington City	47
Thames-Coromandel District	7	Masterton District	7
Hauraki District	3	Carterton District	1
Waikato District	9	South Wairarapa District	3
Matamata-Piako District	9	Tasman District	12
Hamilton City	33	Nelson City	12
Waipa District	10	Marlborough District	11
Otorohanga District	2	Buller District	3
South Waikato District	6	Grey District	3
Waitomo District	3	Westland District	3
Taupo District	8	Hurunui District	4
Western Bay of Plenty	10	Kaikoura	0
Tauranga City	27	Waimakariri District	9
Rotorua District	17	Christchurch City	86
Whakatane District	9	Selwyn District	10
Kawerau District	1	Ashburton District	10
Opotiki District	2	Timaru District	13
Gisborne District	11	Mackenzie District	1
Wairoa District	1	Waimate District	3
Hastings District	18	Waitaki District	7
Napier City	14	Central Otago District	4
Central Hawke's Bay District	4	Queenstown-Lakes District	7
New Plymouth District	18	Dunedin City	30
Stratford District	1	Clutha District	4
South Taranaki District	8	Southland District	7
Raupehu District	4	Gore District	3
Wanganui District	11	Invercargill City	14

3.2 Outcome Summary

Within the 1000 sampled meshblocks, 30 390 dwellings were visited, of which 24 199 were successfully screened (i.e., a household member agreed to answer the screening questions) from which 7013 fishers of B, C or D avidity¹ aged 15 or over agreed to be enrolled in the 12 month 2011–12 national panel survey (see Table 3). Over 80 percent of those enrolled agreed to text respond and the remainder agreed to report by phone.

Table 3: Number of dwellings visited and contact outcomes.

Screening Summary	
Dwellings Visited	30 390
Vacant	1 777
Household refusal	1 677
No Reply	1 515
Access Denied *	667
Unavailable **	203
Language	156
Infirm	105
Not Available ***	40
Partial	30
Other	21
Screened	24 199
↓	
Enrolment Summary	
Not Eligible	16 390
Respondent Refusal	589
Unavailable **	76
Not Available ***	55
Other	45
Language	14
No Reply	12
Incapacitated	5
Enrolled	7 013

* Gate, dog etc.
 ** Not in area during survey dates
 *** Not available when house visited

In the screened sample, 7809 households included at least one fisher and 3890 of these had one or more 'A Avidity' fishers (stated non-fishers).

3.3 Screening Response Rate

The screening response rate of 86% was calculated as follows:

The response rate calculations were based on the screening outcomes for all sampled dwellings as reported by the interviewers. The outcomes were allocated to categories according to Table 4 for each of the PSU's in the sample, $i = 1$ to 1000.

¹ See page 12 for avidity classifications.

Table 4: Categorisation of screening outcomes.

Category	Outcomes
Interviews (a_i)	Interviews (I)
Not Eligible (b_i)	Not eligible (NE), Vacant (V), Unavailable (U)
Eligibility Not Established (c_i)	No reply (NR), Access Denied (AD), Household refusal (HR)
Eligible Non Response (d_i)	Respondent refusal (RR), Not available (NA), Appointment (APT), Language (L), Incapacitated (INC), Hospitalised (HOS), Partial (P), Other (OTH)

An estimate of the eligible households within the PSU_i was calculated as:

$$a_i + d_i + \frac{c_i \times (a_i + d_i)}{(a_i + b_i + d_i)}$$

The response rate for PSU_i is the number of interviews achieved divided by the estimated eligible households.

$$\frac{a_i}{a_i + d_i + \frac{c_i \times (a_i + d_i)}{(a_i + b_i + d_i)}}$$

This reduces to the following:

$$\frac{a_i \times (a_i + b_i + d_i)}{(a_i + d_i)(a_i + b_i + c_i + d_i)}$$

The response rate for a group of PSU 's is the average of the response rate for the individual PSU 's, weighted by the estimated eligible households within each.

Applying this formula to the screening outcomes resulted in the final screening response rate.

$$\frac{24\,199 \times (24\,199 + 1980 + 352)}{(24\,199 + 352) \times (24\,199 + 1980 + 3859 + 352)} = 86.0\%$$

3.4 Enrolment Response Rate

The overall enrolment response rate, calculated by the same method as for the screening response rate, was 90.8% (i.e., 90.8% of 86%).

$$\frac{7013 \times (7013 + 16\,466 + 708)}{(7013 + 708) \times (7013 + 16\,466 + 12 + 708)} = 90.8\%$$

3.5 Avidity Mix Of Screened Sample

Table 5 shows the raw number of those in the sample who agreed to be screened, according to the proxy reported fishing avidity of household members and their age group.

Table 5: Avidity mix of screened sample.

	TOTAL	Age Group (Years)								
		15–19	20–24	25–34	35–44	45–54	55–64	65–74	75+	Missing
Unweighted Base	51 508	4 515	4 929	8 002	9 475	9 035	6 822	4 822	3 330	578
A-Never/used to/gave it up/ retired from it now	38 780 75.3%	3 355 74.3%	3 712 75.3%	5907 73.8%	6 748 71.2%	6 384 70.7%	5 076 74.4%	3 942 81.8%	3 105 93.2%	551 95.3%
B-Occasionally, but not more than 3 times a year	6 584 12.8%	698 15.5%	679 13.8%	1 100 13.7%	1 434 15.1%	1 314 14.5%	851 12.5%	383 7.9%	110 3.3%	15 2.6%
C-Several times a year, about 4–9 times a year	3 858 7.5%	322 7.1%	351 7.1%	635 7.9%	821 8.7%	834 9.2%	537 7.9%	288 6.0%	60 1.8%	9 1.6%
D-Regularly, 10 times a year or more	2 286 4.4%	140 3.1%	187 3.8%	360 4.5%	472 5.0%	502 5.6%	358 5.2%	209 4.3%	55 1.7%	3 0.5%

The random selection of fishers (B, C and D avidity) was taken from this sample. A further sample of non-fishers as potential 'drop ins' was later taken at the 6 month stage from the screened 'A avidity' household members.

4. MONITORING OF PANELISTS

4.1 Enrolment Rate

The start of the surveyed fishing year was 1 October 2011. However, due to some less than completed meshblocks and some backlog of entering the data, there was still some 'rolling enrolment' into the survey as shown in Table 6 below. Final enrolment was completed by the eighth week of the survey (i.e., the week beginning 14 November).

Table 6: Cumulative total enrolments by week.

Fishing Week	Enrolments
1	4 544
2	5 511
3	5 511
4	6 952
5	6 952
6	6 955
7	6 985
8	7 013

The partial 'rolling enrolment' is of less importance for monthly reporters (B avidity fishers) and fortnightly reporters (C avidity fishers) who would not have fallen due for survey in the first few weeks in any case. However, in the first week, about 450 weekly reporters (D avidity fishers) were not available for surveying, and about 270 in the second week. The effect of this is that some fishers scheduled for weekly contact, simply had a fortnightly, 3 weekly, or monthly follow up to start.

4.2 Contact Regime

A number of considerations dictated timing of attempted contact with the participants – whether by text or by phone. One was their default contact frequency (in the summertime: weekly for D fishers, fortnightly for C fishers, monthly for B fishers). Another was their start week, which was staggered to even out CATI workload. Although weekly reporters ('wk') were always contacted weekly, fortnightly reporters were broken

into two groups ('F1' and 'F2') and half the sample contacted each week. Likewise monthly reporters were broken into four groups and one quarter of them contacted each week, as shown in Table 7.

Table 7: Contact regime (note that the F2 and M2 groups were selected at random to begin the contact regime in the first week).

Fishing Week	Groups Contacted
1	Wk, F2, M2
2	Wk, F1, M3
3	Wk, F2, M4
4	Wk, F1, M1
5	Wk, F2, M2
6	Wk, F1, M3
7	Wk, F2, M4
8	Wk, F1, M1 etc.

Where contact was not made with a person, they remained in the sample, week to week until resolved. When they were contacted, they were not just put back into the same group (unless weekly), but were given the next upcoming correct group with the promised contact frequency – e.g. if a F2 person was not contacted for several weeks, but then was – they were assigned either F1 or F2 depending on which provided the two week gap (so as to provide a minimum two week period between contacts).

4.3 Text Response Rate

This section reports on the success of the texting programme and is limited to those who had a cell phone and who agreed to this from initial contact (84% of the sample).

Text requests were sent to this group of fishers (texters) to find out if they made any fishing attempts or not (in their specific reporting period, i.e., week, fortnight, month). The fishers replied either YES or NO. The results of any fishing were still gathered by phone interview.

Following is their text response rate. This shows that these participants continued to respond at a high rate (over 80% on average) to the text requests throughout the survey (Table 8).

The initial improvement in agreement to text was partially a function of the resignations, but also to a deliberate effort by the interviewers to encourage texting.

Table 8: Text responding by week.

Dates	Fishing week	Texts out	Replied YES	Replied NO	Yes + No	% Responding
26 Sep – 2 Oct 2011	1	2 485	333	1 632	1 965	79.1
3 Oct – 9 Oct	2	2 206	278	1 397	1 675	75.9
10 Oct – 16 Oct	3	2 642	325	1 782	2 107	79.8
17 Oct – 23 Oct	4*	2 709	433	1 657	2 090	77.2
24 Oct – 30 Oct	5	2 660	434	1 762	2 196	82.6
31 Oct – 6 Nov	6	2 630	271	1 883	2 154	81.9
7 Nov – 13 Nov	7	2 646	398	1 847	2 245	84.8
14 Nov – 20 Nov	8	2 439	271	1 779	2 050	84.1
21 Nov – 27 Nov	9	2 764	317	2 045	2 362	85.5
28 Nov – 4 Dec	10	2 947	349	2 080	2 429	82.4
5 Dec – 11 Dec	11	2 641	339	1 946	2 285	86.5
12 Dec – 18 Dec	12	2 429	169	1 945	2 114	87.0
19 Dec – 25 Dec	13**	2 694	336	1 613	1 949	72.3
26 Dec – 1 Jan	14**	2 896	453	1 610	2 063	71.2
2 Jan – 8 Jan 2012	15	2 579	605	1 549	2 154	83.5
9 Jan – 15 Jan	16	2 385	497	1 598	2 095	87.8

Dates	Fishing week	Texts out	Replied YES	Replied NO	Yes + No	% Responding
16 Jan – 22 Jan	17	2 614	561	1 743	2 304	88.1
23 Jan – 29 Jan	18	2 808	508	1 874	2 382	84.8
30 Jan – 5 Feb	19	2 624	447	1 775	2 222	84.7
6 Feb – 12 Feb	20	2 365	457	1 620	2 077	87.8
13 Feb – 19 Feb	21	2 593	424	1 852	2 276	87.8
20 Feb – 26 Feb	22	2 757	329	2 061	2 390	86.7
27 Feb – 4 Mar	23	2 517	188	2 010	2 198	87.3
5 Mar – 11 Mar	24	2 334	233	1 831	2 064	88.4
12 Mar – 18 Mar	25	2 486	261	1 938	2 199	88.4
19 Mar – 25 Mar	26	2 664	218	2 134	2 352	88.3
26 Mar – 1 Apr	27	2 433	249	1 913	2 162	88.9
2 Apr – 8 Apr	28	2 243	303	1 719	2 022	90.1
9 Apr – 15 Apr	29	2 358	396	1 716	2 112	89.6
16 Apr – 22 Apr	30	2 550	363	1 892	2 255	88.4
23 Apr – 29 Apr	31	2 334	270	1 786	2 056	88.1
30 Apr – 6 May	32	2 148	225	1 679	1 904	88.6
7 May – 13 May	33	2 266	140	1 880	2 020	89.1
14 May – 20 May	34	2 441	158	1 989	2 147	88.0
21 May – 27 May	35	1 990	115	1 625	1 740	87.4
28 May – 3 Jun***	36**	1 398	113	971	1 084	77.5
4 Jun – 10 Jun	37	1 510	109	1 221	1 330	88.0
11 Jun – 17 Jun	38	1 747	111	1 488	1 599	91.5
18 Jun – 24 Jun	39	1 592	74	1 283	1 357	85.2
25 Jun – 1 Jul	40	1 373	66	1 113	1 179	85.9
2 Jul – 8 Jul	41	1 513	72	1 241	1 313	86.8
9 Jul – 15 Jul	42	1 745	98	1 412	1 510	86.5
16 Jul – 22 Jul	43	1 588	56	1 290	1 346	84.8
23 Jul – 29 Jul	44	1 371	48	1 126	1 174	85.6
30 Jul – 5 Aug	45	1 494	60	1 237	1 297	86.8
6 Aug – 12 Aug	46	1 717	54	1 423	1 480	86.2
13 Aug – 19 Aug	47	1 591	57	1 294	1 351	84.5
20 Aug – 26 Aug	48	1 365	103	1 077	1 180	86.4
27 Aug – 2 Sep	49	1 481	93	1 201	1 294	87.3
3 Sep – 9 Sep	50	1 689	79	1 382	1 461	86.5
10 Sep – 16 Sep	51	1 558	59	1 280	1 339	85.9
17 Sep – 23 Sep	52	1 353	98	1 067	1 165	86.1
24 Sep – 30 Sep 2012	53****	5 431	253	4 314	4 567	84.1

* Final of the Rugby World Cup and long weekend.

** Text out delayed one day due to Christmas day, New Years Day, Queen's Birthday. No reminders sent.

*** Change to less frequent winter polling.

**** Fishers on all reporting scheduled finally polled to finalise survey.

4.4 CATI Success Rate

CATI operators (between 11 and 23 depending on season) were trained and worked from home on the fishing CATI mainly between the hours of 5 pm and 9 pm, Monday to Thursday. For every interview obtained (recording either no fishing or fishing and details) numerous other calls were made (e.g., no answer, disconnected, busy etc.).

In Table 9, interviews 'Due for week' included YES texters (where we knew fishing had been attempted), and those where we didn't yet know about their fishing (those who did not text reply, or who don't want to text). Where a person could not be contacted, they remained in the sample – thus the 'Due plus overdue for week' number is mainly (and variably) higher than the 'Due for week' depending on the contact success rate.

Table 9: CATI success rate by week.

Fishing Week	Due for week	Due plus overdue for week*	Completed via CATI	Not contacted this week
1	1 376	1 376	592	784
2	1 218	1 699	771	928
3	1 289	2 271	987	1 284
4	1 498	2 800	1 073	1 727
5	1 365	2 688	1 414	1 274
6	1 100	2 004	1 415	589
7	1 150	1 571	1 025	546
8	958	1 311	880	431
9	1 233	1 500	1 059	441
10	1 243	1 496	1 072	424
11	1 080	1 269	916	353
12	791	1 407	1 047	360
13	1 508	1 719	1 231	488
14	1 596	1 901	1 322	579
15	1 297	1 654	1 213	441
16	1 088	1 366	943	423
17	1 336	1 621	1 195	426
18	1 245	1 509	1 012	497
19	1 133	1 471	955	516
20	1 039	1 388	961	427
21	1 171	1 469	1 051	418
22	1 073	1 329	947	382
23	841	1 101	745	356
24	787	1 024	766	258
25	955	1 175	841	334
26	892	1 127	779	348
27	888	1 119	766	353
28	1 026	1 294	932	362
29	1 000	1 289	897	392
30	982	1 114	806	308
31	864	1 196	836	360
32	705	984	645	339
33	756	993	666	327
34	685	912	599	313
35	741	946	660	286
36**	596	838	491	347
37	593	857	530	327
38	499	845	530	315
39	627	877	542	335
40	458	732	415	317
41	581	734	479	255
42	576	831	549	282
43	609	874	589	285
44	440	723	374	349
45	557	812	475	337
46	555	822	468	354
47	614	892	452	440
48	489	856	406	450
49	614	995	573	422
50	591	927	557	370
51	571	868	517	351
52	492	767	468	299
53***	2 825	2 860	2 458	402

* This column is not just the sum of 'not contacted' and 'due for week'. This is because some 'not contacted' would fall due in any case the following week.

** Change to less frequent winter polling. *** Fishers on all reporting scheduled finally polled to finalise survey.

The results show the challenge of reaching participants. Over the first few weeks there was some slippage in gaining responses – the number of interviews 'remaining' was increasing, despite the interviewers achieving more and more interviews. After week 4, however, there was some gain and the number of interviews remaining (i.e., not done) started to decrease.

Realistically it is not actually possible to contact all those where an interview is needed. People are out, on evening shift, have their phones off, are on holiday, refuse to cooperate, or have lost or changed their cell phone. However when they are contacted eventually' all past weeks can be resolved (whether there was any fishing or, more commonly, none at all).

4.5 Final Response By Week

The survey response per week at the completion of the survey is shown in Figure 4. A 'response' included a 'No' via text, but where a 'Yes' text was received an interview must have taken place to 'count' (i.e., fishing details must have been recorded).

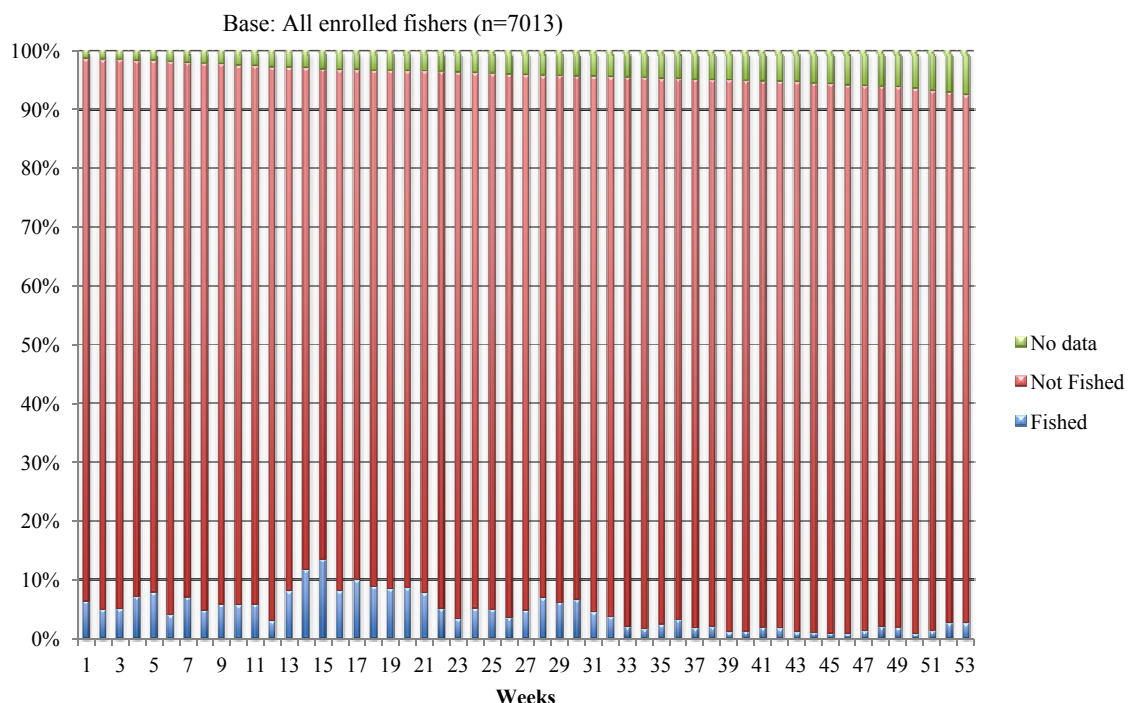


Figure 4: Participant's response by week.

As can be seen, the response per week for the survey overall was extremely high, only diminishing in latter weeks to around 92%. Missing data in the final weeks can be seen as less critical with low rates of fishing in the winter.

A concerted effort was made throughout the survey to recover those lost to the survey because they moved or a changed their contact details. This included internet searching potential new addresses or contacting relatives who sometimes gave new contact details.

At the end of the survey, all but 23 of those 'resigned' from the survey were added back into the sample and an appeal made for fishing details despite their earlier reticence to participate. Many of these people, when politely requested, actually did furnish their fishing (or not fishing) details thus improving the response rate.

4.6 Drop-Outs

The following graph (Figure 5) shows cumulative drop-outs from the study from beginning to end. Drop-outs in this graph, include those who no longer wished to participate in the study ('Resignations'), as well as those for whom we no longer had sufficient contact information to successfully make contact, or who were away ('Suspended').

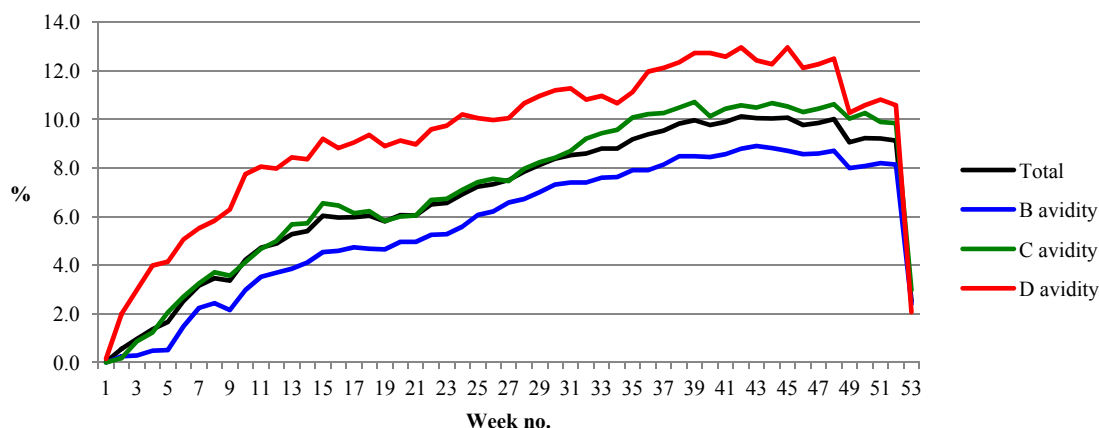


Figure 5: Total drop outs by week and avidity.(Percent resigned or suspended by avidity group.)

Inevitably more people dropped out at the start of the survey, as they found out what the survey involved, and/or contact details were discovered to be incorrect. After this there was only a gradual but continual increase of total drop-outs. This modest drop-out rate is exceptional for a 12 month survey. This supports the proposition that it is possible to monitor the behaviour of most fishers for an extended period of time using the national panel SMS/CATI method.

At the peak point (week 42), there were 710 drop-outs (10.1%) from the survey. The rate of drop-outs appears marginally higher with higher (stated) fishing avidity: B avidity 8.8%, C avidity 10.6%, D avidity 13.0%.

A key point of interest in Figure 5 is the sudden decrease of drop-outs in the final week of the survey. This is because all possible participants with any contact numbers at all, whether they had resigned or been suspended, were put back into the contact sample in order to entice missing fishing information wherever possible. As shown by the final response rate, this tactic had a high degree of success. Many people, even if they had resigned from the survey did agree to provide their missing information (which may have been 'no fishing').

A closer examination of the data (Figure 6) shows that actual resignations (where people wish to withdraw from the survey) is the more significant of the two reasons for drop-outs.

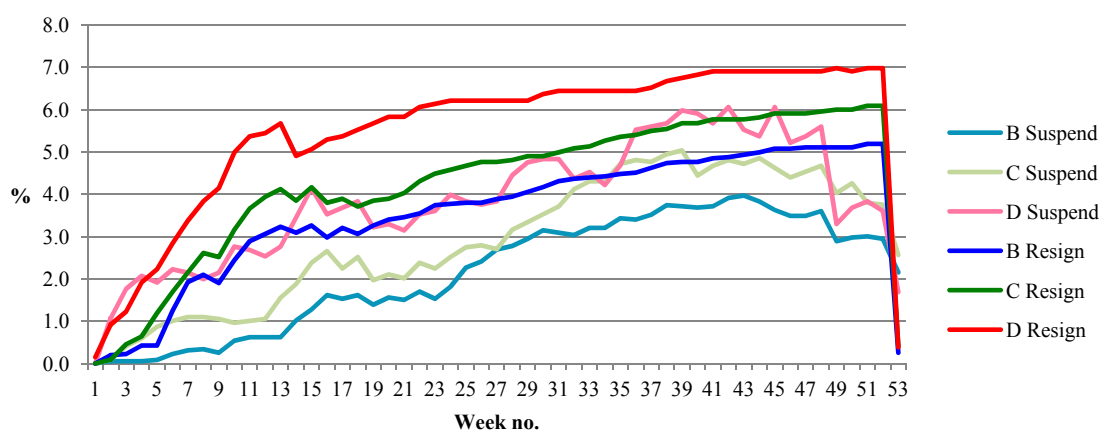


Figure 6: Resignations and suspensions by week and avidity. (Percent resigned and suspended by avidity group).

4.7 Reasons For Resignations

The number of panellists classified as 'resigned' at week 53 of the survey was 397. This included anyone that said they wished to quit the survey, plus the respondents we knew to be deceased. There appeared only minor variations in the propensity to resign according to sex (Table 10) and stated fishing avidity (Table 11).

Table 10: Resignations by sex.

	No. Enrolled	No. Resigned	% Resigned
Males	5 123	288	5.6%
Females	1 890	109	5.8%
Total	7 013	397	5.7%

Table 11: Resignations by stated avidity.

	No. Enrolled	No. Resigned	% Resigned
B Avidity	3 526	179	5.1%
C Avidity	2 183	128	5.9%
D Avidity	1 304	90	6.9%
Total	7 013	397	5.7%

Contact was attempted again at the end of the survey with those that were 'resigned' (except for the deceased) to try to get fishing details. At the same time respondents were asked why they had resigned.

About half declined to answer or were not contactable. In total we obtained reasons/excuses for resigning from 191 persons (48.1% of the resigns), including the few deceased participants and a few that we had already documented (Table 12). Non-response was a mix of non-contactable participants and participants who refused to respond.

Table 12: Reasons / excuses for resigning.

(multiple response possible)	
Reasons for resigning	Number of Mentions*
None known/no contact	218
Haven't fished**	73
Claimed burden	42
Don't fish	40
Deceased	18
Poor health	16
Other (various)	15
Because not the primary fisher	9
Didn't see the point	8
Going/gone overseas	8
Sold boat/fishing gear	6
Too old to fish now	3

* Multiple response and so do not total 397.

** 16 also said 'don't fish' (i.e., don't fish plus haven't fished = 97 or 50.8% of resigners).

Some of those that said they 'hadn't fished' could well have meant 'since last contact'. They could have fished earlier in the season and the 'non fishing' could just refer to the winter. Note that the fishing activity of a number of 'resigned' panellists was ultimately resolved at the end of the survey.

4.8 Contact Issues

Based on interviewers comments and examination of the contact database, the main reasons for the failure to contact panel members were:

- They refuse to reply – although they haven't resigned.
- One of more of their contact numbers is wrong.
- Failure to answer cell phones.
- Our call times may not suit.
- They have moved address or changed phone numbers without telling us.
- They may have left New Zealand (especially to Australia).
- They could be on holiday.

Not helpful to this project were a number of changes in the telecommunications industry during the time of the project.

Firstly, Telecom shut down the CDMA network from July 31st 2012. This meant that many people with cell phones on the old Telecom plan had to change to other suppliers/platforms – and often they did not provide their new number. It was not possible to determine in advance which phones might be affected by the CDMA network termination because of the new ability (unbundling rules) to 'port' telephone numbers to different networks.

Secondly, there was a significant market push by two new telecommunications providers, 2 Degrees and Skinny, into the New Zealand mobile services market. It is not known how many of the study's participants may have migrated to these new providers or whether they advised us of any new numbers if they did. However, provided NRB knew the numbers, the SMS Freetext system was able to work with all the providers except for the latest market entrant Skinny. There were no issues where anyone ported their number to a new provider, except to Skinny. Issues related mainly to unadvised changes of numbers, principally where there were no back up numbers.

The various contact issues required significant efforts to try and track participants lost to the project. These efforts included:

- White Pages check to see if better phone number could be found for the address.
- Sending of a self-completion 'Contact Repair Form' with a reply paid envelope asking participants to inform us of better contact details.
- Paperwork check to check if there were any phone number transcription errors – and to find backup contact details to trace the person.
- Ringing on a Saturday or on weekdays to try and contact those not at home weeknights.

Trial of the self-completion Contact Repair Form was not successful, with few sending these back.

At first it appeared that the White Pages would be of very limited help in tracking participants, and few matches or new numbers were found. Later in the survey a new technique was found which involved locating possible relatives by area, and related searches to obtain the participant's new number. This process repaired a good number of contacts.

Being able to remedy contact details, especially with people who move address is likely to remain a challenge for future surveys of this nature. Collecting email addresses of participants, only conducted in a limited way in this survey, would assist with this, as people often keep the same email address when they move.

4.9 Accounting For Non-Response

Treatment of missing data resulting from non-response was conducted after the survey's completion. NRB provided to the team's professional statistician a list of all respondents (n=397) for which there was one or more week of missing data together with any known reasons for the missing data. These reasons (held on the participant database) could include the participant being deceased, overseas, no longer contactable, refusing to respond, too sick etc. The intention of providing this information was to allow an informed decision on how to treat the missing data, whether by imputation or other statistical means.

5. DROP-IN SURVEY RESULTS

5.1 Response Rate

Table 13 summarises final outcomes for both waves of the survey after the prescribed six telephone calls.

Table 13: Panel survey drop-in fisher survey telephone call final outcomes.

Code*	Description	Six Month Survey	Twelve month Survey
I	Interview – not fished	1 720	1 679
NE or E	No phone number	630	620
E	Disconnected	175	265
E	Wrong number (incl. moved)	152	137
EU	Answer phone	104	122
EU	No reply	67	51
I	Interview - fished	60	30
E	Refused	39	38
E	Not available at time of call	17	18
E	Language difficulty	11	9
EU	Engaged	9	12
E	Other	8	14**
NE	Unavailable during survey	5	1
E	Incapacitated	3	4
	TOTAL	3 000	3 000

* Key: I = Interview, E = Eligible but not interviewed, NE = Not Eligible, EU = Eligibility Unknown

** Includes 8 deceased

Note that there was a high rate of 'no phone number' for this survey because obtaining numbers from all 24 199 screened homes from which this non-fisher sample was drawn was difficult, as at the time of the initial contact there was only a low chance of a further interview being required. The rate of disconnects and wrong phone numbers is not unexpected, as many people would have moved house during this time. 13.4% of calls were to phones that were either disconnected or had a wrong number by the end of the survey.

Internal migration figures from Statistics NZ show that half the population changes address between one 5-yearly Census and another, which loosely approximates to 10% in each year.

For the six month survey, from the 2370 possible calls where there was a telephone number, 1780 interviews were conducted (1720 having not fished, 60 having fished).

For the final twelve month survey, where there was a telephone number (including 10 new numbers obtained) 1709 interviews were conducted (1679 having not fished, 30 having fished).

The response rate can be calculated using the formula following. The letter codes are explained in Table 13.

$$RR = \frac{I \times (I + E + NE)}{(I + E) \times (I + E + NE + EU)}$$

The calculated response rate, assuming 'no phone number' as 'not eligible' (or 'out of frame') was **76.6%** at the six month point and **73.1%** at the twelve month point.

The calculated response rate, assuming 'no phone number' as 'eligible but not interviewed' was **59.4%** at the six month point and **57.0%** at the twelve month point.

5.2 Fishing Activity

Of the A Avidity respondents surveyed, 86 (5%), reported that they had in fact fished, despite them declaring themselves at the time of screening to be non-fishers (based on the final number of respondents contacted).

A summary of the fishing and personal harvest recorded from this 'drop-in fishing' is shown in Table 14.

Table 14: Drop-in fisher survey fishing summary.

	Non-fishers in fishing homes	Non-fishers in non- fishing homes	Total
Respondents contacted (at twelve months)	223	1486	1709
Fished	18	68	86
<i>% Fished</i>	8.1%	4.6%	5.0%
Trips	32	120	152
Harvest trips	18	70	88
Finfish harvested	34.5	337.63	372.13
<i>Finfish harvested per head</i>	0.15	0.23	0.22
Other marine species harvested	0	412	412
<i>Other marine species harvested per head</i>	0	0.28	0.24

The number of annual trips reported by these 'non-fishers' was low and so was the harvest rate, with nearly half of the fishing trips producing no harvested fish. This results in the overall number of finfish caught per head being only about 0.22 of a fish (Table 14).

Fishing by A Avidity fishers in 'fishing homes' appears to be nearly double the rate for A Avidity fishers in 'non-fishing homes', bearing in mind sample size limitations.

Harvesting of marine species other than finfish (mainly shellfish) was conducted purely by non-fishers in ostensibly non-fishing homes. Non-fishers in fishing homes did not harvest any 'other marine species'.

5.3 Fishing By Platform

Around half of the fishing 'trips' were from land, although this figure was 72% for non-fishers from fishing homes, compared with about 48% for non-fishers from non-fishing homes (Table 15). Fishing from larger boats (including charter) was more common for non-fishers in non-fishing homes.

Table 15: Drop-in fisher survey trips by platform.

	Non-fishers in fishing homes	Non-fishers in non-fishing homes	Total
Trailer boat	7	41	48
Large motor boat or launch	2	16*	17
Trailer yacht	-	-	-
Larger yacht or keeler	-	4	4
Kayak, canoe, rowboat	-	2	2
Land or jetty	23	57	80
TOTAL	32	120	152

* Includes 1x mussel barge

5.4 Fishing By Method

As is shown in Table 16, the most frequent method of fishing by these supposed 'non-fishers' was by rod or line (83%). Only limited types of fishing methods were reported in this drop-in survey. Hand gathering was only undertaken by non-fishers in non-fishing homes.

Table 16: Drop-in fisher survey trips by method.

	Non-fishers in fishing homes	Non-fishers in non-fishing homes	Total
Rod or line	22	104	126
Longline, kontiki, kite	9	4	13
Net	1	-	-1
Pot	-	-	-
Dredge	-	-	-
Hand gather, flounder	-	4	4
Hand gather by diving	-	8	8
Spearfishing	-	-	-
TOTAL	32	120	152

5.5 Species Personally Harvested

The species most frequently harvested was pipi (n=171) followed by snapper (n=161.5) – Table 17. The pipi were taken by just 4 people, and the snapper by 32 people.

The range of marine species harvested by non-fishers in fishing homes was limited and did not include any shellfish.

Table 17: Drop-in fisher survey species personally harvested.

	Non-fishers in fishing homes	Non-fishers in non-fishing homes	Total
Snapper	23.5	138	161.5
Herring	6	68	74
Kahawai	4	46.3	50.3
Terakihi	-	30	30
Red Gurnard	-	22	22
Blue Cod	-	12	12
Trevally	-	7	7
Kingfish	-	5	5
Butterfish	-	4	4
Skipjack Tuna	-	3	3
John Dory	-	2.33	2.33
Sea Salmon	1	-	1
Finfish Total	34.5	337.63	372.13
Pipi	-	171	171
Scallops	-	80	80
Cockles	-	77	77
Paua	-	60	60
Mussels	-	20	20
Lobster	-	4	4
Non Finfish Total		412	412

6. EXPANSION TO POPULATION-LEVEL DATA

6.1 Estimation Method

The data on recreational fishers is collected from a probability based sample survey. Hence the usual method of estimating population quantities is to weight the respondent's data by the inverse of their probability of selection. Non-response at the respondent level (unit record level), occurs in two ways: households who refuse to participate in the avidity screening questionnaire; and people who when recruited to the panel refuse to participate. To account for this non-response, the selection (sample design) weights were modified.

The probability of selecting a sampled meshblock is:

$$\frac{nM_i}{\sum_N M_i}$$

where n, N, M_i are respectively the sample size, population number of meshblocks and number of occupied dwellings in meshblock i at the 2006 Census. The probability of selecting a dwelling within a meshblock is:

$$\frac{m_i}{M'_i}$$

where m_i, M'_i are respectively the number of dwellings screened for fishers in meshblock i and the number of occupied dwellings in meshblock i when NRB re-enumerated the meshblock at the time of the survey. If there are f_{ij} fishers in dwelling j in meshblock i , then the probability of selecting a fisher is:

$$\frac{1}{f_{ij}}$$

The overall probability of selection is the product of these three probabilities and the selection weight is the inverse of this overall probability:

$$\frac{\sum_N M_i M'_i f_{ij}}{n M_i m_i}$$

Since there is some non-response these selection weights are multiplied by a factor

$$\frac{(a_i + d_i)(a_i + b_i + c_i + d_i)}{a_i(a_i + b_i + d_i)}$$

where a_i, b_i, c_i, d_i are respectively the number of Eligible Responding Households, Not Eligible Households, Eligibility Not Established Households, and Eligible Non-Responding Households in meshblock i . This is the inverse of the meshblock screening response rate as discussed in Section 3.3. Call this weight the adjusted selection weight.

Although the median adjusted selection weight for fishers recruited to the panel was 106.60 with interquartile range (58.64, 218.40), there were some fishers with very large weights, for three reasons. Firstly, the meshblock they lived in had substantial growth in the number of dwellings so that M'_i was very much greater than M_i and hence their ratio was much larger than 1. Secondly the response rate in their meshblock was much lower than average, for example 40% instead of say 80%. Thirdly, they lived in a dwelling with many fishers. Although variability in weights contributes to the overall sample error, truncating the weights (which is known as winsorization) produces some bias. For the more commonly caught species (see Section 9), the impact on the estimates by these respondents with extreme weights was much smaller than the sample errors in part because there are a large number of fishers and trips contributing to the estimate² so the weights were not truncated.

Some people refuse to participate after being recruited to the panel, but this non-response was adjusted at the calibration stage.

The above non-response adjustment controls for broad meshblock characteristics, for example, inner city dwellings may be harder to contact than suburban dwellings. But non-response also varies according to broader geographic regions as well as demographic characteristics (gender, age, ethnicity).

Having conditioned on these characteristics, non-respondents are usually assumed to be missing at random. These sorts of characteristics could be used to build a model of the probability of responding and these model derived probabilities could be used to further adjust the selection weights at the level of an individual. An alternative, which in practice has a similar outcome is to calibrate the respondent data to known population totals for these characteristics. The details of the calibration will be discussed more fully in Section 6.5. But the next paragraphs will give a summary of what is meant by calibration (Deville & Sarndal 1992).

The basic idea behind calibration is an adjustment of the (non-response adjusted) selection weights derived from the inverse of the inclusion probabilities adjusted for non-response. Call these the design weights

² For example, for snapper, for a fisher who both had an extreme weight and whose number of trips and total snapper catch were in the top 5% of fishers, truncating their adjusted selection weight to the 99% percentile of those who caught snapper reduces their weight by a third, and the estimate of snapper caught by about 40% of the sample error.

$$d_k = \frac{1}{\pi'_k}$$

(for respondent k). The adjustment is made so that the new weights, call these w_k , match known population totals of certain auxiliary variables, e.g. for age group or sex counts but are also as close as possible to the d_k 's. In effect the d_k 's can be expressed in terms of what are called g -factors:

$$w_k = g_k d_k \text{ or } w_k = \frac{g_k}{\pi'_k}.$$

It is sensible to consider making the g -factors close to 1 by minimising an appropriate distance between 1 and the g -factors. For example, using the usual Euclidean distance we would minimise:

$$\sum_{k=1}^N (g_k - 1)^2$$

where the sum is over all the population. Of course we only have a sample so we need to minimize a sample version of this:

$$\sum_{k=1}^n \frac{1}{\pi'_k} (g_k - 1)^2$$

or

$$\sum_{k=1}^n \frac{1}{d_k} (w_k - d_k)^2$$

Hence the g -factors are sample dependent. This quantity is minimised subject to the new weights, when applied to the variables thought to be related to non-response, summing to known population totals. For example, if x_i is a (1-0 or dummy) variable which is 1 if the respondent is female aged 35–44 and zero otherwise, and the population count of such people is t_{x_i} , then the constraint is:

$$\sum_{k=1}^n w_k x_{ik} = t_{x_i}.$$

One disadvantage of the Euclidean distance is that the calibrated weights can be negative. A distance which avoids this problem is

$$\sum_{k=1}^n w_k \log \frac{w_k}{d_k} - w_k + d_k$$

based on the iterative proportional fitting algorithm used to get maximum likelihood estimates in contingency tables, and this approach has been used for this survey. With this distance, calibration can be seen to be a generalisation of the raking ratio method of adjusting sample totals to census totals where there is an incomplete multiway table (Deville et al. 1993). For example, there is no sex by age by ethnicity table but only a sex by age table and a sex by ethnicity table.

With a panel survey, it is possible that a person responds for some weeks but not others, for example, because they cannot be contacted. Where possible, these missing data have been backfilled at a subsequent interview. Some method of adjusting for missing data has to be applied where this backfilling has not been possible. There are two possibilities. The first is to delete the person (and all the good information) from the sample and readjust the weights. The second is to use that person's or other respondent's recent information to impute for the missing values. This is discussed in more detail in Section 6.2.

With any survey item non-response can occur. For any time period during the 2011–12 survey, some questions may not be answered. Fortunately this was not the case with key variables such as species, platform, method and area. But some participants refused to give their age or ethnicity. Including 21 stated avidity A, 8 stated avidity B, 8 stated avidity C and 6 stated avidity D. For 4 people recruited to the panel (stated avidity B, C, or D) we did not have a gender. So these missing values were imputed randomly based on avidity and the non-missing age gender or ethnicity distributions in the sample.

6.2 Treatment Of Missing Data

The people who did not give information for all 53 weeks that the survey ran can be categorised as follows.

1. People who exit the population: In the sample of 4126 fishers who fished at least once there are 117 of these (2.8%). There are three ways this can occur: people who die during the year, people who migrate overseas during the year, people who move out of private dwellings, for example go to prison. These reflect the natural dynamics of the population. We do not capture births to the population, for example people who turn 15 during the survey, or who immigrate to New Zealand. This is for cost reasons. We might expect about 100 000 such people in the population or about 3% of the population age 15 and over. In the screening sample we would expect to pick up about 300 such people of whom about 30–40 would be fishers.
2. People who have not been able to be contacted or have resigned from the survey and where data are missing for too many weeks: In the sample there were 246 of these (6.0%). The cut-off for 'too many weeks missing data' is somewhat subjective. Many of these people have long continuous spans of missing data often ending in a resignation, as opposed to long continuous spans of non-missing data interspersed with the occasional missing week. Hence the motivation for the cut-off was whether data were available from that person for the summer season (in particular over the summer holidays) when fishing activity is highest. This suggests a cut-off of about 23 weeks: week 23 of the survey being the end of February. It is usual in household surveys to identify key variables/questions which if not answered lead to the whole record being dropped and the non-respondent being imputed by adjusting the weights. For example, in the Statistics New Zealand Labour Force Survey, if labour force status cannot be established, the record is dropped (Statistics New Zealand, 1999).
3. People who we would not expect to have fished in the missing weeks: In the sample there are 194 of these (4.7%). Essentially, this includes very avid fishers who have about one or two missing weeks, or not so avid fishers who have a moderate number of missing weeks.
4. People who we would expect to have fished in the missing weeks: In the sample there are 40 of these (1.0%).

The imputation categories according to stated fishing avidity are shown in Table 18. For Category 1 people their weight is retained and they remain in the sample with no imputation for the missing records. For Category 2 people their weight is set to zero: effectively the same decision as a recruited person who refuses to participate at the outset. The expectation for Category 3 and 4 people is worked out from their activity during the weeks when they did participate in the survey. The probability of any fishing in a week is calculated by averaging over all weeks for a category, so this is potentially biased during the summer holidays. This is multiplied by the number of missing weeks and, if this rounded is less than 1, they are assumed to have not fished during the missing weeks. So the Category 3 people retain their weight and no records are imputed. Category 4 people are candidates for imputation.

Table 18: Imputation category by stated avidity.

Imputation Category	Stated Avidity		
	B	C	D
1. Don't Impute: death in pop	62	40	15
2. Don't Impute Adjust Weights: too many missing weeks	115	77	54
3. Don't Impute: Not expected to fish	96	59	39
4. Possibly Impute	17	13	10

Table 19 gives the (weighted) percentage of total fish over all species caught by people in the four categories for the weeks they responded.

Table 19: Imputation category by catch.

Imputation Category	Finfish	Non-finfish Species
	%	%
1. Don't Impute: death in pop	0.7	0.7
2. Don't Impute Adjust Weights: too many missing weeks	0.5	1.2
3. Don't Impute: Not expected to fish	2.3	1.3
4. Possibly Impute	1.5	1.0

The imputation method to be used was a form of nearest neighbour imputation. The data used to determine the nearest neighbours were fishing area, species, platform and method. For a fisher with a missing week, their data for the most recent non-missing week was used to define the nearest neighbour classes. For example, if they caught snapper by rod in a trailer motor boat in the Inner Hauraki Gulf, we would look for other fishers who fished in the week of missing data with these characteristics.

Table 20 gives the number of different fishing areas, platforms, methods and species for the fishers we might impute.

Table 20: 'Nearest neighbour' parameters.

						Fishing Area				
						1	2	3	5	
Number of areas						1	2	3	5	
Number of fishers						21	11	6	1	
						Platform				
						1	2	3	5	
Number of platforms						1	2	3	5	
Number of fishers						22	10	6	1	
						Method				
						1	2	3		
Number of methods						1	2	3		
Number of fishers						23	8	8		
						Species				
		1	2	3	4	5	6	7	8	11
Number of species		1	2	3	4	5	6	7	8	11
Number of fishers		4	13	6	3	2	2	4	1	1

After analysing the data it was decided not to impute the missing weeks for the Category 4 fishers, as there was insufficient appropriate nearest-neighbour data:

- Thirteen were in the top decile of finfish fishers or other marine species fishers;
- Nine had no possible donor including one in the top decile;
- Ten had only one possible donor including two in the top decile;
- Looking at the number of fishers in fishing areas by week we see a big fall off after the end of the summer season (week 31) and during July and August (weeks 41–48);

- Some fishers appeared likely to have genuinely stopped fishing: e.g., a fisher who last fished in week 30 at the end of the summer season, a fisher who last fished in week 49 that caught nothing, a fisher who last fished in week 21 (the second week of February) but fished frequently all January (otherwise only once in November), a fisher who last fished in week 27 (the weekend before Easter), etc.;
- In some cases the response to the survey appeared complete, e.g., a fisher who fished in week 53 for which there were contact issues for 6 weeks after week 1.

The decision was therefore made to leave these records as they were (with no imputation), recognising that there could be a small undercount in the number of finfish or other marine species caught.

6.3 Variance Estimates

The method of calculating the variance for the numbers was to use a delete-1 jackknife (Wolter 2007) where the unit deleted was the primary sampling unit (PSU), a SNZ meshblock.

Suppose we have an estimator $\hat{\theta}$ of some population parameter θ based on the full sample. Then the Jackknife Technique has the following steps.

1. Partition the sample of size n into K random groups of equal size m . We assume that, for any given sample s each group is a simple random sample from s even if it itself is not a simple random sample.
2. For each group $k \in K$, calculate $\hat{\theta}_{[-k]}$, an estimator of the same functional form as $\hat{\theta}$ but based on the data omitting the k th group.
3. Define for each $k \in K$, the k th pseudo-value $\hat{\theta}_{-k} = K\hat{\theta} - (K-1)\hat{\theta}_{[-k]}$. This is motivated by the case of the usual sample mean estimator where the sample value X_i can be written as $X_i = n\bar{X} - (n-1)\bar{X}_{[-i]}$ where $\bar{X}$ is the sample mean for the full sample and $\bar{X}_{[-i]}$ is the sample mean for the sample with the i th observation omitted.
4. Form the Jackknife estimator of θ $\hat{\theta}_{[JK]} = \frac{1}{K} \sum_1^K \hat{\theta}_{-k}$ which is an alternative estimator to $\hat{\theta}$. The difference between these two estimators is the Jackknife bias.
5. Form the Jackknife variance estimator $\hat{V}_{[JK1]} = \frac{1}{K(K-1)} \sum_1^K (\hat{\theta}_{-k} - \hat{\theta}_{[JK]})^2$.

The estimator $\hat{V}_{[JK1]}$ is used to estimate $V(\hat{\theta})$ as well as $V(\hat{\theta}_{[JK]})$. If the $\hat{\theta}_{-k}$'s were uncorrelated then $\hat{V}_{[JK1]}$ would be unbiased for $V(\hat{\theta}_{[JK]})$. But in general they are correlated so unbiasedness does not hold. There are no exact results for the properties (bias variance, asymptotic distribution, etc.) of the Jackknife estimator and the Jackknife variance estimator for complex estimators, but empirical evidence suggests that it gives good estimates of sample errors for many complex statistics.

A little algebra shows that $\hat{V}_{[JK1]}$ has an alternative representation as $\frac{K}{(K-1)} \sum_1^K (\hat{\theta}_{[-k]} - \bar{\theta})^2$, where $\bar{\theta}$ is the mean of the $\hat{\theta}_{[-k]}$'s. This is possibly a more intuitive way of thinking about it as a modified variance of the Jackknife estimates.

If the Jackknife bias is large then it is usual to use the Jackknife Mean Square Error estimator $\hat{V}_{[JK2]} = \frac{1}{K(K-1)} \sum_1^K (\hat{\theta}_{-k} - \hat{\theta})^2$ or alternatively $\frac{K}{(K-1)} \sum_1^K (\hat{\theta}_{[-k]} - \hat{\theta})^2$.

Usually in the case of complex designs the *naive* Jackknife estimator given above is adjusted so that for linear estimators the Jackknife variance corresponds to the usual analytic expression of the variance.

For multistage sampling such as the National Panel Survey the random groups for the Jackknife technique are usually the primary sampling units (PSUs); meshblocks in the case of this study but quite often random groups of PSUs. For stratified samples one has to be more careful. One approach is to delete a PSU (or random group of PSUs) from one stratum only.

Because the non-response adjustment was carried out at the meshblock level this variance estimation procedure incorporates variability due to this process. The jackknife estimates were calibrated to the population totals. This means that the variance estimates include the variability due to different types of non-response in the categories of the calibration variables. As mentioned above there are two usual methods of calculating the variance: about the average of the jackknife estimates; and about the estimate. The latter has been used but because of the calibration these are effectively the same.

6.4 Fish Weights Employed

NIWA provided mean fish weight estimates for 26 species of finfish and 3 species of other marine species (Hartill et al. 2013, Hartill & Davey 2014). These were based on fish measurements made during creel surveys of recreational fishers throughout New Zealand. In some cases separate mean weight estimates were provided for summer and winter. In other cases a yearly estimate was used which is a (weighted) average of the two seasonal weights. For the most commonly caught species there were often estimates for all or almost all Quota Management Areas (QMAs). In other cases the QMA weights are an average across all or some QMAs.

Final harvest estimates for a Fishstock were calculated by applying the appropriate (i.e. at the QMA level) mean fish weight to the respondent's catch count and then applying their calibrated weight and summing up across all respondents.

Because the weights of the major fish species also have measurement error, in theory this should be incorporated into the estimates of the weights. The samples to measure the species' weights is independent of the panel survey, so the usual estimator for a product of two independent variables has been used: if X, Y independent then

$$V(XY) = E(X)^2V(Y) + E(Y)^2V(X) + V(X)V(Y)$$

and hence the coefficient of variation squared (CV) is

$$\frac{V(XY)}{E(XY)^2} = \frac{V(XY)}{E(X)^2E(Y)^2} = \frac{V(Y)}{E(Y)^2} + \frac{V(X)}{E(X)^2} + \frac{V(X)}{E(X)^2} \frac{V(Y)}{E(Y)^2} = cv(X)^2 + cv(Y)^2 + cv(X)^2cv(Y)^2$$

For the most commonly caught species the last term, the product of the CVs, is negligible because the CV of the fish weights are very small and the CV of the fish counts are less than 1 so that the product is negligible. The CV of the product of the fish count and fish weight typically increased the CV by 0%, to 0.2%.

6.5 Details Of Calibration

The intention was to calibrate the response adjusted selection weights to known population totals from the 2011 National Census of Population and Dwellings undertaken by SNZ: specifically by gender, age, and ethnicity at the regional council level. However, the 2011 Census was postponed because of the Christchurch earthquake and it was ultimately conducted on 5 March 2013. So the data were not available for estimation.

Instead, SNZ estimated resident population (ERP) data have been used. These data are accurate at the regional council level for coarse classifications of age groups and gender. The classifications by ethnicity are more problematic. The only reliable estimates are for the two broad classifications Maori and non-Maori which are published for the June year and for finer age groups.

As the panel survey started in October, the relevant population classification totals were provided by the September ERP. However, there is little difference between the estimates at the five-year age groups by gender, typically less than 0.5%.

Another complicating factor is that actual age was not collected in the panel survey, rather age in age groups: "15–19", "20–24", "25–34", "35–44", "45–54", "55–64", "65–74", "75+".

So there were two obvious ways to calibrate. We could either model using variables coarse age group, sex and ethnicity plus coarse age group and region, or, fine age group, sex and ethnicity plus region alone. In model terms:

agegp2+sex+eth, agegp2+region, where agegp2 is the coarser age group "15–34" "35–64" "65+"

or

agegp+sex+eth, region, where agegp is the finer age group "15–19" "20–24" "25–34" "35–44" "45–54" "55–64" "65–74" "75+".

Finally, in the panel survey some respondents refused to give their gender, age group or their ethnicity including 21 stated avidity A respondents, 8 stated avidity B, 8 stated avidity C and 6 stated avidity D. For 4 people recruited to the panel (stated avidity B, C, or D) there was no stated gender. So these missing values were imputed randomly based on their avidity alone.

The non-response adjusted selection weights by stated avidity have a Kish design effect (essentially 1 plus the square of the CV of the weights) of 1.176, 1.411, 1.564, 2.162 for the stated avidities A, B, C, and D respectively (Kish 1987).

Using the calibration increases these slightly to: 1.207, 1.456, 1.601, 2.171 for the first option and 1.175, 1.459, 1.662, 2.185 for the second option.

After some analysis, the second calibration option of fine age group, sex and ethnicity plus region alone (agegp+sex+eth, region) was chosen.

The "coverage" factors (how much the sample estimate is rated up or down to match the population total) for the regional council estimates and age group gender and ethnicity are given for stated avidity B, C, or D in Tables 21 and 22.

Table 21: Survey coverage by region.

Region	Coverage	Region	Coverage
Auckland Region	1.12	Northland Region	1.29
Bay of Plenty Region	1.11	Otago Region	1.11
Canterbury Region	1.09	Southland Region	1.12
Gisborne Region	0.94	Taranaki Region	1.10
Hawkes Bay Region	1.12	Tasman Region	1.29
Manawatu-Wanganui Region	1.15	Waikato Region	1.10
Marlborough Region	1.20	Wellington Region	1.10
Nelson Region	1.06	West Coast Region	1.40

Table 22: Survey coverage by key demographics.

Age group	Gender	Ethnicity	Coverage	Age group	Gender	Ethnicity	Coverage
15–19	Male	Maori	1.44	15–19	Male	Non-Maori	1.24
20–24	Male	Maori	1.33	20–24	Male	Non-Maori	1.01
25–34	Male	Maori	1.07	25–34	Male	Non-Maori	1.38
35–44	Male	Maori	1.09	35–44	Male	Non-Maori	0.91
45–54	Male	Maori	1.06	45–54	Male	Non-Maori	1.05
55–64	Male	Maori	1.26	55–64	Male	Non-Maori	1.12
65–74	Male	Maori	1.59	65–74	Male	Non-Maori	0.98
75+	Male	Maori	3.51	75+	Male	Non-Maori	1.26
15–19	Female	Maori	1.14	15–19	Female	Non-Maori	1.09
20–24	Female	Maori	1.29	20–24	Female	Non-Maori	1.01
25–34	Female	Maori	1.58	25–34	Female	Non-Maori	1.18
35–44	Female	Maori	1.08	35–44	Female	Non-Maori	1.07
45–54	Female	Maori	1.01	45–54	Female	Non-Maori	1.22
55–64	Female	Maori	1.81	55–64	Female	Non-Maori	1.12
65–74	Female	Maori	1.35	65–74	Female	Non-Maori	1.15
75+	Female	Maori	2.04	75+	Female	Non-Maori	1.27

7. FISHING ACTIVITY

7.1 Fishing Trips By Week

The estimated number of fishing trips in each week, weighted to population estimates is shown in Figure 7. A 'trip' was self-defined by the fisher during the interview and is limited here to trips where at least one marine species was harvested.

The weeks shown are ISO-8601 weeks (Monday to Sunday). The first week of the survey was week 39 in 2011 and was a part week with only trips conducted on the 1st and 2nd of October counted. This is because the fishing year started on 1 October. The last week of the survey was week 39 of 2012 which ended on 30 September.

In the key, the numbers indicate the number of fishing trips of each avidity, weighted to population estimates. Not included are self professed non-fishers (A avidity).

In total, New Zealand fishers went on an estimated 2 294 839 trips (where something was caught) during the 2011–12 fishing year. The highest number of trips conducted in any one week was 147 537, which occurred in ISO week 1 (January 2 to 8 in 2012) and the lowest number of trips in a week was 5522 in ISO week 32 (August 6 to 12 in 2012). This is nearly a 27 fold difference in the number of trips between the busiest and quietest week. Fishing intensity would be expected to depend on many factors including the season, public holidays, the weather, the M.V. *Rena* shipwreck (and the consequent fisheries closure near Tauranga), and the 2012 bio toxin closure in the Bay of Plenty.

Note that the frequency of fishing trips is generally in line with the fisher's stated avidity (B low, C medium, D high). An exception is in the winter where C and B avidity fishing levels appear similar.

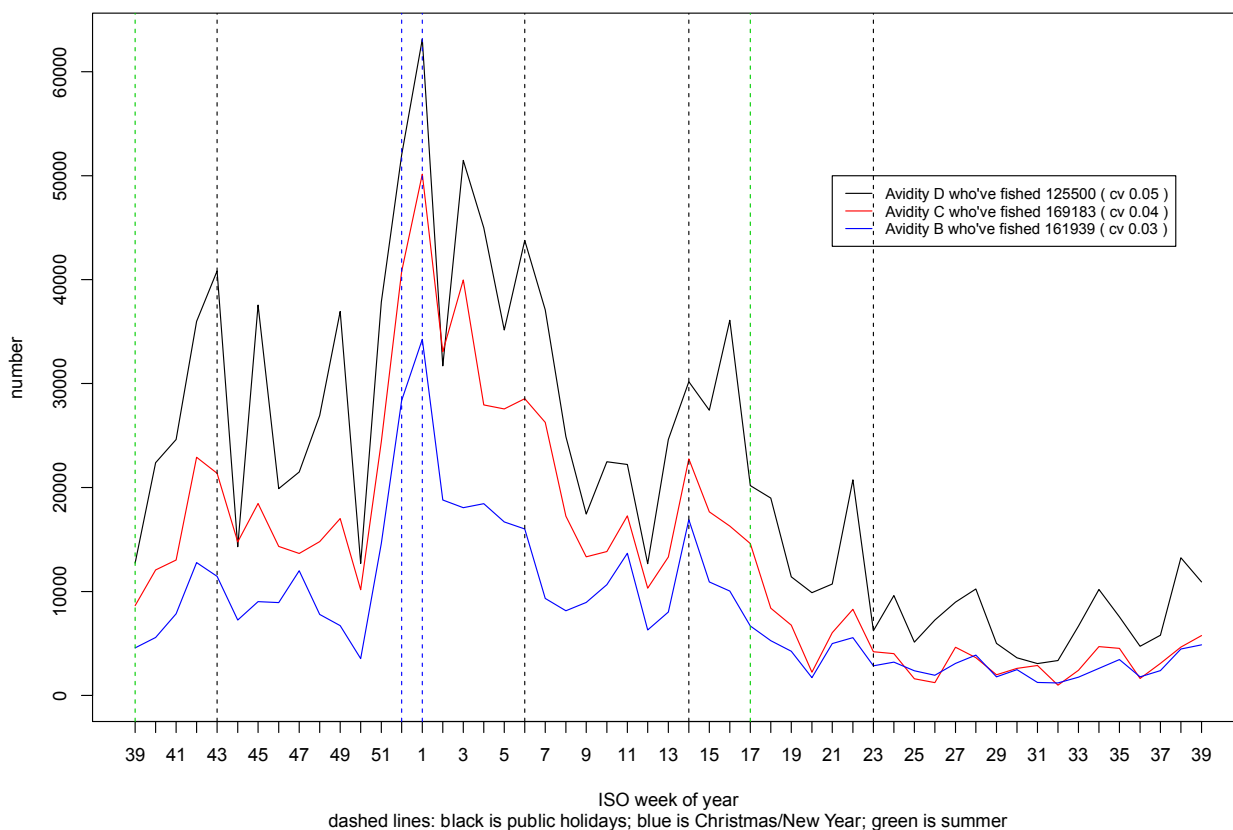


Figure 7: Estimated number of fishing trips by week (excluding customary, commercial, catch and release).

7.2 Fishing Trips By Method And Platform

Where trips are viewed according to method and platform, it is evident that the most frequent method of fishing was by rod or line from a trailer boat. About 1 044 792 trips (42.6% of the total) were conducted in this way (Table 23).

Fishing with a rod or line from land was also frequent with 21% of trips conducted in this way. The range of trips conducted by the various combinations of method versus platform show how diverse fishing effort is.

Table 23: Number of fishing trips by method and platform.

		Method								
Platform		Rod/line	Longline/ Kontiki	Net	Pot	Dredge	Hand gather from shore	Hand gather by diving	Spear-fishing	Other
Trailer motor boat		1 044 792	33 529	13 554	25074	20 991	6 646	93 909	10 759	913
	CV	0.06	0.23	0.23	0.22	0.26	0.21	0.33	0.29	0.53
	%*	55.6	25.0	22.9	77.6	79.9	6.2	53.2	38.2	17.4
Larger boat/launch		183 028	2 576	123	1 253	4 104	455	9 453	975	464
	CV	0.08	0.34	1.01	0.43	0.30	0.60	0.24	0.38	0.82
	%	9.7	1.9	0.2	3.9	15.6	0.4	5.4	3.5	8.8
Trailer yacht		5 000	0	0	0	0	0	113	56	0
	CV	0.26	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
	%	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0
Larger yacht/keeler		25 938	1 637	1 316	56	1 002	0	2 873	291	391
	CV	0.19	0.41	1.01	1.01	0.82	0.00	0.40	0.59	0.75
	%	1.4	1.2	2.2	0.2	3.8	0.0	1.6	1.0	7.5
Kayak/rowboat		89 322	9 478	6 697	1 506	183	1 838	3 167	467	237
	CV	0.13	0.46	0.34	0.72	1.01	0.53	0.33	0.51	0.66
	%	4.8	7.1	11.3	4.7	0.7	1.7	1.8	1.7	4.5
Off land		514 177	85 699	36 904	4 356	0	97 998	66 300	15 501	2 560
	CV	0.05	0.18	0.19	0.34	0.00	0.12	0.10	0.31	0.24
	%	27.4	64.0	62.4	13.5	0.0	91.6	37.6	55.1	48.8
Other		16 931	985	564	80	0	67	553	108	684
	CV	0.16	0.54	0.40	1.02	0.00	1.02	0.54	1.00	0.36
	%	0.9	0.7	1.0	0.2	0.0	0.1	0.3	0.4	13.0

*Column percent

7.3 Fishing Trips By Month And FMA

FMAs (Fishery Management Areas) are a set of areas defined for fisheries management purposes that are common across marine species. Note that FMAs 4 (Chatham Islands and surrounding waters) and 6 (Sub-Antarctic Islands) were not included in the survey and are therefore not included in the tables. FMA 4 (Chatham Islands) was not included because of difficult logistics and high costs and because it has been surveyed relatively recently (see Davey et al. 2011)). As FMA 6 (waters of the Sub-Antarctic Islands) is entirely offshore it is assumed to be generally outside the range of recreational fishing activity. The number of trips in a FMA indicates how popular it is for recreational fishing, which is influenced by factors such as proximity to population centres and attractiveness as a fishing area. See Section 2.6 for a description of FMA boundaries.

Table 24 shows that the majority of trips in New Zealand (57.9%) were conducted in FMA 1 (East Northland, the Hauraki Gulf, and the Bay of Plenty). The next most common area, FMA 9, accounts for only 9.7% of trips.

Viewed by month, the seasonality of the fishing is shown. Rather less fishing is conducted from May through to September in each FMA.

Table 24: Fishing trips by month and FMA.

Month		FMA						
		1	2	3	5	7	8	9
Oct11		141 211	27 540	14 258	4 512	27 218	17 244	27 868
	CV	0.08	0.12	0.16	0.22	0.14	0.15	0.15
	%	10.6	12.4	10.3	16.2	12.5	11.2	13.6
Nov11		118 849	22 082	12 445	2 776	16 543	8 956	16 634
	CV	0.06	0.16	0.15	0.46	0.19	0.18	0.15
	%	8.9	9.9	9.0	10.0	7.6	5.8	8.1
Dec11		143 864	38 853	26 825	5 279	33 747	31 097	31 709
	CV	0.11	0.10	0.13	0.33	0.15	0.12	0.19
	%	10.8	17.5	19.3	19.0	15.5	20.1	15.5
Jan12		277 686	54 293	26 363	3 553	42 296	25 654	31 630
	CV	0.07	0.12	0.12	0.33	0.12	0.15	0.15
	%	20.9	24.4	19.0	12.8	19.4	16.6	15.4
Feb12		170 451	20 250	12 860	2 747	31 661	21 769	26 773
	CV	0.07	0.15	0.18	0.27	0.17	0.12	0.14
	%	12.8	9.1	9.3	9.9	14.5	14.1	13.1
Mar12		115 435	13 149	10 733	2 438	17 427	15 525	17 400
	CV	0.08	0.14	0.20	0.31	0.19	0.17	0.19
	%	8.7	5.9	7.7	8.8	8.0	10.0	8.5
Apr12		141 877	18 147	15 691	3 573	22 973	15 594	21 710
	CV	0.08	0.13	0.18	0.29	0.14	0.13	0.20
	%	10.7	8.2	11.3	12.9	10.5	10.1	10.6
May12		66 842	7 378	3 596	514	6 668	3 886	7 063
	CV	0.09	0.28	0.39	0.50	0.25	0.26	0.20
	%	5.0	3.3	2.6	1.8	3.1	2.5	3.4
Jun12		55 192	4 056	4 356	473	4 668	1 997	3 609
	CV	0.09	0.25	0.27	0.73	0.33	0.28	0.26
	%	4.2	1.8	3.1	1.7	2.1	1.3	1.8
Jul12		31 050	4 817	4 130	826	6 076	3 497	6 577
	CV	0.11	0.37	0.32	0.45	0.25	0.25	0.56
	%	2.3	2.2	3.0	3.0	2.8	2.3	3.2
Aug12		29 425	5 570	1 903	449	4 775	4 439	5 834
	CV	0.10	0.18	0.28	0.59	0.23	0.28	0.26
	%	2.2	2.5	1.4	1.6	2.2	2.9	2.8
Sep12		36 094	6 010	5 745	647	4 333	4 876	8 299
	CV	0.09	0.17	0.26	0.33	0.26	0.21	0.24
	%	2.7	2.7	4.1	2.3	2.0	3.2	4.0

7.4 Fishing Trips By Method And FMA

Analysing numbers of trips by method and FMA shows that rod and line is by far the most common method in each FMA with usage ranging from 80.7% in FMA 1 to 65.6% in FMA 2.

In Table 25, variations in method usage can be seen between FMAs, e.g. hand gathering or floundering from the shore was more prevalent in FMA 3, FMA 5, and FMA 9. Hand gathering by diving was most prevalent in FMA 2 and FMA 5.

Table 25: Fishing trips by method and FMA.

Method	FMA						
	1	2	3	5	7	8	9
Rod/line	1 135 009	157 775	98 008	20 630	185 260	119 382	160 023
CV	0.05	0.11	0.10	0.20	0.11	0.11	0.12
%	80.7	65.6	66.2	67.8	77.7	73.4	73.4
Longline/kontiki	87 185	9 726	1 790	50	5 176	16 575	13 158
CV	0.19	0.24	0.45	1.01	0.35	0.20	0.47
%	6.2	4.0	1.2	0.2	2.2	10.2	6.0
Net	19 442	7 905	8 487	1 393	5 439	5 574	10 695
CV	0.22	0.26	0.58	0.37	0.30	0.35	0.43
%	1.4	3.3	5.7	4.6	2.3	3.4	4.9
Pot	7 993	13 811	5 489	194	1 892	1 015	1 875
CV	0.60	0.26	0.32	0.78	0.47	0.48	0.90
%	0.6	5.7	3.7	0.6	0.8	0.6	0.9
Dredge	9 497	54	0	481	13 045	46	3 157
CV	0.51	1.01	0.00	0.49	0.24	1.01	0.39
%	0.7	0.0	0.0	1.6	5.5	0.0	1.4
Hand gather from shore	37 649	9 658	16 642	3 433	6 623	10 608	22 277
CV	0.15	0.22	0.37	0.28	0.23	0.20	0.32
%	2.7	4.0	11.2	11.3	2.8	6.5	10.2
Hand gather by diving	92 659	36 332	14 130	4 016	16 686	8 296	4 118
CV	0.36	0.13	0.21	0.24	0.31	0.24	0.34
%	6.6	15.1	9.5	13.2	7.0	5.1	1.9
Spearfishing	13 600	4 562	2 736	97	3 928	837	2 398
CV	0.33	0.28	0.54	1.02	0.61	0.59	0.94
%	1.0	1.9	1.8	0.3	1.6	0.5	1.1
Other	2 627	679	812	123	444	282	167
CV	0.31	0.34	0.47	1.03	0.75	0.53	1.02
%	0.2	0.3	0.5	0.4	0.2	0.2	0.1

7.5 Fishing Trips By Platform And FMA

When trips are analysed by platform and FMA, further differences between the areas are evident (Table 26). Fishing from trailer boats was more frequent in FMA 1 and FMA 7. Conversely fishing from land was more common in the other FMAs.

Table 26: Fishing trips by platform and FMA.

Platform		FMA						
		1	2	3	5	7	8	9
Trailer motor boat		759 789	82 857	46 884	7 222	122 099	61 563	73 146
	CV	0.09	0.11	0.15	0.21	0.15	0.14	0.17
	%	57.0	37.2	33.7	26.0	55.9	39.8	35.6
Larger boat/launch		136 375	5 892	5 580	4 146	22 403	4 132	11 821
	CV	0.10	0.21	0.21	0.28	0.22	0.30	0.22
	%	10.2	2.6	4.0	14.9	10.3	2.7	5.8
Trailer yacht		4 112	0	47	121	747	0	85
	CV	0.30	0.00	1.01	1.03	0.54	0.00	1.01
	%	0.3	0.0	0.0	0.4	0.3	0.0	0.0
Larger yacht/keeler		24 335	129	1 316	0	4 633	483	54
	CV	0.20	0.74	1.01	0.00	0.40	0.76	1.00
	%	1.8	0.1	0.9	0.0	2.1	0.3	0.0
Kayak/rowboat		79 511	5 015	3 285	1 079	6 867	8 403	3 688
	CV	0.15	0.34	0.44	0.72	0.21	0.33	0.30
	%	6.0	2.3	2.4	3.9	3.1	5.4	1.8
Off land		313 947	127 410	81 190	15 027	60 107	79 786	115 733
	CV	0.07	0.11	0.14	0.27	0.12	0.13	0.18
	%	23.6	57.3	58.3	54.1	27.5	51.6	56.3
Other		13 962	1 139	1 003	191	1 571	367	941
	CV	0.18	0.35	0.58	0.80	0.60	0.60	0.49
	%	1.0	0.5	0.7	0.7	0.7	0.2	0.5

7.6 Fishers By Area

The estimated number of persons who fished (at least once) in each of the FMAs is shown in Table 27. More fishers visited FMA 1 than any other FMA, by a large margin.

Table 27: Numbers of fishers visiting each FMA.

	FMA						
	1	2	3	5	7	8	9
Estimated number of fishers	268 558	61 832	42 675	10 427	47 514	42 336	57 207
CV	0.03	0.06	0.07	0.10	0.07	0.07	0.07

8. HARVEST ESTIMATES

8.1 Total Recreational Marine Harvest

The total recreational harvest estimate of all marine species in New Zealand for 2011–12, according to the methods of this survey, amounted to over 17 million by number. Of these, 8 711 916 were finfish and 8 329 264 were non-fish species (see Figure 8). For the purposes of this study, ‘finfish’ includes sharks, rays, eels and flatfish as well as true finfish. ‘Non-fish’ includes shellfish, cephalopods, crustaceans, and sea urchins (kina).

Only (3.2%) of the total recreational marine harvest was taken from charter operations. This figure is somewhat higher for finfish with 5.4% attributable to charter fishing and far lower for non-fish (0.7%).

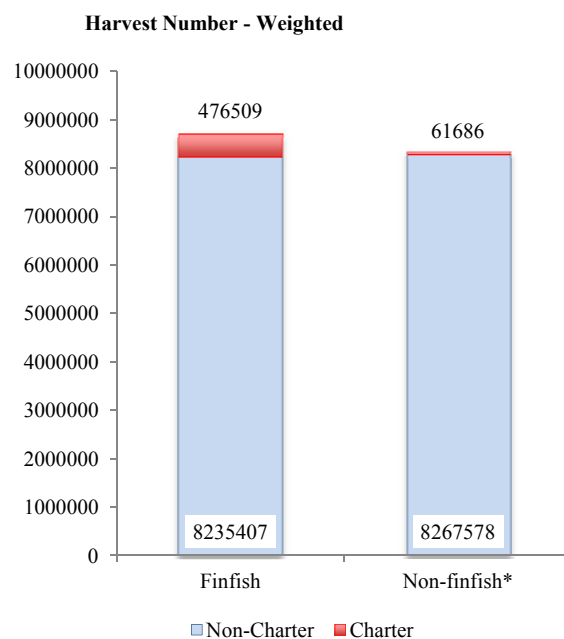


Figure 8: Total recreational marine harvest 2011–12.

8.2 Finfish Total Harvest

Table 28 lists harvest estimates for finfish species in New Zealand for the 2011–12 fishing year. Mean fish weights were not available for all species and in this case, estimates of the numbers only of fish harvested are given.

The three most commonly harvested species accounted for nearly 38% of all finfish taken, by number. The most frequently harvested species was snapper with 4 552 908 or 4 812 tonnes being taken. This amounted to 26.7% of the finfish harvest. The second most commonly harvested finfish was kahawai of which 1 170 324 or 1784 tonnes were harvested. The harvest of blue cod, the most common species caught in the South Island, was 682 550 or 333 tonnes.

Table 28: New Zealand finfish total harvest by species.

Species	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
Snapper	2 212	9 275	4 552 908	0.07	1.06	4 812.15	0.07
Kahawai	1 670	4 351	1 170 324	0.05	1.53	1 784.83	0.05
Cod Blue	612	1 583	682 550	0.10	0.49	333.05	0.10
Gurnard Red	703	1 586	430 531	0.10	0.47	202.57	0.10
Tarakihi	417	907	361 256	0.14	0.66	238.78	0.14
Trevally	468	827	173 762	0.10	1.20	209.24	0.09
Sea perch	141	294	160 581	0.20	0.49	78.44	0.20
Flounder/Sole/other flatfish	138	319	143 619	0.21	0.41	58.92	0.21
Mullet Yellow Eyed/Herring	186	305	125 972	0.15	0.20	25.17	0.15
Mackerel Jack Mackerel	136	230	121 116	0.20	0.35	42.43	0.21
Butterfish	69	178	69 831	0.34	1.10	76.90	0.33
Kingfish	284	435	64 700	0.11	10.23	662.12	0.11
Rig Shark	159	241	47 718	0.14	1.09	52.05	0.14
Tuna Skipjack	68	103	41 182	0.23	2.24	92.08	0.23
Barracouta	133	197	39 652	0.18	2.14	85.05	0.18
Mullet Grey	49	74	38 127	0.35	0.92	35.17	0.35
Hapuku/Bass	117	167	37 502	0.18	5.85	219.54	0.18
Cod Red	129	184	33 963	0.13	1.15	39.00	0.13
Mackerel Blue/Slimy/English	42	56	32 976	0.25	1.04	34.25	0.25
John Dory	171	227	32 303	0.12	1.25	40.30	0.12
Blue Maomao	62	84	31 488	0.27	-	-	-
School shark	95	160	30 555	0.17	-	-	-
Blue Moki	50	118	27 926	0.28	2.03	56.58	0.28
Pilchard	24	33	23 231	0.47	-	-	-
Garfish	17	25	23 123	0.53	-	-	-
Spiny Dogfish Shark	97	119	22 200	0.19	1.02	22.60	0.19
Tuna Albacore	51	77	21 898	0.21	4.21	92.09	0.21
Eels (Not elsewhere included)	29	49	19 621	0.36	-	-	-
Porae	50	71	15 004	0.24	1.24	18.61	0.24
Bream/Brim*	13	17	14 070	0.48	-	-	-
Stingray	46	59	11 053	0.40	-	-	-
Spotty/Paketi	26	32	9 055	0.39	-	-	-
Bluenose	20	32	7 784	0.33	4.47	34.82	0.33
Trumpeter	33	44	6 548	0.26	1.40	9.20	0.26
Elephant Fish	24	47	6 198	0.34	-	-	-
Rock Cod	25	28	5 252	0.27	-	-	-
Maori Chief	12	12	4 574	0.41	-	-	-
Wrasse	20	27	4 511	0.28	-	-	-
Parore	8	13	4 328	0.50	-	-	-
Parrot Fish/Wrasse*	19	24	4 276	0.47	-	-	-
Koheru	7	13	3 834	0.58	-	-	-
Sand Shark	10	18	3 719	0.54	-	-	-
Moki (Not elsewhere included)	9	10	2 976	0.49	-	-	-
Leatherjacket	14	19	2 936	0.42	-	-	-
Gemfish	12	17	2 889	0.39	-	-	-
Salmon	15	25	2 824	0.37	-	-	-
Kelpie	11	14	2 742	0.50	-	-	-
Trout/Sea Trout	8	15	2	0.49	-	-	-
Pigfish	10	13	2 247	0.40	-	-	-
Perch	9	13	2 247	0.46	-	-	-
Warehou	2	8	1 968	0.80	-	-	-
Red Moki	14	15	1 853	0.29	-	-	-
Hammerhead Shark	10	12	1 429	0.34	-	-	-
Ling	7	9	1 333	0.48	-	-	-
Marlin	3	5	985	0.65	-	-	-
Bronze Whaler Shark	5	5	570	0.52	-	-	-
Stargazer/Monkfish	4	5	534	0.65	-	-	-
Mako Shark	5	6	529	0.51	-	-	-
Conger Eel	7	7	488	0.41	-	-	-
Carpet Shark	3	5	452	0.67	-	-	-
Other Finfish	80	100	19 374	0.16	-	-	-

* Fisher's description

8.3 Non-Finfish Total Harvest

Table 29 gives a breakdown of the non-fish species harvest estimates. According to this study's estimates, kina were the most commonly harvested non fin-fish species with an estimated 2 279 476 kina harvested in the 2011–12 fishing year. Scallops were the next most frequent species recorded with an estimated harvest of 1 669 681 or 184 tonnes.

Harvest figures for the very high value rock lobster were 226 271 or 186 tonnes.

Table 29: New Zealand total non-fish harvest by species.

	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
Kina *	119	246	2 279 476	0.76	-	-	-
Scallops	209	479	1 669 681	0.15	0.11	184.79	0.15
Mussel	152	263	983 347	0.19	-	-	-
Tuatua	58	119	869 751	0.26	-	-	-
Cockles	66	105	734 742	0.40	-	-	-
Pipi	90	133	622 288	0.20	-	-	-
Paua	286	644	525 634	0.11	0.28	148.82	0.11
Oyster	50	69	303 190	0.34	-	-	-
Crayfish/Lobster Spiny/Red	252	735	226 271	0.11	0.82	185.66	0.11
Puupuu/Cats Eye/Cooks Turban	11	16	38 304	0.46	-	-	-
Crab	25	31	16 749	0.37	-	-	-
Paua Yellow Foot	16	20	14 076	0.31	-	-	-
Paddle Crab	9	11	9 354	0.43	-	-	-
Squid	15	18	4 682	0.53	-	-	-
Crayfish/Lobster Packhorse/Green	15	19	4 080	0.33	-	-	-
Octopus	15	17	1 521	0.29	-	-	-
Crayfish/Lobster Spanish	2	2	196	0.71	-	-	-
Other Marine Species	20	24	25 921	0.39	-	-	-

** Caution: This estimate has a particularly high CV because, by chance, one very avid kina gatherer happened to have a very high 'weighting' due to multiple factors: a very large increase in size of his meshblock upon enumeration, a high number of fishers in the household, and an ethnicity weighting. Removal of this one respondent's data would reduce this estimate by more than half. See Section 10.9 for further comment on weighting extremes.*

8.4 Finfish Species Harvest By FMA

Table 30 shows the finfish species harvest by FMA (Fisheries Management Area). The table demonstrates that most species were only caught in certain areas. Snapper, for instance, was predominantly harvested in FMA 1, rather less in other areas and, in this study, none at all were harvested from FMA 5.

Table 30: Finfish species harvest by FMA.

	FMA						
	1	2	3	5	7	8	9
Barracouta	11 283	4 885	6 076	666	11 930	3 142	1 671
Blue Maomao	20 132	10 280	0	0	392	268	415
Blue Moki	885	13 734	5 739	243	6 955	371	0
Bluenose	4 887	444	415	42	452	137	1 406
Butterfish	24 724	13 892	13 637	188	14 625	2 221	544
Cod Blue	15 485	57 271	248 687	84 129	180 558	93 218	3 202
Cod Red	1 847	13 748	7 172	1 021	2 184	6 889	1 102
Flounder/Sole/other flatfish	30 105	4 520	34 773	18 702	12 259	8 365	34 894
Garfish	20 617	0	58	0	1 515	532	401
Gemfish	2 539	0	0	0	0	137	213
Hapuku/Bass	11 783	10 179	6 383	138	2 163	4 376	2 480
Gurnard Red	128 802	66 661	4 605	0	23 653	93 656	113 154
John Dory	28 020	247	88	0	1 351	1 753	843
Kahawai	637 824	145 698	9 614	0	95 101	100 779	181 309
Koheru	3 834	0	0	0	0	0	0
Kingfish	52 056	4 025	289	0	2 079	1 202	5 049
Mackerel Blue/Slimy/English	18 438	3 346	0	0	4 677	437	6 080
Mackerel Jack Mackerel	84 916	16 160	50	0	2 270	2 974	14 747
Mullet Yellow Eyed/Herring	57 504	12 053	8 326	0	15 792	11 762	20 535
Mullet Grey	17 806	890	5 252	0	191	2 172	11 815
Pilchard	12 827	1 022	9 144	0	101	0	137
Porae	12 371	695	0	0	104	51	1 783
Rig Shark	4 976	7 172	7 280	862	19 126	5 499	2 804
School shark	5 483	2 739	5 381	443	10 311	1 892	4 304
Sea perch	1 464	8 165	113 955	4 517	28 781	3 699	0
Snapper	3 772 874	55 781	619	0	111 353	182 236	430 045
Spiny Dogfish Shark	3 112	2 099	4 130	466	6 035	4 524	1 835
Stingray	2 833	202	4 267	177	443	1 609	1 522
Tarakihi	160 414	110 920	4 208	141	48 107	31 340	6 126
Trevally	139 473	10 308	859	0	1 840	4 883	16 400
Trumpeter	898	787	2 870	1 505	215	273	0
Tuna Skipjack	33 395	1 616	0	0	0	1 497	4 673
Tuna Albacore	3 629	2 329	0	0	3 422	6 435	6 082
Rock Cod	3 505	347	492	0	0	178	730
Parrot Fish/Wrasse	1 673	2 147	407	0	0	49	0
Eels (not elsewhere included)	6 848	192	1 730	211	111	5 030	5 500
Leatherjacket	1 599	564	506	0	170	97	0
Red Moki	873	405	225	0	350	0	0
Wrasse	1 203	1 137	1 347	117	658	49	0
Spotty/Paketi	1 308	1 931	0	0	5 310	0	506
Kelpie	125	787	0	1 452	107	0	271
Elephant Fish	0	183	4 853	202	960	0	0
Perch	0	0	2 052	0	138	0	57
Salmon	0	0	2 824	0	0	0	0
Pigfish	2 247	0	0	0	0	0	0
Parore	4 328	0	0	0	0	0	0
Bronze Whaler Shark	171	54	0	0	0	0	346
Hammerhead Shark	1 272	0	0	0	0	0	157
Moki (not elsewhere included)	130	1 866	388	0	592	0	0
Maori Chief	348	87	0	0	4 070	0	68
Sand Shark	1 890	1 256	0	0	311	261	0
Carpet Shark	0	0	127	0	325	0	0
Ling	89	1 026	0	0	0	0	218
Marlin	985	0	0	0	0	0	0
Mako Shark	529	0	0	0	0	0	0
Stargazer/Monkfish	0	0	0	0	481	0	53
Conger Eel	181	107	0	0	73	127	0
Warehou	0	1 485	483	0	0	0	0
Trout/Sea Trout	0	0	2 583	72	65	0	0
Bream/Brim	85	314	12 259	0	1 413	0	0
Other Finfish	10 945	3 518	1 657	531	1 907	704	112

8.5 Non-Finfish Species Harvest By FMA

The distribution of non-fish species harvest by FMA also shows that the harvest of particular species varies considerably by area (Table 31). For example, 33.9% of rock lobster and 54.4% of paua were harvested from the lower half of the North Island (FMA 2 and FMA 8) while this area of New Zealand accounts for less than 15% of the total coastline.

Table 31: Non-fish species harvest by FMA.

	FMA						
	1	2	3	5	7	8	9
Cockles	299 765	8 789	300 158	369	78 751	19 490	27 418
Crayfish/Lobster Spanish	96	100	0	0	0	0	0
Crayfish/Lobster Spiny/Red	83 337	63 856	33 854	1 505	23 087	12 782	7 849
Crayfish/Lobster Packhorse/Green	1 191	1 358	326	729	250	0	226
Kina	2 018 810	107 382	12 276	9 709	12 376	60 505	58 418
Mussel	575 602	56 223	72 925	8 275	78 101	38 511	153 711
Oyster	212 862	204	0	16 022	30 449	0	43 654
Paua	23 441	200 088	109 849	35 590	50 534	86 095	20 039
Paua Yellow Foot	408	5 185	5 240	599	1 521	731	393
Pipi	361 303	167 155	5 295	0	10 057	32 632	45 847
Puupuu/Cats Eye/Cooks Turban	3 125	21 360	3 014	0	0	0	10 805
Scallops	755 525	36 487	0	1 376	806 943	2 306	67 044
Squid	4 236	159	288	0	0	0	0
Tuatua	565 207	14 222	2 102	0	14 503	42 608	231 109
Octopus	518	599	138	0	191	74	0
Crab	2 720	1 891	1 301	113	0	10 578	146
Paddle Crab	2 003	827	1 768	2 532	0	2 225	0
Other Marine	3 658	10 452	7 650	1 102	151	864	2 043

8.6 Finfish Harvest By Species And Method

Table 32 of finfish species harvest by method shows the predominance of rod and line for catching most finfish species. There were some notable exceptions such as: moki/blue moki and butterfish which were mainly caught by spearfishing, mullet which was mainly caught by net, and flounder and flatfish which were caught predominantly by net but which were also 'hand gathered from shore' (in fact by hand-held spear which is not classified as 'spearfishing').

Table 32: Finfish harvest by species and method.

	Rod/line	Longline/ Kontiki	Net	Pot	Dredge	Hand gather from shore	Hand gather by diving	Spear- fishing	Other
Barracouta	38 807	0	692	0	0	0	0	0	154
Blue Maomao	29 588	643	328	0	0	0	0	775	154
Blue Moki	5 567	0	9 798	0	0	0	0	12 561	0
Bluenose	7 573	210	0	0	0	0	0	0	0
Butterfish	10 844	99	4 171	0	0	0	0	54 717	0
Cod Blue	678 462	2 346	585	205	0	0	0	952	0
Cod Red	31 182	1 164	1 616	0	0	0	0	0	0
Flounder/Sole/other flatfish	711	198	90 193	0	0	51 826	0	691	0
Garfish	4 573	0	18 550	0	0	0	0	0	0
Gemfish	2 854	35	0	0	0	0	0	0	0
Hapuku/Bass	37 444	59	0	0	0	0	0	0	0
Gurnard Red	386 111	43 019	1 401	0	0	0	0	0	0
John Dory	30 691	69	175	0	0	0	0	1 214	154
Kahawai	1 096 804	42 655	28 758	0	0	0	0	1 904	203
Koheru	3 139	0	153	0	0	0	0	542	0
Kingfish	60 475	1 708	221	0	0	0	0	2 297	0
Mackerel Blue/Slimy/English	29 899	916	2 161	0	0	0	0	0	0
Mackerel Jack Mackerel	119 948	1 117	51	0	0	0	0	0	0
Mullet Yellow Eyed/Herring	76 696	773	48 120	0	0	0	0	336	48
Mullet Grey	8 047	0	29 250	0	0	0	0	830	0
Pilchard	21 914	0	1 003	0	0	0	0	0	314
Porae	7 794	725	4 201	0	0	0	0	2 284	0
Rig Shark	35 888	7 937	3 429	0	0	0	0	415	48
School shark	25 242	3 533	1 780	0	0	0	0	0	0
Sea perch	158 311	1 552	0	717	0	0	0	0	0
Snapper	4 268 690	276 364	4 922	54	0	0	0	2 648	230
Spiny Dogfish Shark	15 572	5 425	1 065	0	0	0	0	138	0
Stingray	5 198	1 256	4 599	0	0	0	0	0	0
Tarakihi	356 425	2 199	51	0	0	0	0	2 580	0
Trevally	166 219	2 505	4 920	0	0	0	0	118	0
Trumpeter	6 548	0	0	0	0	0	0	0	0
Tuna Skipjack	41 042	140	0	0	0	0	0	0	0
Tuna Albacore	21 757	140	0	0	0	0	0	0	0
Rock Cod	5 028	122	102	0	0	0	0	0	0
Parrot Fish	3 501	24	0	0	0	0	0	598	154
Eel (not elsewhere included)	13 898	211	1 727	0	0	939	0	1 535	1 311
Leatherjacket	2 784	0	0	0	0	0	0	152	0
Red Moki	499	0	377	0	0	0	0	977	0
Wrasse	4 470	0	0	0	0	0	0	41	0
Spotty/Paketi	8 874	0	118	0	0	62	0	0	0
Kelpie	2 523	0	53	0	0	0	0	166	0
Elephant Fish	4 183	1 990	25	0	0	0	0	0	0
Perch	2 247	0	0	0	0	0	0	0	0
Salmon	2 824	0	0	0	0	0	0	0	0
Pigfish	1 868	0	0	0	0	0	0	379	0
Parore	3 792	0	536	0	0	0	0	0	0
Bronze Whaler Shark	517	54	0	0	0	0	0	0	0
Hammerhead Shark	1 264	165	0	0	0	0	0	0	0
Moki (not elsewhere included)	0	0	1 317	0	0	0	0	1 659	0
Maori Chief	4 322	252	0	0	0	0	0	0	0
Sand Shark	1 752	1808	159	0	0	0	0	0	0
Carpet Shark	201	252	0	0	0	0	0	0	0
Ling	1 333	0	0	0	0	0	0	0	0
Marlin	882	103	0	0	0	0	0	0	0
Mako Shark	529	0	0	0	0	0	0	0	0
Stargazer/Monkfish	53	0	481	0	0	0	0	0	0
Conger Eel	427	61	0	0	0	0	0	0	0
Warehou	483	0	1 485	0	0	0	0	0	0
Trout/Sea Trout	2 720	0	0	0	0	0	0	0	0
Bream/Brim	14 070	0	0	0	0	0	0	0	0
Other Finfish	16 604	1 630	727	72	0	0	0	341	0

8.7 Non-Finfish Harvest By Species And Method

Table 33, which shows the harvest of non-fish species by method, also shows the dominance of certain methods, mainly involving hand gathering. Some species were most likely caught unintentionally while targeting other species, such as crabs or octopus hooked when fishing by longline/kontiki. Others were caught by differing target methods. 68.5% of rock lobster were taken by hand gathering by diving and 29.5% by lobster pots. 45.8% of scallops were taken by dredge and 53.9% by hand gathering by diving.

Table 33: Non-fish harvest by species and method.

	Rod/ line	Longline/K ontiki	Net	Pot	Dredge	Hand gather from shore	Hand gather by diving	Spear- fishing	Other
Cockles	0	0	0	0	0	734 742	0	0	0
Crayfish/Lobster Spanish	0	0	0	0	0	0	196	0	0
Crayfish/Lobster Spiny/Red	0	0	0	66 684	0	4 467	154 986	0	135
Crayfish/Lobster Packhorse/Green	0	0	0	1 058	0	0	3 022	0	0
Kina	0	0	0	0	0	143 908	2 135 568	0	0
Mussel	0	0	0	0	3 199	506 552	470 881	0	2 714
Oyster	0	0	0	0	25 285	139 436	138 469	0	0
Paua	0	0	0	0	0	136 660	388 975	0	0
Paua Yellow Foot	0	0	0	0	0	5 126	8 950	0	0
Pipi	0	0	0	0	0	622 288	0	0	0
Puupuu/Cats Eye/Cooks Turban	0	0	0	0	0	33 269	5 035	0	0
Scallops	0	0	0	0	764 704	5 746	899 231	0	0
Squid	4 177	0	0	62	0	0	443	0	0
Tuatua	0	0	0	0	0	848 513	21 237	0	0
Octopus	1 073	24	0	257	0	80	87	0	0
Crab	1 545	146	3 978	1 638	0	8 721	0	0	722
Paddle Crab	816	2 645	4 711	873	0	310	0	0	0
Other Marine	606	582	0	0	0	24 263	253	217	0

8.8 Finfish Harvest By Species And Platform

The following table (Table 34) showing finfish species harvested by platform shows distinct variation between the species. For snapper, for instance, only 411 893 (9%) were harvested from land, compared with kahawai where 387 450 (33%) were taken from the land.

Table 34: Finfish harvest by species and platform.

	Trailer motor boat	Larger boat/launch	Trailer yacht	Larger yacht/keeler	Kayak/ Rowboat	Off land	Other
Barracouta	29 693	5 953	242	1 950	49	1 765	0
Blue Maomao	16 613	3 199	0	950	2 579	8 071	77
Blue Moki	15 873	886	0	0	990	9 838	340
Bluenose	2 869	4 915	0	0	0	0	0
Butterfish	27 636	270	0	225	558	40 496	646
Cod Blue	532 672	111 522	1 628	2 044	10 479	21 990	2 215
Cod Red	14 439	1 962	0	0	1 189	16 232	141
Flounder, Sole or other flatfish	30 581	130	0	3 685	9 761	98 551	911
Garfish	1 675	557	0	0	70	20 770	51
Gemfish	2 033	856	0	0	0	0	0
Hapuku/Bass	19 264	16 097	122	0	521	1 498	0
Gurnard Red	328 536	28 844	357	1 188	26 998	42 558	2 049
John Dory	24 408	3 367	0	149	1 775	2 605	0
Kahawai	636 902	71 074	975	9 682	56 799	387 450	7 442
Koheru	1 287	0	0	558	0	204	1 786
Kingfish	43 346	12 224	255	1 855	1 072	5 742	205
Mackerel Blue/Slimy/English	20 370	3 112	0	565	0	8 929	0
Mackerel Jack Mackerel	67 617	9 349	0	2 487	5 695	35 519	450
Mullet Yellow Eyed/Herring	28 666	385	0	2 150	6 753	87 266	752
Mullet Grey	20 864	0	0	0	461	16 801	0
Pilchard	3 001	0	0	0	0	14 087	6 143
Porae	5 016	1 648	0	448	1 464	6 429	0
Rig Shark	14 138	2 015	0	0	1 971	27 440	2 154
School shark	13 969	3 186	0	317	131	12 611	341
Sea perch	125 597	22 664	0	2 139	3 324	4 800	2 057
Snapper	3 376 018	472 445	4 072	41 796	211 729	411 893	34 954
Spiny Dogfish Shark	9 215	1 778	0	67	994	10 146	0
Stingray	2 598	311	0	4 263	304	3 577	0
Tarakihi	295 214	54 113	0	215	3 354	7 677	683
Trevally	112 422	17 787	63	672	12 094	28 289	2 437
Trumpeter	4 429	1 008	0	0	0	1 111	0
Tuna Skipjack	24 385	15 626	0	805	243	124	0
Tuna Albacore	21 235	349	313	0	0	0	0
Rock Cod	2 384	151	0	0	0	2 615	102
Parrot Fish	1 304	919	0	0	0	2 053	0
Eel (not elsewhere included)	1 096	807	0	0	0	17 719	0
Leatherjacket	599	227	0	170	159	1 781	0
Red Moki	1 150	0	0	74	0	501	128
Wrasse	2 136	203	0	0	270	1 902	0
Spotty/Paketi	1 097	0	568	0	421	6 969	0
Kelpie	0	271	0	0	107	2 364	0
Elephant Fish	1 360	0	0	0	84	4 712	43
Perch	1 000	985	0	0	205	57	0
Salmon	697	0	0	0	0	2 127	0
Pigfish	2 081	167	0	0	0	0	0
Parore	896	528	0	0	0	2 904	0
Bronze Whaler Shark	450	67	0	0	0	54	0
Hammerhead Shark	1 091	0	0	0	70	268	0
Moki (not elsewhere included)	784	74	56	0	1 436	626	0
Maori Chief	3 342	671	0	0	144	417	0
Sand Shark	1 206	0	0	70	509	1 934	0
Carpet Shark	127	252	0	0	0	73	0
Ling	829	343	0	0	0	161	0
Marlin	103	882	0	0	0	0	0
Mako Shark	318	211	0	0	0	0	0
Stargazer/Monkfish	316	53	0	0	101	64	0
Conger Eel	200	44	0	0	61	183	0
Warehou	483	0	0	0	0	1 485	0
Trout/Sea Trout	254	0	0	0	0	2 466	0
Bream/Brim	12 081	1 292	0	0	0	697	0
Other Finfish	12 376	1 674	0	552	158	4 614	0

8.9 Non-Finfish Harvest By Species And Platform

Looking at the non-fish species by platform (Table 35), it at first appears surprising that there is a similar number taken by trailer boat as off land. Part of this is a consequence of the sequence of the question stream in which respondents were first asked what platform they fished from (and then what they harvested). For example, cockles and tuatua were reported with platform 'trailer boat'. It would seem likely that even if the respondent used a trailer boat to reach a location, the harvest was still gathered from the land. This is apparent in the table of non-fish species harvested by method, where hand gathering from shore features heavily.

Table 35: Non-fish harvest by species and platform.

	Trailer motor boat	Larger boat/launch	Trailer yacht	Larger yacht/keeler	Kayak/ Rowboat	Off land	Other
Cockles	17 698	0	0	0	9 146	707 898	0
Crayfish/Lobster Spanish	196	0	0	0	0	0	0
Crayfish/Lobster Spiny/Red	157 705	13 092	0	5 257	6 306	43 693	218
Crayfish/Lobster Packhorse/Green	2 695	834	0	0	160	392	0
Kina	1 708 724	9 696	0	2 741	17 607	522 207	18502
Mussel	325 597	10 568	0	8 310	33 310	598 750	6 812
Oyster	114 996	7 668	0	0	9 183	171 343	0
Paua	106 756	3 793	0	304	6 748	406 125	1 908
Paua Yellow Foot	321	260	0	0	0	13 496	0
Pipi	34 250	3 522	0	0	21 276	563 240	0
Puupuu/Cats Eye/Cooks Turban	11 000	0	0	0	0	27 304	0
Scallops	1 230 812	263 968	2 025	67 801	18 449	86 626	0
Squid	1 042	554	0	0	62	657	2 366
Tuatua	38 865	0	0	0	0	830 885	0
Octopus	975	129	0	0	0	417	0
Crab	219	0	0	0	0	16 530	0
Paddle Crab	1 779	0	0	0	1 296	6 279	0
Other Marine	217	553	0	0	0	25 151	0

9. HARVEST ESTIMATES FOR SELECTED SPECIES

9.1 Snapper

The total estimated harvest for snapper for the 2011–12 fishing year was 4 552 908 fish, or 4812 tonnes (Table 36). The great majority of this was harvested in SNA 1 where 3 772 874 fish or 82.9% of the snapper were taken.

Figure 9 shows that snapper were almost exclusively caught by rod or line (93.8%). The next most common method was longline/kontiki with 6% of the snapper caught this way. Figure 10 shows that snapper were mainly caught from trailer boats (74.2%) followed by larger boats/launches (10.3%), off land (9%) and from kayak/rowboats (4.7%).

Table 37 shows the distributions of daily bag size (number of fishers with that bag size). If there were two trips conducted by a fisher in a day, the catch is added together. The fractional catch arising from a shared catch is rounded to the nearest integer (or the nearest even integer if the fractional part is 0.5) except for fractional catches of less than 1, which are included in the <1 category. Note that zero catches do not appear in these bag size tables.

Table 36: Snapper harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
SNA 1	1 729	7 425	3 772 874	0.08	1.06	3 980.99	0.08
SNA 2	94	201	55 781	0.25	1.03	57.29	0.25
SNA 3	2	2	619	0.82	1.02	0.63	0.82
SNA 7	135	378	111 353	0.17	0.80	89.00	0.17
SNA 8	455	1 249	612 281	0.14	1.12	684.24	0.15
TOTAL	2 415	9 255	4 552 908	0.07	1.06	4 812.15	0.07

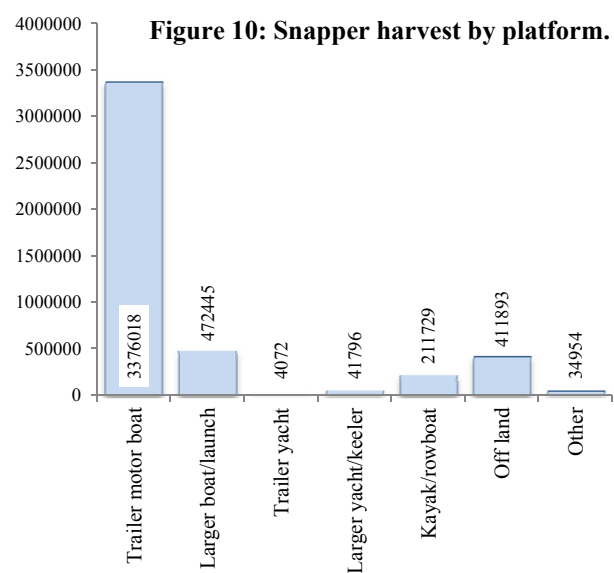
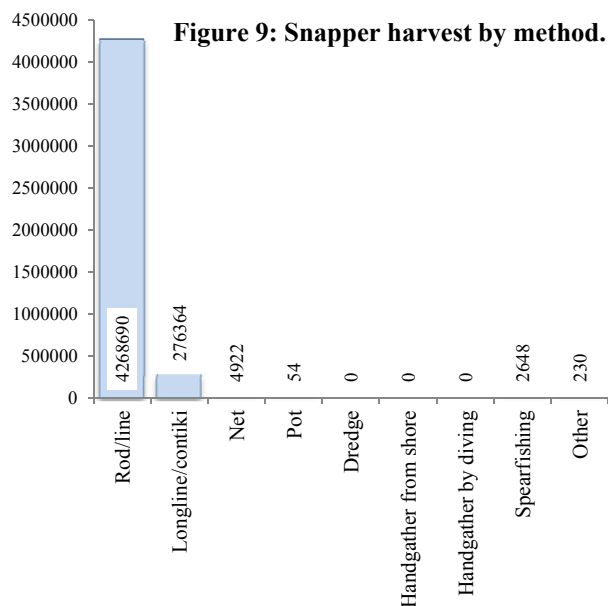


Table 37: Snapper bag size by Fishstock (row percent).

Fishstock	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11	12	13+
SNA 1	1.1	15.7	17.1	12.3	12.7	9.2	8.9	5.7	4.6	10.9	0.8	0.2	0.4	0.6
SNA 2	0.8	40.1	25.8	16.1	6.9	2.2	1.1	3.3	0.0	0.0	3.1	0.0	0.0	0.5
SNA 3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNA 7	2.1	29.8	28.7	12.6	10.2	5.6	3.3	2.1	0.7	1.2	3.2	0.0	0.4	0.0
SNA 8	1.5	20.3	20.5	10.2	8.9	8.7	7.9	3.7	4.2	4.5	9.1	0.1	0.1	0.4
TOTAL	1.1	17.4	18.2	12.1	12.0	8.9	8.4	5.2	4.3	9.5	2.0	0.2	0.3	0.5

9.2 Kahawai

The total estimated harvest for kahawai for the 2011–12 fishing year was 1 170 324 fish, or 1784 tonnes (Table 38). Kahawai were caught more evenly across New Zealand than snapper, with just over half caught in KAH 1, nearly a quarter in KAH 8 and the rest fairly evenly in KAH 2 and KAH 3.

Figure 11 shows that kahawai were mainly caught by rod or line (93.7%). Figure 12 shows that just over half of the kahawai were caught from trailer boats (54.4%) but a third were taken off land.

Bag sizes for kahawai (Table 39) were mainly of smaller size than snapper: 42% were 0–1 fish, 27.5% 1–2 fish and 12% 2–3 fish.

Table 38: Kahawai harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
KAH 1	965	2 419	637 824	0.07	1.50	957.71	0.07
KAH 2	257	561	145 698	0.12	1.57	228.37	0.12
KAH 3	163	382	104 715	0.18	1.40	146.57	0.18
KAH 8	424	950	282 088	0.11	1.60	452.19	0.11
TOTAL	1804	4312	1 170 324	0.05	1.53	1784.83	0.05

Figure 11: Kahawai harvest by method.

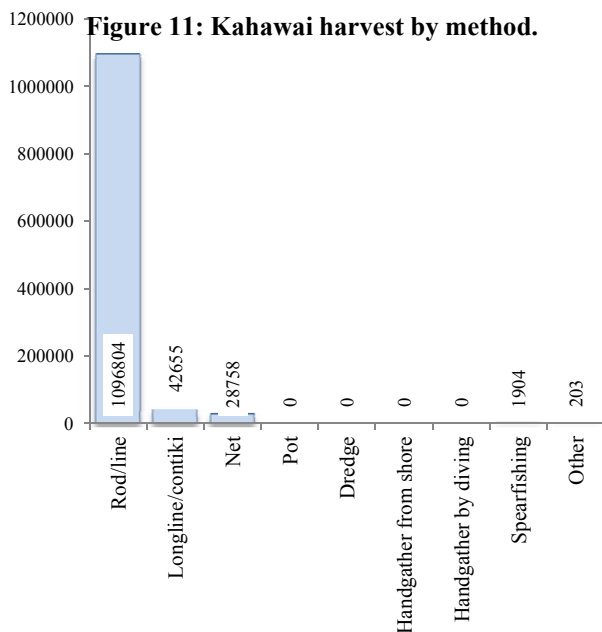


Figure 12: Kahawai harvest by platform.

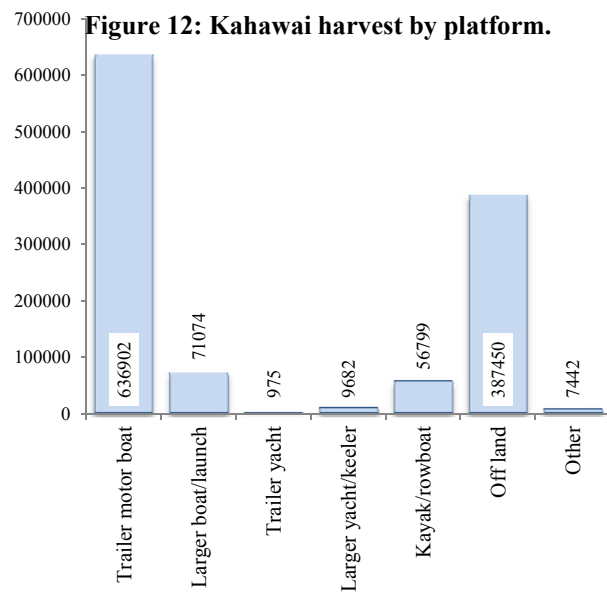


Table 39: Kahawai bag size by Fishstock (row percent).

Fishstock	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11	12	13+
KAH 1	2.0	40.6	28.6	12.3	7.5	2.9	2.6	0.8	0.6	0.2	0.8	0.1	0.3	0.6
KAH 2	2.2	37.1	28.3	11.1	7.6	4.0	4.0	1.4	0.7	1.4	0.6	0.3	0.1	1.2
KAH 3	0.1	44.6	23.2	11.5	9.7	5.3	1.9	0.4	0.9	0.4	0.0	1.1	0.4	0.7
KAH 8	2.7	38.0	25.4	13.2	7.9	4.4	3.5	1.5	0.9	0.2	0.8	0.3	0.6	0.7
TOTAL	2.0	40.0	27.4	12.3	7.8	3.6	2.9	1.0	0.7	0.4	0.7	0.2	0.3	0.7

9.3 Blue Cod

The total estimated harvest for blue cod for the 2011–12 fishing year was 682 550 fish, or 333 tonnes (Table 40). Blue cod were caught in most waters but over 60% of the harvest was from the Marlborough Sounds area and on the East coast of the South Island (36% in BCO 3 and 26% in BCO 7).

Most blue cod was caught with a rod or line (Figure 13). Cod pots or spearfishing only account for a fraction of the harvest. Analysed by platform it can be seen that a higher proportion of blue cod (16%) was caught from larger boats/launches than was the case for snapper or kahawai (Figure 14).

In terms of bag size (Table 41), the most frequent (one third of bags) was 1–2 fish. Next was a bag size of 0–1 fish (20.7%).

Table 40: Blue cod harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
BCO 1	77	92	17 836	0.20	0.43	7.65	0.20
BCO 2	101	199	57 271	0.19	0.49	27.90	0.19
BCO 3	146	330	248 687	0.18	0.48	119.22	0.18
BCO 5	55	140	84 129	0.24	0.60	50.72	0.23
BCO 7	191	622	180 558	0.17	0.43	76.76	0.17
BCO 8	83	195	94 070	0.35	0.54	50.82	0.35
TOTAL	653	1 578	682 550	0.10	0.49	333.05	0.10

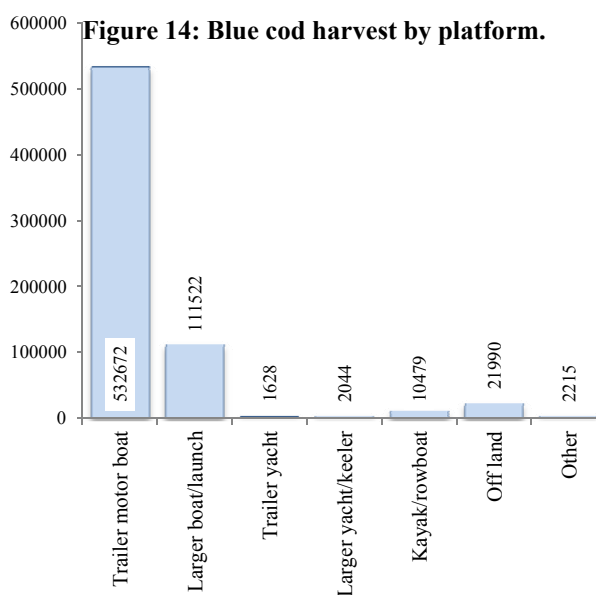
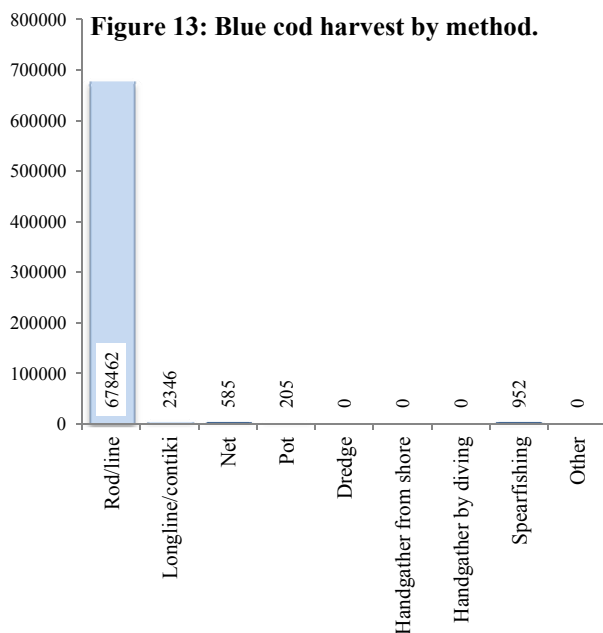


Table 41: Blue cod bag size by Fishstock (row percent).

QMA	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11	12	13+
BCO 1	1.1	73.5	14.4	2.9	4.3	2.4	0.6	0.0	0.9	0.0	0.0	0.0	0.0	0.0
BCO 2	0.0	27.5	29.1	8.6	11.5	7.2	6.8	1.4	3.2	0.9	2.2	0.0	1.2	0.6
BCO 3	0.0	12.5	17.7	7.2	5.8	11.3	5.2	2.6	3.4	3.0	11.3	0.2	3.2	16.7
BCO 5	0.0	5.9	16.7	13.5	8.7	8.9	8.0	4.1	5.8	0.0	8.4	0.0	4.9	15.0
BCO 7	0.0	16.2	48.5	23.1	6.6	2.0	1.8	0.5	0.3	0.2	0.2	0.0	0.4	0.1
BCO 8	0.6	21.4	16.4	16.5	8.1	4.8	5.4	3.6	6.0	2.6	6.2	0.0	2.8	5.4
TOTAL	0.1	20.5	31.9	15.5	7.1	5.3	3.8	1.6	2.3	1.1	3.9	0.0	1.6	5.1

9.4 Red Gurnard

The total estimated harvest for red gurnard for the 2011–12 fishing year was 430 531 fish, or 202.6 tonnes (Table 42). Just over half of the red gurnard (56.2%) were harvested in GUR 1 while 21.8% were taken in GUR 8, 15.5% in GUR 2 and minor catches in GUR 3 and GUR 7.

Figure 15 shows that the main catch method for red gurnard was rod or line with 386 111 fish (89.7%). Three quarters of red gurnard were harvested from a trailer boat with about 10% taken off land and 6.3% from a kayak or rowboat (Figure 16).

The bag size is skewed to the low end with nearly half of the records being bags of 1 fish (or a fraction of 1 fish) and 22% from bags of 2 fish (Table 43).

Table 42: Red Gurnard harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
GUR 1	440	909	241 957	0.14	0.43	103.18	0.15
GUR 2	106	224	66 661	0.20	0.57	38.16	0.20
GUR 3	7	23	4 605	0.62	0.44	2.01	0.62
GUR 7	63	119	23 653	0.24	0.53	12.48	0.24
GUR 8	97	303	93 656	0.23	0.50	46.75	0.23
TOTAL	713	1578	430 531	0.10	0.47	202.57	0.10

Figure 15: Red gurnard harvest by method.

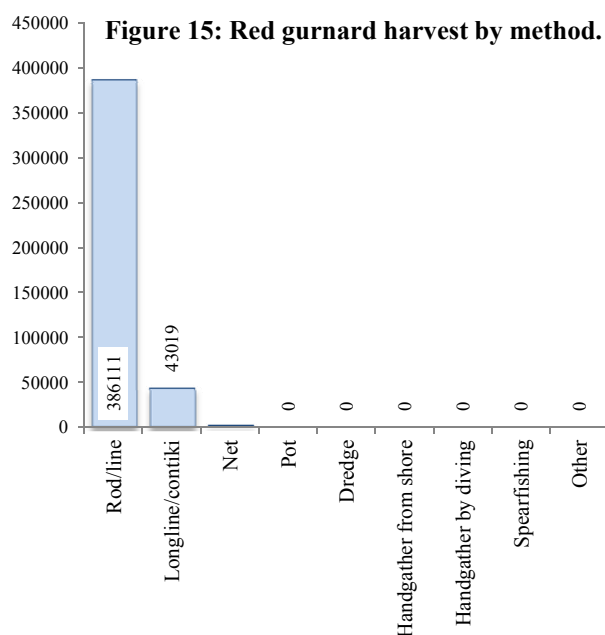


Figure 16: Red gurnard harvest by platform.

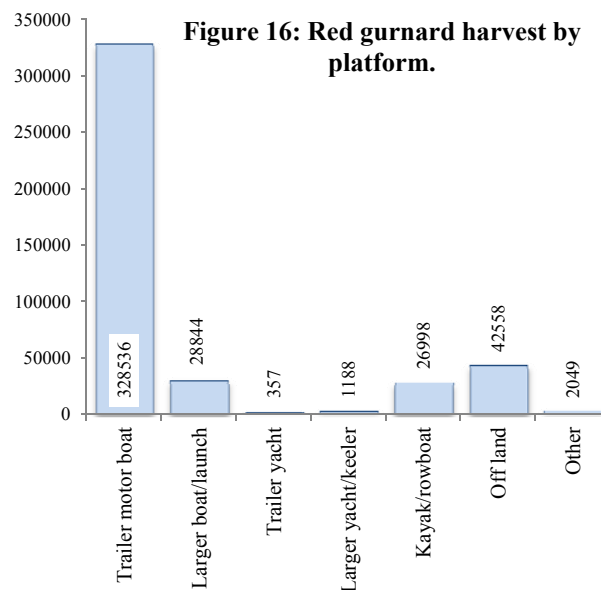


Table 43: Red gurnard bag size by Fishstock (row percent).

QMA	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11	12	13+
GUR 1	4.8	49.1	21.4	7.9	5.6	3.1	3.7	0.7	0.9	0.2	1.2	0.0	0.3	1.1
GUR 2	3.3	37.1	19.7	8.1	8.5	5.4	4.5	4.0	4.6	1.4	1.4	0.0	2.0	0.0
GUR 3	0.0	28.3	66.5	3.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GUR 7	0.0	52.8	29.7	11.6	2.4	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
GUR 8	8.3	31.3	22.3	8.0	8.9	4.2	6.4	2.4	1.0	0.6	2.1	0.5	1.9	2.0
TOTAL	4.8	44.5	22.6	8.2	6.3	3.5	4.0	1.4	1.3	0.4	1.3	0.1	0.8	1.0

9.5 Tarakihi

The total estimated harvest for tarakihi for the 2011–12 fishing year was 361 256 fish (Table 44), or 238.8 tonnes, slightly fewer in number than red gurnard but slightly more by weight. Most tarakihi is harvested off the east coast of the North Island, 45.3% from TAR 1 and 31.4% from TAR 2.

Almost all tarakihi was taken by rod or line (Figure 17) and most from trailer boats (82%, Figure 18) with large boats the next most common platform (15%).

The range of bag sizes reported was quite large, however, half of the reported harvest events were for bag sizes of one or two fish (Table 45).

Table 44: Tarakihi harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
TAR 1	188	359	164 005	0.22	0.70	115.07	0.22
TAR 2	118	257	113 456	0.21	0.65	74.24	0.21
TAR 3	13	28	4 208	0.42	0.68	2.86	0.42
TAR 5	2	2	141	0.73	0.68	0.10	0.73
TAR 7	65	154	48 107	0.38	0.48	23.30	0.38
TAR 8	46	105	31 340	0.29	0.74	23.21	0.30
TOTAL	432	905	361 256	0.14	0.66	238.78	0.14

Figure 17: Tarakihi harvest by method.

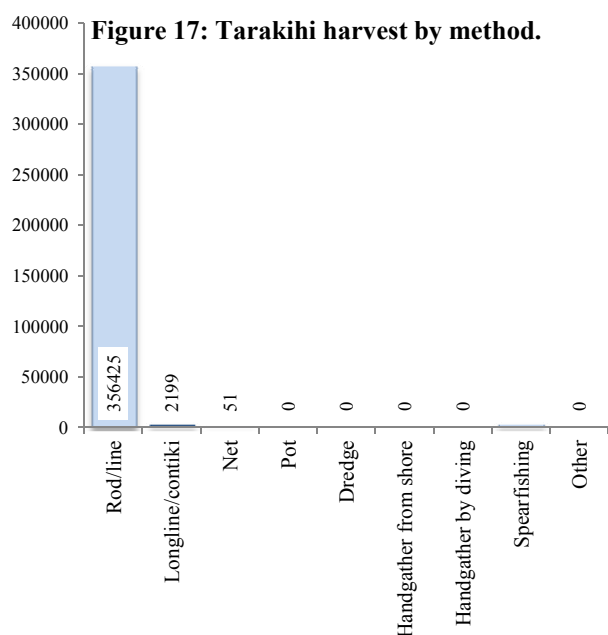


Figure 18: Tarakihi harvest by platform.

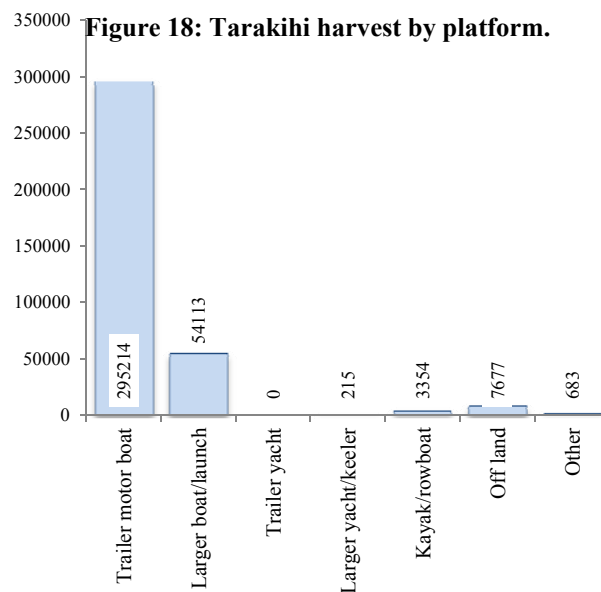


Table 45: Tarakihi bag size by Fishstock (row percent).

QMA	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11	12	13+
TAR 1	0.2	27.2	18.3	9.7	8.3	6.9	8.7	3.3	3.6	2.9	3.0	1.3	1.4	5.3
TAR 2	0.9	20.7	18.2	9.3	10.7	9.0	8.1	3.0	3.5	1.8	7.2	0.8	3.3	3.5
TAR 3	0.0	83.4	12.3	2.5	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
TAR 5	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAR 7	0.0	37.8	22.8	9.7	10.5	8.4	2.1	3.4	2.6	0.0	1.7	0.0	0.9	0.3
TAR 8	0.0	38.9	20.0	7.9	7.5	9.3	4.7	5.5	0.0	0.0	1.8	0.8	1.4	2.1
TOTAL	0.3	30.8	19.0	9.1	9.0	7.7	6.6	3.4	2.9	1.7	3.6	0.8	1.8	3.3

9.6 Trevally

The total estimated harvest for trevally for the 2011–12 fishing year was 173 762 fish, or 209 tonnes (Table 46). There are only four trevally Fishstocks and 80% of trevally is taken from TRE 1, which is the north east coast of the North Island (North Cape down to Tauranga).

Figure 19 shows that almost all the catch was by rod or line (96%). Although most trevally was caught from a fishing vessel, an appreciable number (16.3%) was caught off land (Figure 20).

Bag sizes for trevally were not high with 60% being bag sizes of 0 to 1 fish (Table 47).

Table 46: Trevally harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
TRE 1	349	612	139 473	0.12	1.18	164.75	0.11
TRE 2	40	52	10 308	0.24	1.08	11.15	0.24
TRE 3	3	6	859	0.72	1.26	1.08	0.73
TRE 7	95	146	23 123	0.16	1.39	32.26	0.16
TOTAL	487	816	173 762	0.10	1.20	209.24	0.09

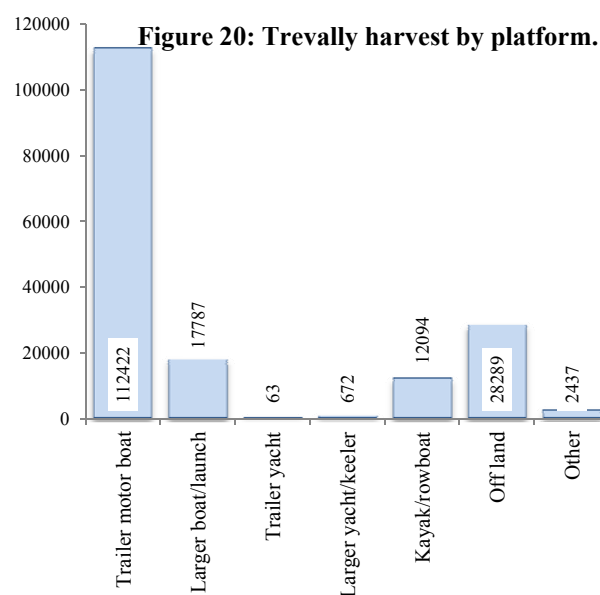
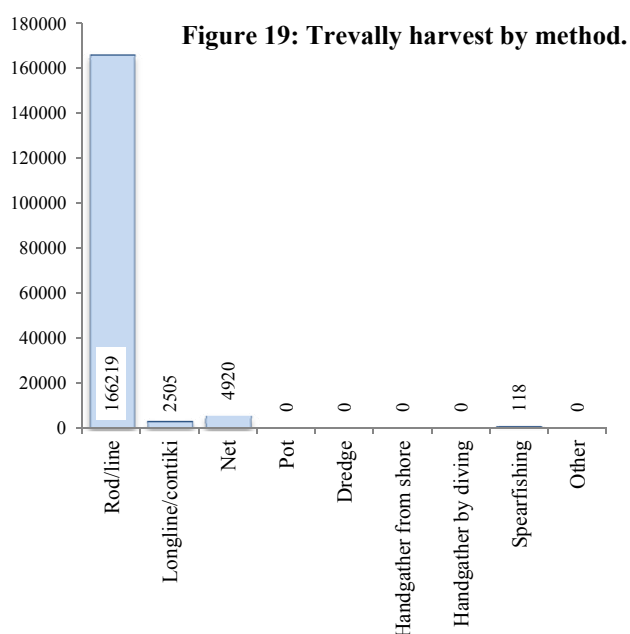


Table 47: Trevally bag size by Fishstock (row percent).

QMA	Bag Size											
	<1	1	2	3	4	5	6	7	8	9	10	12
TRE 1	1.6	55.9	23.0	10.0	3.9	2.9	1.4	0.7	0.3	0.2	0.1	0.1
TRE 2	0.0	58.6	17.5	4.9	9.6	0.0	3.8	2.3	0.0	0.0	3.2	0.0
TRE 3	0.0	62.1	18.9	9.5	0.0	0.0	9.5	0.0	0.0	0.0	0.0	0.0
TRE 7	4.3	64.9	17.2	9.4	2.5	0.7	1.0	0.0	0.0	0.0	0.0	0.0
TOTAL	2.0	57.5	21.8	9.6	3.9	2.4	1.5	0.6	0.3	0.1	0.2	0.1

9.7 Kingfish

The total estimated harvest for kingfish for the 2011–12 fishing year was 64 700 fish, or 662 tonnes (Table 48). Though the fish count was not high, the tonnage was considerable, due to the large fish size. About 80% of the kingfish harvest was taken from KIN 1 (which covers the same area as TRE 1), the north east coast of the North Island (North Cape down to Tauranga).

Although most kingfish were caught with a rod and line (Figure 21), they were also taken by spearfishing (3.6%). 8.9% were taken off land with the remainder from boats (Figure 22).

Bag sizes for kingfish were small (Table 49). 75.3% of bag sizes were 0 to 1 fish and 17.6% 1 to 2.

Table 48: Kingfish harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
KIN 1	219	324	52 056	0.13	10.28	535.30	0.13
KIN 2	28	35	4 025	0.24	10.09	40.60	0.24
KIN 3	2	2	289	0.71	9.97	2.89	0.71
KIN 7	12	17	2 079	0.38	9.97	20.73	0.38
KIN 8	35	46	6 252	0.25	10.01	62.60	0.25
TOTAL	296	424	64 700	0.11	10.23	662.12	0.11

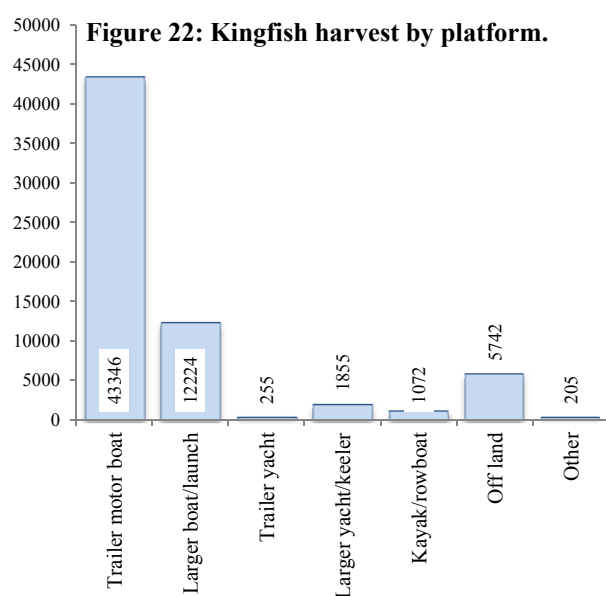
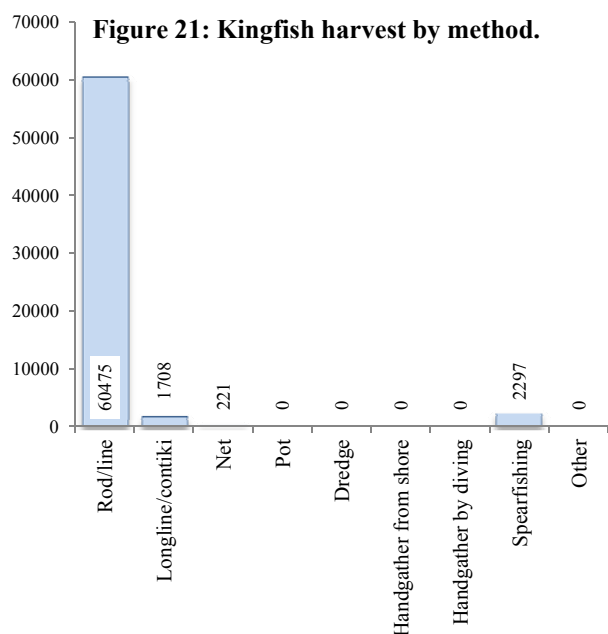


Table 49: Kingfish bag size by Fishstock (row percent).

QMA	Bag Size							
	<1	1	2	3	4	5	6	10
KIN 1	0.9	72.8	17.8	4.2	2.4	1.5	0.1	0.3
KIN 2	1.5	81.0	17.5	0.0	0.0	0.0	0.0	0.0
KIN 3	0.0	72.7	0.0	27.3	0.0	0.0	0.0	0.0
KIN 7	0.0	69.9	25.7	4.3	0.0	0.0	0.0	0.0
KIN 8	2.4	79.7	13.1	4.8	0.0	0.0	0.0	0.0
TOTAL	1.0	74.1	17.5	4.0	1.9	1.2	0.1	0.3

9.8 Skipjack Tuna

The total estimated harvest for skipjack tuna for the 2011–12 fishing year was 41 182 fish, or 92 tonnes (Table 50). There is only one Fishstock for this species so all this species is recorded as being from SKJ 1.

Virtually all of this species was taken by rod (Figure 23). Harvesting from larger boats is more common with 37.9% being taken from this platform (Figure 24).

The bag size variation is quite wide as shown in Table 51. Note that where a bag size is zero this is not shown on the graph.

Table 50: Skipjack tuna harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
SKJ 1	68	103	41 182	0.23	2.24	92.08	0.23
TOTAL	68	103	41 182	0.23	2.24	92.08	0.23

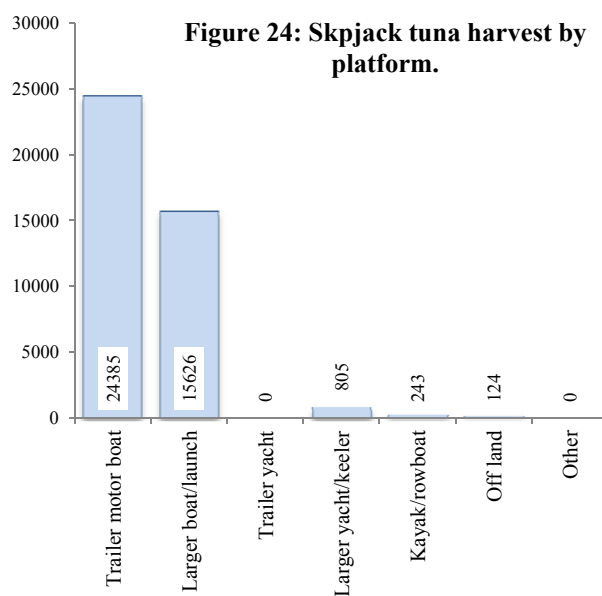
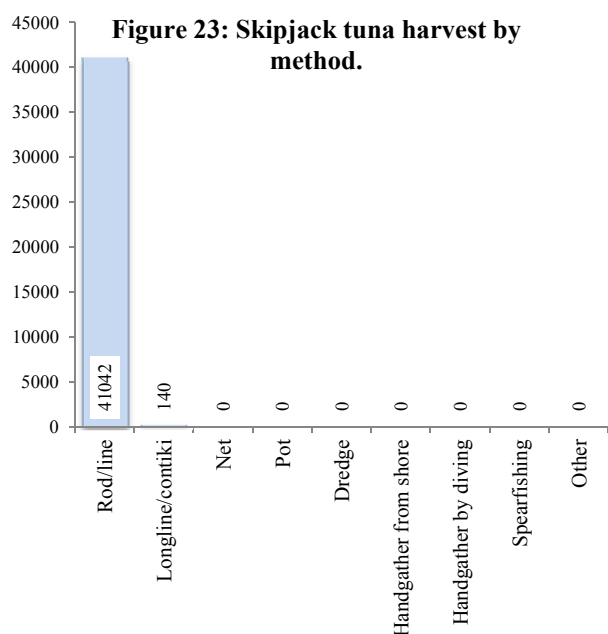


Table 51: Skipjack tuna bag size by Fishstock (row percent).

QMA	Bag Size													
	1	2	3	4	5	6	8	10	12	14	15	17	20	21
SKJ 1	32.2	24.8	14.9	9.7	4.7	3.7	2.5	1.1	0.4	1.8	1.5	1.8	0.5	0.5

9.9 Hapuku/Bass

The total estimated harvest for hapuku/bass for the 2011–12 fishing year was 37 502 fish, or 219.5 tonnes (Table 52). The majority (65%) of hapuku were caught in the upper half of the North Island. 33.7% in HPB 1 and 31.4% in HPB 2.

Virtually all of this species was taken by rod (Figure 25). Harvesting from larger boats (42.0%) was nearly as common (Figure 26) as harvesting from trailer boats (51.1%).

Bag sizes were not high for hapuku/bass (Table 53). Half of the bags were just a single fish (0–1). The rest were mainly over 1 and up to 5 fish.

Table 52: Hapuku harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
HPB 1	27	38	12 655	0.42	5.85	74.08	0.42
HPB 2	55	78	11 788	0.25	5.85	69.01	0.25
HPB 3	18	21	6 383	0.31	5.85	37.36	0.31
HPB 5	1	3	138	1.00	5.85	0.81	1.00
HPB 7	9	11	2 163	0.41	5.85	12.66	0.41
HPB 8	8	15	4 376	0.54	5.85	25.62	0.54
TOTAL	118	166	37 502	0.18	5.85	219.54	0.18

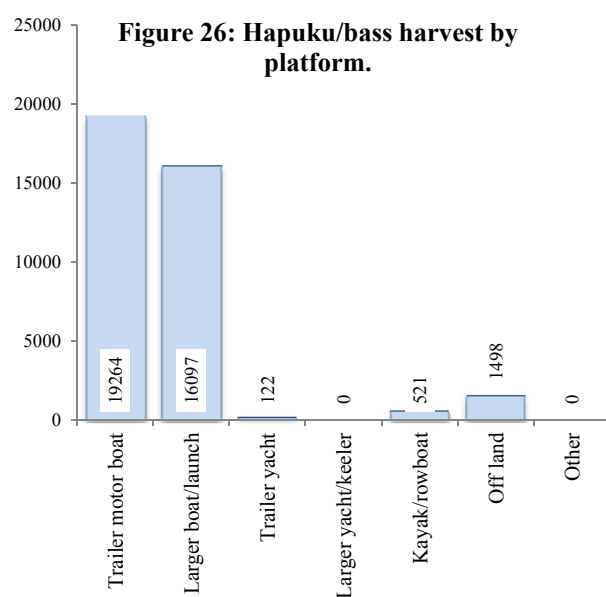
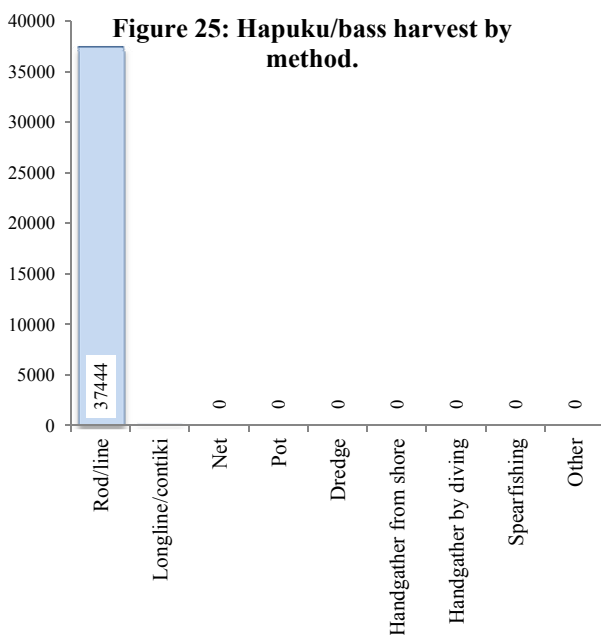


Table 53: Hapuku/bass bag size by Fishstock (row percent).

QMA	Bag Size							
	1	2	3	4	5	6	8	12
HPB 1	47.4	16.6	11.6	10.6	1.2	1.5	1.4	9.7
HPB 2	66.8	20.2	5.9	0.9	6.3	0.0	0.0	0.0
HPB 3	36.2	22.5	11.6	25.9	1.7	2.0	0.0	0.0
HPB 5	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPB 7	31.4	45.2	14.8	0.0	0.0	8.6	0.0	0.0
HPB 8	19.7	30.1	9.6	8.0	28.9	3.8	0.0	0.0
TOTAL	51.3	21.8	9.0	7.8	5.8	1.5	0.4	2.4

9.10 Albacore Tuna

The total estimated harvest for albacore tuna for the 2011–12 fishing year was 21 989 fish, or 92 tonnes (Table 54). This tonnage is very similar to skipjack tuna although the fish count is nearly half. There is only one Fishstock for this species so all of this species is recorded as being from ALB 1.

Almost all of the harvest was by rod or line (Figure 27) and from trailer boats (Figure 28).

Bag sizes were mainly in the range 1 to 4 (Table 55), with most bags (68%) consisting of either one fish or two.

Table 54: Albacore tuna harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
ALB 1	51	76	21 898	0.21	4.21	92.09	0.21
TOTAL	51	76	21 898	0.21	4.21	92.09	0.21

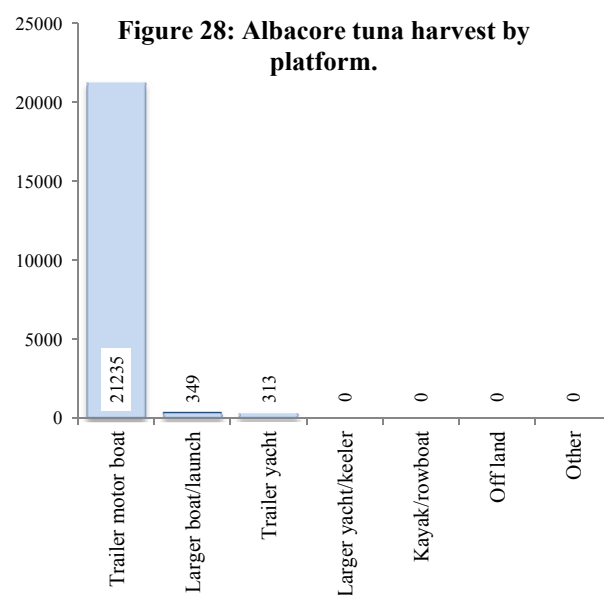
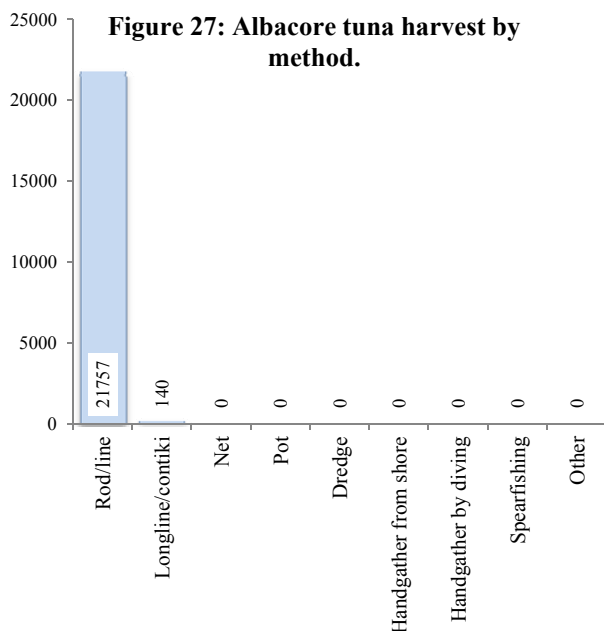


Table 55: Albacore tuna bag size by Fishstock (row percent).

QMA	Bag Size									
	<1	1	2	3	4	5	6	7	9	14
ALB 1	0.0	29.6	38.3	11.7	13.5	1.4	2.6	1.4	0.9	0.6

9.11 Paua

The total estimated harvest for paua for the 2011–12 fishing year was 525 634 by number, or 148.8 tonnes (Table 56). There are eight paua Fishstocks but 54% of the harvest was taken from PAU 2, on the Southern coast of the North Island.

In terms of method of harvest (Figure 29), the majority (74%) was by hand gathering by diving and the remainder hand gathering from the shore. This is one species where access is often by the land and three quarters of the harvest was off land (Figure 30).

There was a spread of bag sizes (Table 57) but many people (44%) appear to reach the bag size limit shown here as being from 9 to 10 fish.

Table 56: Paua harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
PAU 1	39	63	43 480	0.27	0.28	12.16	0.27
PAU 2	158	378	286 182	0.15	0.29	81.85	0.15
PAU 3	35	67	60 717	0.31	0.28	16.98	0.31
PAU 5A	2	3	1 487	0.76	0.28	0.42	0.76
PAU 5B	5	5	2 945	0.50	0.28	0.82	0.50
PAU 5D	41	84	80 290	0.30	0.28	22.45	0.30
PAU 6	0	0	0	-	-	0.00	-
PAU 7	19	41	50 534	0.34	-	14.13	0.34
TOTAL	299	641	525 635	0.11	0.28	148.82	0.11

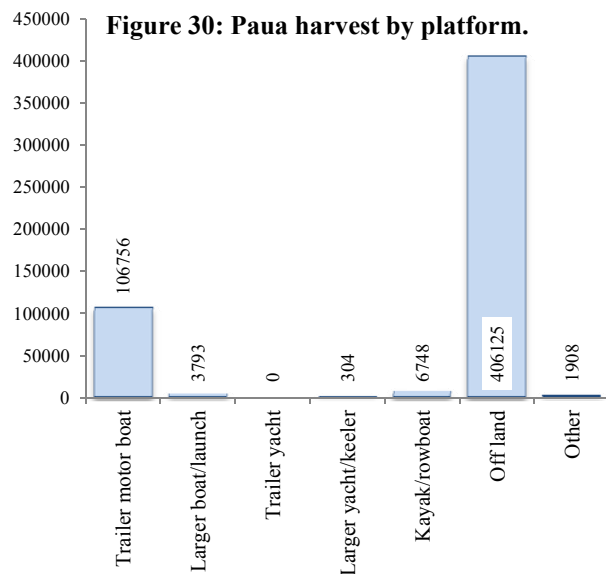
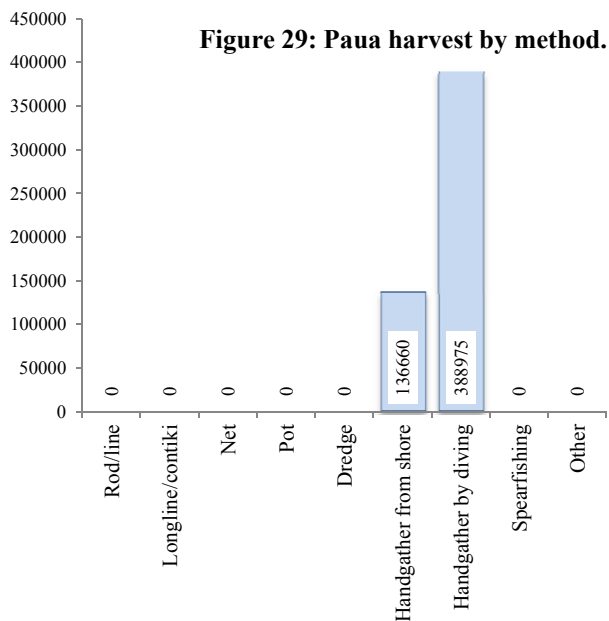


Table 57: Paua bag size by Fishstock (row percent).

QMA	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11 to 19	20	21+
PAU 1	3.7	9.7	15.8	6.0	9.2	4.7	7.9	0.0	5.9	7.0	20.0	9.4	0.0	0.7
PAU 2	0.5	3.4	4.7	6.7	4.4	7.8	8.8	3.6	9.2	1.9	45.7	0.1	1.6	1.5
PAU 3	0.0	3.6	4.0	3.9	1.2	17.3	0.0	12.0	8.7	4.7	43.0	0.9	0.8	0.0
PAU 5A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.8	0.0	0.0	59.2	0.0	0.0	0.0
PAU 5B	0.0	0.0	0.0	26.1	12.9	0.0	0.0	0.0	20.9	0.0	40.1	0.0	0.0	0.0
PAU 5D	0.0	14.8	6.8	2.8	2.1	8.1	1.7	2.9	3.4	0.8	47.8	2.7	0.0	6.0
PAU 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAU 7	0.0	2.7	2.2	4.4	5.3	2.2	9.5	4.4	12.4	0.0	48.7	0.0	8.1	0.0
TOTAL	0.6	5.5	5.8	5.6	4.3	8.1	6.6	4.3	8.3	2.5	43.3	1.5	1.7	1.7

9.12 Scallops

The total estimated harvest for scallops for the 2011–12 fishing year was 1 669 681 by number, or 184.8 tonnes (Table 58). There are 12 Fishstocks for this species and the harvest was spread amongst these. The highest harvest was from SCA CS (36%) followed by SCA 7A (17.7%).

Harvest was almost equally divided by the two main methods of harvest (Figure 31) – dredge and hand gathering by diving. Harvest by hand gathering by diving resulted in slightly more catch (53%). Boats feature heavily in the platforms used to harvest this species (Figure 32). Only 5% were taken from land.

This species is unusual in that it appears to be common to reach the daily bag limit. The influence of the bag limit of 20 in the primary harvest area is shown in Table 59. The right hand column shows the influence of the higher bag limit of 50 in the north east area of the South Island.

Table 58: Scallop harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
SCA 1	26	54	148 905	0.36	0.11	16.48	0.36
SCA 1A	1	1	1 155	1.01	0.11	0.13	1.01
SCA 2A	12	20	36 487	0.41	0.11	4.04	0.41
SCA 3	0	0	0	-		0.00	-
SCA 5	1	3	1 376	1.00	0.11	0.15	1.00
SCA 7	70	172	796 164	0.23	0.11	88.11	0.23
SCA 7A	0	0	0	-		0.00	-
SCA 7B	0	0	0	-		0.00	-
SCA 7C	1	2	10 778	1.06	0.11	1.19	1.06
SCA 8A	1	1	2 306	1.01	0.11	0.26	1.01
SCA 9A	15	30	67 044	0.42	0.11	7.42	0.42
SCA CS	90	194	605 466	0.27	0.11	67.01	0.27
TOTAL	217	477	1 669 681	0.15	0.11	184.79	0.15

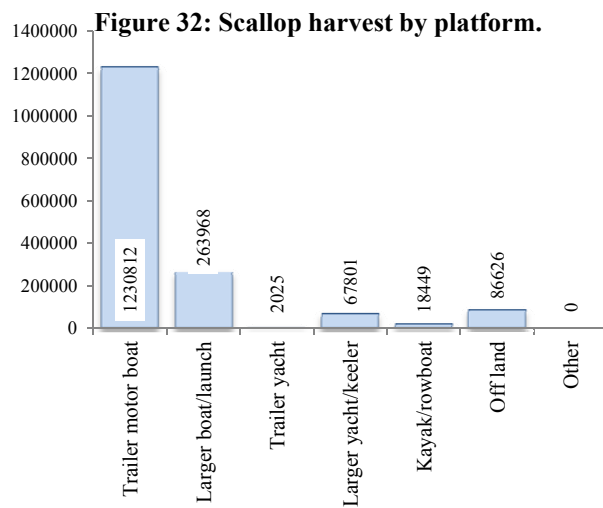
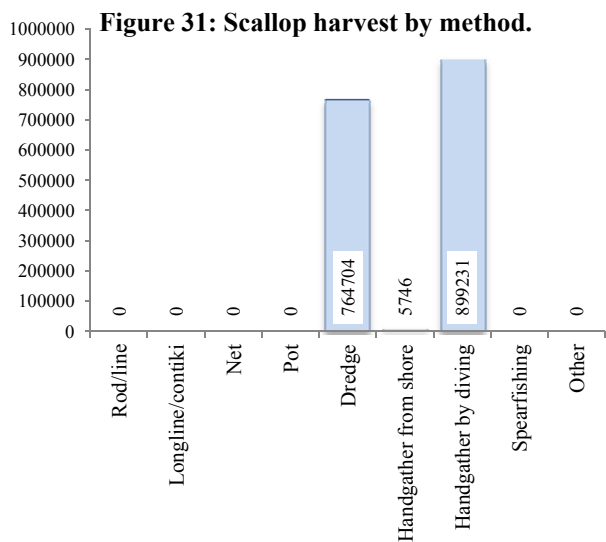


Table 59: Scallop bag size by Fishstock (row percent).

QMA	Bag Size													
	<1 to 4	5 to 9	10	11 to 14	15 to 19	20	21 to 24	25 to 29	30	31 to 39	40	41 to 49	50	51+
SCA 1	4.4	1.7	8.7	3.6	24.4	34.2	0.0	1.0	1.0	0.0	12.8	0.0	0.0	8.3
SCA 1A	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCA 2A	10.5	14.3	0.0	9.2	28.5	20.3	0.0	0.0	0.0	0.0	7.3	0.0	9.9	0.0
SCA 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCA 5	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCA 7	.8	2.1	.9	6.0	4.0	5.2	.9	6.5	4.4	4.8	5.1	7.0	43.0	9.2
SCA 7A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCA 7B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCA 7C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
SCA 8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
SCA 9A	4.1	19.5	3.7	1.4	7.0	40.9	0.0	7.2	0.0	0.0	16.2	0.0	0.0	0.0
SCA CS	1.4	3.8	2.1	2.0	4.2	75.5	0.4	0.4	0.9	0.0	6.5	0.2	0.2	2.3
TOTAL	1.9	4.2	2.7	3.6	7.2	44.5	0.5	2.8	2.0	1.5	7.3	2.3	14.2	5.2

9.13 Rock Lobster

The total estimated harvest for rock lobster for the 2011–12 fishing year was 226 271 by number, or 185.7 tonnes. The harvest by Fishstock was relatively evenly spread across Fishstocks as shown in Table 60. The harvest from CRA 7 and 8 was however minimal.

Of the main methods of harvesting rock lobster, hand gathering by diving furnishes the most harvest (Figure 33). 68.5% of rock lobster is harvested by hand gathering by diving compared with 29.5% via lobster pots. Nearly a fifth of rock lobsters taken by recreational fishers are taken from land (Figure 34). Divers entering the water from land would seem a not insignificant harvest method compared to the more prevalent boat based platforms.

Table 61 shows a generally even spread of bag sizes between 1 and 6 fish. Bags of 2 or less fish make up 49% of bags.

Table 60: Rock lobster harvest by Fishstock.

Fishstock	Fishers (n)	Events (n)	Harvest (n)	CV	Mean Weight (kg)	Harvest (tonnes)	CV
CRA 1	32	90	29 739	0.30	0.81	23.98	0.30
CRA 2	69	168	58 455	0.24	0.70	40.86	0.24
CRA 3	26	47	13 912	0.33	0.58	8.07	0.33
CRA 4	69	206	53 847	0.17	0.82	44.17	0.17
CRA 5	44	143	49 274	0.23	0.88	43.47	0.24
CRA 7	1	1	357	1.03	0.64	0.23	1.03
CRA 8	7	19	5 153	0.60	1.34	6.93	0.60
CRA 9	22	58	15 534	0.30	1.16	17.96	0.30
TOTAL	270	732	226 271	0.11	0.82	185.66	0.11

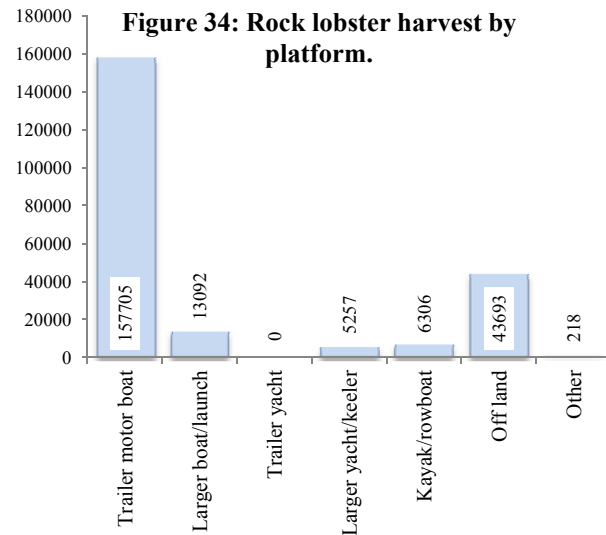
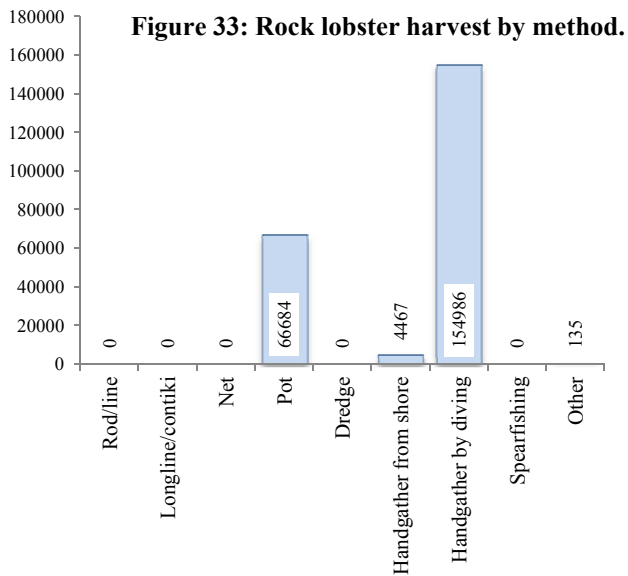


Table 61: Rock lobster bag size by Fishstock (row percent).

QMA	Bag Size													
	<1	1	2	3	4	5	6	7	8	9	10	11	12	13-18
CRA 1	3.0	22.4	32.7	10.9	18.1	6.9	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRA 2	4.0	22.3	26.4	13.7	7.4	3.4	16.9	0.0	2.0	0.7	1.3	0.3	1.4	0.0
CRA 3	10.2	6.2	24.3	15.7	5.6	13.7	24.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRA 4	7.3	25.0	21.0	17.1	11.2	4.3	10.9	0.8	1.1	0.0	0.0	0.7	0.4	0.3
CRA 5	5.3	10.6	16.5	16.9	15.6	9.9	22.5	0.0	0.4	0.0	0.8	0.0	2.3	0.0
CRA 7	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRA 8	0.0	12.6	46.5	6.7	0.0	0.0	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRA 9	2.8	20.1	27.0	2.8	18.9	3.8	23.1	0.0	0.0	0.0	0.0	1.4	0.0	0.0
TOTAL	5.2	19.7	24.5	14.0	12.1	5.7	15.9	0.2	0.9	0.2	0.5	0.3	0.9	0.1

10. DISCUSSION AND EVALUATION

10.1 Sampling Process

Primary Sampling

The types of procedures used to draw the sample were relatively straight forward, and similar to many other large scale meshblock based surveys. There was nothing unusual to report in terms of sample selection or the final sample of 1000 meshblocks. The exclusion of fewer than 2% of meshblocks (mainly remote or with very few dwellings) is considered to have little effect on the representativeness of the sample because, even if these were included, only a low number of such dwellings/respondents would fall into the sample in any case. Even if the occupants were very different in nature to the average, their numbers would be so low as to have little influence on survey results except to displace effective sampling effort from elsewhere.

One issue that did arise from the (population based) sampling procedure, was that estimates for some South Island fisheries were possibly poorly estimated. The best example for this is in CRA 5 where, by chance, no meshblock was randomly selected for the Kaikoura area. This was unfortunate as this is a well known area for CRA harvesting, especially by locals. Typically, given that Kaikoura contains only 0.1% of New Zealand's meshblocks, this would have no substantive impact on the outcomes. However, as a locally resident fisher population is assumed to account for a substantial proportion of the harvest, it is likely that this survey has underestimated the recreational harvest in the area.

The choice of sampling method is discussed in some detail in the Panel Survey Method Report (Heinemann et al. 2014). Arguments could be raised as to whether there might be benefits (or not) from other sampling methods, e.g., basing the sampling on the square root of the population to oversample lower population areas, or a purposive selection to deliberately select places where fishers are more likely to live (e.g. the Kaikoura area). These alternatives tend to direct the sample to capture more fishers or more avid fishers, but compromise the eventual precision estimates by introducing design effects.

It is noted that the final method was selected by the Ministry Of Fisheries Science Working Group (in consultation with the fisheries managers) in preference to alternatives, mainly because the statistical power to project to nationwide harvest would be superior. The issue is raised here merely to point out that alternate sample designs are still possible for future iterations of a similar panel survey, with pros and cons of each in terms of accuracy and representativeness at both local and nationwide levels. The issue is complex because fishers travel to places they like to fish. The behaviour being measured is not specifically locality based.

Secondary Sampling

The secondary sampling involved the selection of 32 dwellings within each sampled meshblock (or less if the meshblock contained fewer than 32 houses).

The procedure used for selecting houses within meshblocks was as follows. Statistics NZ defines each meshblock. Meshblock maps are produced which clearly show all the streets, and even which side of which street, is contained within. A 'start point' is preselected at the NRB Head Office, and marked on the map to show the interviewer where they must start and progress to identify the (up to) 32 houses.

The start point is not completely random because of sampling logistics. It is based on the most practical entry into the meshblock and is designed to make the work easier for the interviewer. It has long been held to be effectively random, because the person in the office selecting the start point cannot see the houses. They cannot aim for houses of a particular type, nor avoid houses they don't like the look of. Because the interviewer doesn't select the start point, they cannot influence its choice either. Therefore the system should be fair and relatively free of bias.

However, there has been some comment that the start point is not actually random. Although this may not matter, it does allow criticism of a 'selected' rather than 'random' start point. In terms of avoiding criticism,

this could be an area for future improvement to the survey. In future surveys, consideration could be given to a more truly random way of generating start points.

One other potential criticism of the secondary level sampling method is the issue of clustering. If a group of adjacent houses is chosen, it is possible they might all have something in common (e.g., it happens to be a 'knob hill' or perhaps an area with a high density of people of one particular ethnicity). In some surveys this is countered by selecting every *n*th house to approach, thus accessing an even coverage of the houses.

Improvements to ensure more even coverage of houses within meshblocks could be considered. This would make no difference for smaller meshblocks (less than or close in number to 32 houses), because many or even all houses are approached already. But for larger meshblocks this could ensure slightly better coverage.

It should be pointed out that the 'clustering effect' is less profound than might first be assumed. That is because many houses have no fishers at all, and so by the time the fishers have been identified there is a much diminished 'clustering'. Fishers are dispersed adequately through the meshblock.

Despite these minor areas for possible improvement, the process of selecting houses within meshblocks can be seen as straightforward and effective.

10.2 Screening And Fisher Selection

Once the sampled homes are selected, the interviewer must then gain access to the home and screen the first available adult to determine whether there are any fishers that reside there. NRB utilised approximately 160 interviewers for the screening that was conducted in the 1000 meshblocks scattered throughout New Zealand. 30 390 dwellings/homes were visited (many were visited multiple times) during this process and 24 199 homes were successfully screened. The calculated response rate, taking into consideration eligibility, was 86% (see Heinemann et al. 2014 report).

Calling Regime

The sampling sheet provided for up to 8 calls to selected homes in order to find an adult who was at home to screen. This is a fairly typical number of allowed calls for a social survey, most of which allow between 4 and 10 calls. The 8 allowed calls proved to be easily sufficient to gain access to the required number of homes. Out of the 30 390 homes visited, there were only 1515 (5%) 'no reply's (excluding 1777 homes which were established as 'vacant') which is an extremely good outcome.

The timing of calling patterns (time of day, day of week) is determined by each interviewer and influenced by their training; their efforts (sometimes constrained by time); and how well the supervisors monitor the calling time efforts.

There is limited improvement to be made on the 5% of homes not contacted. Adding more calls and ensuring that supervisors monitor effort more closely by day and time could conceivably reduce the 'no reply's by a percentage point or so although this would involve additional cost.

Access Issues

One issue where there is room for improvement is that of the properties that had restricted access – in the case of this survey 667 (2.2%) of the homes. These included gated communities and apartment blocks. Sometimes the interviewer cannot gain access to these properties even after approaches to corporate bodies or other points of contact. If the dwellers were no different to the average person this might not affect results. However, in terms of fishing behaviour, if it was contended that people in such dwellings were different from average (e.g., less likely to fish), their treatment as non-responders (currently 'eligibility unknown') might require some more thought. No solution is suggested here, however it is noted that this is an ongoing and possibly increasing issue for door-to-door survey work generally.

Eligible Non-Response

Eligible non-response (such as “refusal”, “not available”, “language”, “incapacitated”) in which people decline to be screened, counts against the response rate. In this study this was minor except for “respondent refusal”, which was encountered at 1677 or 5.5% of all homes. Although it could be argued that more or better attempts might convince such 'door openers' not to refuse the screening, or that more visits to the home might reveal a different (possibly more compliant) person to screen, in practice there is limited gain to be made here. In every survey there will be some people who will not participate, even for a minor request such as a brief screen to classify the residents into fisher avidity groups.

The refusal rate of only 5.5% can be seen as very positive for this style of screening and indicates the public's positive attitude to the survey topic.

Administering The Screening

The screening process involved the interviewer making a presentation to an adult at the dwelling (often the 'door opener') to try to convince them to participate in the screening procedure. Various materials were used to assist the interviewer, mainly the screening document itself, and the showcard with age groups, cultural/ethnic groups and marine fishing groups on it.

There were few issues reported with this process (but see following), perhaps because it is a relatively simple procedure that requires only a moment of the 'door openers' time. Fidelity of process (such as the showcards actually being employed, interviews actually taking place) is mainly a function of interviewer training and threat of audit. With NRB being a specialist in the area of nationwide face-to-face surveying and with its network of 27 supervisors, these matters are routinely managed and executed.

Proxy Screening

Screening for marine fishers in the house was conducted with the first available adult (aged 15 plus). This was the expedient method with so many houses to screen (over 30 000). However it does rely on one person answering for the others in the household which, technically, is a proxy process for anyone other than the answering person.

There has been doubt cast on proxy reporting before, for instance reporting other people's catch or harvest. But for a simple description of another householder's propensity to fish, this can be seen as less of an issue. It does not particularly matter if the description of another's avidity is variable between B, C and D avidity, since all had an equal probability of selection to join the fishing panel. It only matters if there was any systematic error in terms of declaring a person to be a fisher or a non-fisher (A Avidity).

While efficiency of sampling fishers (e.g. reducing false positives and false negatives) could be improved, albeit at some expense, the survey design is not critically reliant on the accuracy of proxy classification of marine fishers. A sample of non-fishers (also called the 'drop-in survey') enables an estimate of the contribution of the false negatives. This showed that the contribution of 'missed fishers' and true 'drop-in' fishers was extremely small in relation to the total harvest. Given that fishing behaviour, equipment, and talk is conspicuous to others in the home, this finding is not remarkable.

The possibility of false positives produced via proxy screening may be more of an issue in terms of ongoing monitoring costs than with the resultant data. Further investigation could be conducted to determine whether any alteration to the proxy methods could furnish any useful improvement here. 'Intention' data from each household member is a possibility, but still potentially unreliable as many behaviour intention questions are.

Fisher Identification

The identification of fishers relied on the description of the fishing groups as expressed on the 'Marine Fishing Group' showcard (Figure 35), and its interpretation.

Marine Fishing Group

Which group describes your/his/her fishing for food or recreation in the sea or salt water?
(‘Fishing’ includes rod, line, net, dredge, dive and hand gathering).

Never. ----- A1

Used to, gave it up, retired for now. ----- A2

Occasionally, but no more than 3 times a year. ----- B

Several times a year, mostly over spring and summer, mostly in the holidays or on long weekends. About 4-9 times a year. ----- C

Regularly: Almost every week or fortnight over spring and summer, 10 times a year or more. D

Figure 35: Fisher avidity showcard.

The showcard's wording was in the 'present tense' and also in the general sense, i.e., providing a loose description of the kind of fisher that someone might be. It also contained a description of likely fishing frequency in each option (e.g., 4–9 times). The descriptions were not descriptions of the last years fishing, or of intention to fish in the future.

This measure was not expected to perfectly relate to actual reported fishing conducted by the enrolled fishers in the subsequent year. Although, on average, D fishers fished the most, C fishers fished less, and B still less – there were many who identified as fishers of some sort that did not fish at all in the study year (41.5%).

Some of this might be explained by unusual circumstances of the 2011–12 fishing year, e.g., the wrecking of MV *Rena* and closure of fishing areas near to Tauranga, a toxic shellfish situation along the Eastern coast of the North Island, and not very good weather over the summer holidays.

Some of the variation might also be due to the fact that future fishing behaviour may always only be loosely tied to the kinds of descriptions offered on such a showcard. Some people may give up fishing (for any of a number of reasons), just happen to not go out, or perhaps the opposite – get drawn in more by the activity and fish much more than they would have anticipated (e.g., if there was good summer weather).

In addition, there were several incidences of people apparently misunderstanding the fishing descriptions. One example was whitebait fishers, who believed this to be included (whitebaiting does not fall under the auspices of the Ministry for Primary Industries and was not measured). A few enrolled fishers appeared to be fresh water fishers only in the monitored year – it is possible that they had not noticed the specification of marine fishing on the showcard.

It has also been conjectured that people who take shellfish do not really consider themselves to be 'fishers' and tend not to have agreed to the status of 'fisher' via such a showcard. This notion is supported by lower than expected harvest counts of the minor shellfish species such as tuatua, pipi and cockles (although this is difficult to gauge in a year of toxic blooms).

Further research could be conducted on the possible predictability of such descriptors of behaviour to see whether further refinement or simplification would be useful. Improvements in training of the interviewers (recruiters) could also be considered to ensure that freshwater fishing and whitebait fishing are not considered as 'marine fishing'.

Fisher Selection

For households containing more than one fisher, there was an intermediate step in which one of the fishers in the household was randomly selected to participate (Kish 1949). The system of doing this was reasonably complex (see Heinemann et al. 2014 for detail) and involved the use of a 'fisher selection table'. This might seem overly complicated for such a survey and a far simpler system would simply be to take the 'next birthday' person. However, NRB experience was that the 'next birthday' system is far from foolproof and provides an easy way for people to self-select into a study. All a person has to do is say "that's me, I have the next birthday".

The more thorough method of fisher selection used for this survey is seen as superior, and resulting in the truly random selection of one of the fishers as it negates self-selection by the respondent. Use of the fisher selection table led to problems in the pilot survey, but the issues that were identified were resolved for the main survey. With the improved training, the table system used can be considered a success.

One area of occasional friction in the households sampled, was the situation where a fisher was not selected for participation, but wanted to be. This might be, for example, where the 'secondary fisher' (often the wife) was randomly selected as the panellist instead of the 'primary fisher' (often the husband). This created some dissention and even a few cases where a husband intimidated the wife into withdrawing from the survey.

Similarly, there were also a number of 'secondary fishers' who were somewhat embarrassed to be the selected fisher. This created quite a task for the interviewers throughout the year to reassure them that it was OK to be the selected fisher, even if they caught few or no fish. Some of these reluctant panellists withdrew from the survey, although we do not have an accurate count as they might not articulate these feelings adequately on withdrawal.

If the issue of resistance or resentment from being the selected fisher (or not) were considered important, then one way of countering this would be to enrol all fishers from a household into the study. This would lead to harvest estimates projected on households rather than on population i.e., a less refined frame for calibration and projection.

Fisher Enrolment

The enrolment task was to convince the selected fisher to agree to participate, either on a routine SMS text schedule, or a regular phone call system over a prolonged period. Fishers were relatively well informed as to what this would involve and in fact they had to do rather little compared with some ongoing panel type surveys. Their role was essentially passive. They only had to answer the texts/calls and, if they had fished, furnish details about this by telephone interview. The project design allowed fishers to select their own reporting frequency to further reduce the burden of responding.

To encourage agreement to participate, main prizes were offered including iPads, and weekly prizes of iPods or cases of wine. There were several pamphlets to advise them how to participate, and help identify main species and fishing areas. Participants were also directed to a website with further information, full scale maps and links to other sites with more detailed fish identification.

Agreement of identified fishers to participate in this study can be seen as excellent, with an initial 90.8% agreeing to participate. Theoretically there is room to improve this response rate, but in practice this might be difficult given that 90.8% is already a high initial acceptance rate. Generally, the last people to agree to participate in a survey are strong resisters and hard to convince.

Adequacy Of Gaining Contact Details

There were two types of households where gaining of contacts was attempted: 1) Where a fisher was enrolled; 2) Where there were only non-fishers in the household.

In the former case, obtaining sufficient information on contact details was less of a problem, as participants were encouraged to provide multiple telephone numbers and give numbers not just for research purposes, but also so that they could be contacted if they won a prize. This worked moderately well, but still many people gave only one number on enrolment. NRB responded to this by mounting a very intensive campaign to try to persuade anyone they came into contact with via the CATI, to provide more numbers. As the participants became more used to the idea of ongoing contact with the interviewers, many complied in this respect and this was most helpful when people changed numbers without advising NRB.

In the case of households with non-fishers, fewer gave numbers, or backup numbers. People naturally were reticent to provide numbers when there was a low chance of further involvement in the survey. In the non-fisher survey (drop-in survey) 21% of the sample had no phone number and around another 7% did not result in a successful contact.

In the latter case (non-fishers), a solution for future iterations of the survey may lie in providing a higher incentive for providing numbers. The chance of winning attractive prizes (such as an iPad) would probably resolve this and should be organised in future.

In the case of the enrolled fishers, the importance of gaining of good contact details cannot be underestimated. Where someone moves or changes cell phone numbers, it is extremely difficult to re-establish contact. A partial solution here is to be fastidious when first collecting contact details. Landline numbers and secondary numbers of relatives not living in the participant's home should be obtained and some mechanism (such as a further incentives/ competitions) provided to perhaps gain email addresses. These tend to not vary when people change address or phone numbers and could be a valuable means of maintaining contact with panellists.

10.3 Materials

The Main Brochure

The main brochure with information about the survey, fish identification and a summary map of the fishing areas, was given to all participants and was also downloadable from the fishing survey website.

The brochure was very well received with positive comments relayed via the CATI operators. Each week there were requests for additional brochures either to replace lost ones, or to obtain further copies.

We have no particular feedback on how to improve such a brochure except that fishers would sometimes point out that a particular species was not on it. It is, of course, impossible to have all species on the brochure but more species would be an advantage.

The Cell Phone Texting Brochure

This was a simple brochure providing basic information about what was required in terms of texting and the CATI calls and also described the possible prizes to be won.

The information provided in the brochure was intentionally limited, for instance, little information was given about how long the survey was (except that it was 'over summer and winter'), nor the exact frequency of contact expected.

Despite this apparent lack of detail, we had little serious negative feedback about this brochure. Fishers that required more information and that were in contact with the CATI operators (either by fishing, or having to be contacted for non-response) simply asked for more detail from them. Most participants that agreed to the texting programme appeared to pick up quickly what was required of them with the level of instruction offered in the brochure.

The Website

There was anecdotal evidence that participants liked the website and found it useful. This mainly came in the form of feedback from interviewers who had either directed fishers to it, or who heard about fishers who had looked at the site of their own volition. Other evidence came from the 'ranking' of the site in Google, which moved higher up the search findings as the study progressed.

Reasons given for people going to the site were: to see if they had won a prize, to seek further information on the study itself, for fish identification, or for area identification.

Websites are becoming more important nowadays and there are ways to improve such a website. Suggestions include:

- Adding a web counter (e.g., Google Analytics) to be able to study hits, hits by page, time spent on each page, etc.
- Link to a Facebook page about the survey.
- The possibility of respondents leaving messages about catch or contact details for the research team.

10.4 Questionnaire Design

The main form of the questionnaire was that designed for CATI administration. The questionnaire was developed by NRB in conjunction with the Ministry for Primary Industries and the Marine Amateur Fisheries Working Group. There was also a more primitive version of the questionnaire (in paper form) that was used for the fisher drop-in survey.

The complexity of the questionnaire routing was such that a high-end survey program (Blaise) was needed for this survey. This is mainly because of the huge number (over 50 000) of combinations of potential 'pathways' required to account for all the factors that lead to a 'fishing event', including: date, area, number of trips, method, platform, catch or not, areas, species, etc. There were also built-in software checks of data collected so as to reduce error in the collection phase. The complexity of the CATI version of the questionnaire is noted here because in future surveys, this might be a limitation, as many survey tools would not be able to manage the questionnaire as it was finally configured.

A number of modifications were made to the questionnaire to remedy issues discovered in the pilot survey. These issues were significant since they profoundly affected what people say they have 'harvested' (i.e., caught and kept). The main issue was about 'sharing of catch'. People variably report exactly what their 'personal catch' was, depending on the exact line of questioning. In the final version:

- Rod and line fishing plus spearfishing were held to be 'personal catch methods' and sharing questions were not offered. This was to avoid people overly agreeing to 'divide' catch where sharing questions were offered.
- All other catch methods (such as longlining, dredging and set netting) were considered to be possibilities for a shared catch where others could have been 'active in catching' the particular species. A series of questions isolated the 'personal catch' for the enrolled fisher.

The modifications to the questionnaire from those in the pilot (Wynne-Jones et al. 2010) appeared to be an improvement especially with regard to the very tricky 'sharing of catch' issue. It is noted that there still were some catches reported over legal number limits, or even multiples of catch limits. But upon audit it was more frequently found that the checks within the instrument itself had been sufficient to produce as near as possible true 'personal catch' estimates.

Some participants were happy enough about the anonymity of the survey to report higher than legal catches. There were a number of situations where a person catching fish 'on behalf' of other passengers or hangers on

claimed these as personal catch – but would have offered a different answer to a fisheries officer (i.e., divided the catch among the available people if this proved expedient). These situations do not show the questionnaire to be lacking, but rather demonstrate issues of determining personal catch more generally.

Probably the most serious criticism of the questionnaire was its length, where there was a complicated catch situation. The questionnaire 'loops' through a series of questions that can be similar or the same, for situations of multiple trips, variations of fishing method or platform in the same day/week, etc.

At times this proved laborious for interviewer and respondent alike. Sometimes the interviewers just managed this by apologising to the participant (e.g., "I'm sorry I have to keep asking these questions, it's just we have to be very thorough about this"). But other times (fortunately rarely), to appease the participant in a hurry, catch details had to be written down and entered after the interview. An example of this is where the fisher said at the start that everything was caught in the one area. The risk when deviating from the exact question stream would be that a respondent would not be asked all the 'check' questions, for instance sharing questions.

For further survey iterations, this situation should be carefully examined to see if there is a software solution (e.g., jumping potential 'looping' question streams). An alternative, which could be considered, is the use of a more structured paper questionnaire (e.g., like the 'drop-in' survey questionnaire) to be employed in these infrequent emergency situations. These would be keyed in (answers copied across) immediately after the interview.

Despite issues relating to the length of the survey for very complex fishing trips, the questionnaire, as administered via the Blaise driven CATI system, proved very effective and efficient. The very structured nature of the interview is believed to have contributed to a far more accurate data collection than through any less structured alternatives would have done.

10.5 SMS Text Reporting

The use of SMS text messaging was an important tool in this iteration of the National Panel Survey. This method of contacting the enrolled fishers, has advantages in terms of cost, speed, and burden to the participant.

For those that were polled weekly, the message would come immediately after the fishing week, minimising the recall period. Those polled less frequently (fortnightly, monthly) soon learned when to expect contact. Replying was as simple as a YES or NO.

The use of texting in this study, allowed a larger sample of fishers to be monitored, and to be monitored more frequently than if phone alone was used.

The Panel Survey Method report (Heinemann et al. 2014) gives a full description of the automated text system and also an analysis of compliance with the regime over the course of the survey. To summarise, the majority of participants agreed to the texting regime and those that did text had an extremely low rate of attrition over the 12 month data collection period. In most weeks, well over 80 percent of those texted successfully replied within the specified two day reporting period.

Although very successful, there were a few drawbacks or possible dangers with the texting method. The supplier chosen for the text system was Datasquirt. There were a number of reasons for this, with the high level data management systems and ability for fishers to Freetext being important. Unfortunately, during the course of the survey, Datasquirt, was sold to a US company. This did not greatly affect matters and the New Zealand service continued uninterrupted. However it does show that the system is reliant on the operator remaining in the marketplace and continuing amicable relations with the telecommunication providers (Telecom, Vodafone, 2 Degrees). The backup plan for the demise of our supplier was to a) find another supplier b) move the contact method to CATI alone. Both of these would have proven awkward and probably would have had a negative effect on response.

Another issue with texting participants was that of having the correct contact numbers to text reminders to. This is discussed in the Panel Survey Method report and the issues and solutions around maintaining good numbers discussed. It was not helpful that in this particular survey year, Telecom shut down their CDMA network. Also that competitive pricing (especially with prepay) caused many people to change suppliers.

Despite these issues, overall the texting system can be seen as very successful and likely to be important in any future iterations of the National Panel Survey.

10.6 CATI Operations

Most CATI (Computer Assisted Telephone Interviewing) operations are conducted in a central location where there is a bank of interviewers. For this survey, however, a decentralised CATI was used. This is where interviewers work from their own homes using 'remote desktop' to connect to the CATI system.

Although the system could have been configured so that individual interviewers had their own sample of participants to work with, this was not the case. Any interviewers operating worked from a common sample and simply took the next phone number offered to them. This was a deliberate part of the study design that effectively randomised which interviewer talks to which fisher each week. The concept is to reduce any 'interviewer effect' through this random allocation process. The advantages of this are spelt out in the Panel Survey Method report (Heinemann et al. 2014).

The CATI operated on a weekly basis with a sample loaded on Monday evening, after the texters had been given all of Monday to text back their (YES or NO) replies. Any late texters after this time and up until 3pm Tuesday were still taken into consideration and their replies edited into the CATI sample – if phone contact had not already been made with them.

The work hours for CATI interviewers were Monday to Thursday, from 6pm to 9pm, although they could also make appointments for other times if this suited the respondent. Generally the sample would not last the whole week and most interviews were achieved in the first few days of each week. A roster was in place to make sure that appointments outside the core interviewing times were covered (e.g., for shift workers or others who liked to be called in the day).

Management of the CATI was by via emails, telephone calls, and texting (e.g., an interviewer could ask for the CATI Manager to call them back to solve a particular issue). Emails of encouragement, feedback on how they were getting through the sample and notes about special things to watch for were sent most working days.

This system proved very flexible in its operation and most suitable for the study. The sample size each week was variable, depending on the number who had fished, and the number who successfully texted back. A decentralised CATI suits this variable demand.

Another advantage of a decentralised CATI was that it was well liked by interviewers and thus retention of staff was excellent. All but one of the interviewers used for this study were there from the start. This avoided the need for constantly replacing and retraining interviewers.

From the respondent's point of view, the interview was less like a usual CATI interview, since there was no background noise of other interviewers and a more individualised feel. Time of calling was more adaptable than in most CATIs.

One potential disadvantage of a decentralised CATI system was that the interviewers were not under constant supervision. This meant that some reliance was placed on the interviewers to behave appropriately, ask all questions accurately without skipping any, key in all detail correctly and so on.

In practice, a number of audit checks and software checks were conducted on an ongoing basis to ensure that everything was in order. Each week, checks on measures such as: call success rates, interview duration, question duration, calls per minute, and answer ranges were conducted. In addition, interviewers knew that another interviewer might talk to the respondent next time and might report anything unusual.

Note that for other forms of social surveying, including face-to-face interviewing, web surveys, and self-completion, the interview process is not under direct scrutiny either. This is normal and works by a combination of trust, auditing and other fidelity checking methods.

Overall the researchers consider the method of distributed CATI worked extremely well. The only suggestion for improvement for future iterations would be perhaps to have the first few weeks of calling in-house to allow initial monitoring.

10.7 Fidelity Of Fisher's Reporting

Reported behaviour gathered by surveys is inherently open to the question of how well it was remembered and whether it was truthfully reported. This survey design addressed the memory issue explicitly by minimising the time period for which fishing was to be reported, and minimising the elapsed time between that period and the reporting on it. Forgetting and displacement (telescoping) are considered to have been successfully controlled.

Truthfulness in reporting is considered to arise when no pressures encourage over, under or other misreporting. For example, reporting in front of peers, an authority figure, or just a judgemental 'other' is thought to attract the risk of misreport.

The panel survey approach used here provides an anonymous and confidential means of surveying fishers with no repercussions for the reporting fisher or his/her immediate interests. The interviewer and the questions are unlikely to frame the fisher's reporting in any biased manner. Rotation of the interviewer prevented any connection that might lead to the fisher reporting to impress the interviewer. Arguably the respondent would decline or exit the survey in preference to repeatedly constructing detailed (each trip was intensely questioned) fabrications of fishing events. This argument is supported by the fact that respondents dropping out of the survey most commonly said that they hadn't fished or were unlikely to in the near future, and so felt it not worthwhile remaining in.

Underreporting, by texting NO or by understating the number of days fished, or the number caught are, in principle, options open to the fisher. It is difficult to prove that this did not happen, in the same way that it is difficult to prove it does not happen with telephone only surveys. People do not readily acknowledge that they are deliberately failing to disclose to you. The thinking is, however, that this behaviour is counterintuitive to what we understand about fishers. Catching a fish affirms the fisher's effort/skill and is rewarding to report. In essence, they want to report their catch because they are proud of it, and will take the time to do this. In any event, why would a fisher persist with texting NO when they could painlessly exit the survey rather than repeatedly experience the contact attempts?

There is also the possibility that over-catching in relation to the regulations may not be adequately reported (e.g. the catch trimmed to match the regulations) if the respondent was uncertain about the anonymity offered in the survey. Again, although we cannot be certain this did not happen, there were a good number of reports of catches exceeding regulations which is encouraging.

Quantification of fidelity effects in reporting fishing behaviour is elusive. Assessment is theoretically available through comparison between reported behaviour from the panel and intercept interviews carried out on ramps where physical observation and count is possible. However, this comparison is more difficult than it first appears. Fishers heading for a ramp may see the survey interviewers and arrange to hide or jettison some catch, and to share the catch between the persons on the boat to align it with regulations. These behaviours will lead to differences between panel reports of trips and intercept interview reports.

For the time being, surveys such as the panel survey rely on the assumption that by far the majority of people will accurately report their behaviour where there is no incentive or consequences for doing otherwise, given their ability to recall that behaviour over a short period.

10.8 Coding And Data Checking

The questions in this survey were mainly closed so the primary coding task was for fish species other than those precoded. Beyond this the tasks were essentially checking of spelling (boat ramp names, land points, nearest town), and then logic checks to ensure that information had been entered/gathered correctly.

Coding and data checking was done on a batch basis, with about seven batches being conducted over the course of the survey. As the survey constantly 'back filled' data (e.g., for missing weeks recovered), the batches were as at that point of time, not restricted to certain weeks.

Key crosschecks conducted were:

- Area code versus land point and nearest town.
- Species caught versus method.
- Species caught versus platform.

The coding of fish species was mainly straightforward. However some of the species names were not very specific (eel, wrasse, puupuu). Where whitebait had been counted, these catches were deleted from the database, as whitebait is not included in this survey. Usually there was no other marine fishing where freshwater species were reported and the fishing days changed to 'not fished'. Any mention of a conceivable fresh water fish (trout, salmon, eel) was crosschecked to see if the area descriptions matched marine areas. Fresh water species remaining in the data, we believe to have been caught in the sea, or a marine river mouth.

In terms of species checks against method/platform, where the result appeared unlikely, these were either checked by audit, or amended if straightforward. An example of the latter is where flounder were recorded as being caught by 'spearfishing'. In these cases they were changed to hand gather or floundering from shore as specified in the predetermined protocol. Other examples were where paua or lobster were recorded as being caught by 'spearfishing'. These were corrected to 'hand gather by diving'. This was a not an infrequent error and was caused by the interviewers not recording multiple methods during the interview. The fisher might say, "I went diving and speared a blue moki, four butterflyfish, oh and I got four paua". The interviewer should have known to re-enter a second method once the paua was mentioned, even if the fisher had not previously mentioned 'hand gathering by diving'.

Some improvements to the CATI software (e.g., more sophisticated built in soft error checks) would reduce the incidence of some of these issues, however coding and data checking are likely to remain an essential part of such a survey.

10.9 Harvest Expansion Method

When the survey was planned it was expected that results from the 2011 Census would be available. However, because of the Christchurch earthquakes, the Census was delayed until 2013. This has affected the estimation in two ways. The meshblocks were sampled using 2006 Census information and as noted in Section 6.1 the estimates of number of occupied dwellings were very different from the enumerated number of occupied dwellings, for some meshblocks. This meant that the selection weights were larger and more variable than would be the case if up-to-date Census information had been available. Secondly, the calibration to adjust for non-response had a less rich set of variables to use than would have been available from a recent census. In particular, fine-scale ethnic breakdowns were not available. If the use of different

methods or platforms or targeted species varies across different ethnic groups, potentially better estimates might have been made.

The objective of the survey was to produce reliable estimates for key species where there are large numbers of fishers and or fishing trips. As noted in Section 6.1, for key species, large statistical weights for a few respondents can impact on the estimates much less than the sample error, and hence can be ignored. If researchers are interested in some of the species caught by a small proportion of fishers, and some of them have large weights, then it might be worth investigating whether truncating and/or redistributing the weights improves the mean square error of the estimates. This approach requires expert subject matter knowledge as a naïve application of this method may lead to worse estimates.

For this survey, the analysis of the panel non-response concluded that imputing the missing (weekly) data would not produce a worthwhile gain. This might change if the survey was run again.

11. CONCLUSIONS

The methods employed to conduct the 2011–12 National Panel Survey are a significant improvement on those used by previous off-site surveys, producing estimates which are more defensible and more accurate (Hartill & Edwards in review).

Contained in this report are some useful ideas to improve further iterations of the survey. These should be seen more as refining the methods, rather than any radical departure from what is believed to be an essentially sound approach to an effective population-based sample survey.

12. ACKNOWLEDGMENTS

There are many people involved in the development and conduct of a research project of this magnitude. The authors would like to thank all the contributors for their efforts and input.

During the development process and throughout the course of the survey the Marine Amateur Fishing Working Group (MAFWG) met routinely and provided considerable input into the surveys design, execution and analysis. In addition to Ministry for Primary Industries' representatives and the National Research Bureau, the MAFWG included scientists and representatives from NIWA, Blue Water Marine Research, Seafic and Trophic. The invaluable contributions of all MAFWG participants are duly acknowledged.

The survey involved gathering fishing information from panellists over an entire year. Despite some measure of automation now available (such as the CATI and SMS systems), there was still the on-going task of interviewing the many fishers to verify any fishing and determine a myriad of catch details. We would like to thank the NRB interviewers who tirelessly carried out this work.

Lastly and most importantly, we would like to express our appreciation to the members of the public who agreed to participate in this survey, most of whom stayed in contact with us for the entire year-long survey. Thank you very much for your texts, and allowing our interviewers to grill you about the details of your fishing. This survey would not have been possible without your support and efforts for which we are most grateful. We trust you take some pleasure from knowing that your contributions are invaluable in informing the sustainable management of New Zealand's fisheries in the years to come.

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14. APPENDICES - MARINE HARVEST REFERENCE TABLES

These tables show harvest estimates weighted up to population level data for the 2011–12 year.

They include charter fishing activity.

They exclude fishing with a customary permit.

They exclude personal allowance from a commercial catch.

They exclude fishing where all fish were released.

Tables are for these species:

Albacore Tuna

Bluenose

Blue Cod

Gurnard

Hapuku/Bass

Kahawai

Kingfish

Skipjack Tuna

Snapper

Sea perch

Tarakihi

Trevally

Lobster/Crayfish (Spiny/Red)

Paua

Scallops

There are four tables per species: platform × FMA, method × FMA, platform × QMA, method × QMA

Note that QMA's may be different for different species. MPI or NABIS can provide further details as required.

15. SNAPPER HARVEST ESTIMATES

15.1 Snapper Harvest By Platform And FMA

National Panel Survey 2011–12 - Snapper Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	2819213	0.17	2963.67	0.17
Larger motor boat or launch	1	400258	0.12	423.44	0.12
Trailer yacht	1	3465	0.86	3.96	0.90
Larger yacht or keeler	1	40669	0.21	44.91	0.22
Kayak, canoe, or rowboat	1	187956	0.44	198.25	0.50
Off land, including beach, rocks or jetty	1	289936	0.14	313.87	0.15
Something else	1	31376	0.30	32.90	0.29
Total	1	3772874	0.08	3980.99	0.08
Trailer motor boat	2	36133	0.32	37.11	0.32
Larger motor boat or launch	2	2924	0.55	3.00	0.55
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	2099	0.53	2.16	0.53
Off land, including beach, rocks or jetty	2	14625	0.31	15.02	0.31
Something else	2	0		0.00	
Total	2	55781	0.25	57.29	0.25
Trailer motor boat	3	483	1.02	0.49	1.02
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	136	1.01	0.14	1.01
Something else	3	0		0.00	
Total	3	619	0.82	0.63	0.82
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	90173	0.24	72.07	0.24
Larger motor boat or launch	7	5206	0.36	4.16	0.36
Trailer yacht	7	607	0.73	0.49	0.73
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	5384	0.32	4.30	0.32
Off land, including beach, rocks or jetty	7	8959	0.96	7.16	0.96
Something else	7	1023	0.71	0.82	0.71
Total	7	111353	0.17	89.00	0.17
Trailer motor boat	8	129741	0.26	150.46	0.26
Larger motor boat or launch	8	8135	0.38	9.43	0.38
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	806	0.61	0.93	0.61
Kayak, canoe, or rowboat	8	14854	0.57	17.23	0.57
Off land, including beach, rocks or jetty	8	27087	0.31	31.41	0.31
Something else	8	1613	1.01	1.87	1.01
Total	8	182236	0.16	211.34	0.16
Trailer motor boat	9	300275	0.19	334.07	0.21
Larger motor boat or launch	9	55922	0.23	53.92	0.24
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	322	1.00	0.25	1.00
Kayak, canoe, or rowboat	9	1436	0.53	1.57	0.62
Off land, including beach, rocks or jetty	9	71150	0.29	82.38	0.30
Something else	9	941	0.74	0.72	0.74
Total	9	430045	0.19	472.90	0.20

15.2 Snapper Harvest By Method And FMA

National Panel Survey 2011–12 Snapper Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	3552382	0.26	3739.22	0.25
Long-line including set line, contiki or kite	1	213495	0.19	233.56	0.21
Net (not including landing net used if caught on line)	1	4064	0.41	4.86	0.40
Pot (eg. for crayfish)	1	54	1.00	0.06	1.00
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	2648	0.43	2.99	0.43
Some other method	1	230	1.02	0.29	1.02
Total	1	3772874	0.08	3980.99	0.08
Rod or line (not long line)	2	53716	0.33	55.17	0.33
Long-line including set line, contiki or kite	2	1995	0.45	2.05	0.45
Net (not including landing net used if caught on line)	2	71	1.06	0.07	1.06
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	55781	0.25	57.29	0.25
Rod or line (not long line)	3	619	0.82	0.63	0.82
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	619	0.82	0.63	0.82
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	102878	0.24	82.22	0.24
Long-line including set line, contiki or kite	7	7934	0.93	6.34	0.93
Net (not including landing net used if caught on line)	7	541	1.28	0.43	1.28
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	111353	0.17	89.00	0.17
Rod or line (not long line)	8	162016	0.15	187.89	0.15
Long-line including set line, contiki or kite	8	20084	0.26	23.29	0.26
Net (not including landing net used if caught on line)	8	136	1.01	0.16	1.01
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	182236	0.16	211.34	0.16
Rod or line (not long line)	9	397080	0.17	431.78	0.19
Long-line including set line, contiki or kite	9	32856	0.56	41.04	0.56
Net (not including landing net used if caught on line)	9	110	1.00	0.08	1.00
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	430045	0.19	472.90	0.20

15.3 Snapper Harvest By Platform And QMA

National Panel Survey 2011–12 - Snapper Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	SNA 1	2819213	0.12	2963.67	0.12
Larger motor boat or launch	SNA 1	400258	0.11	423.44	0.10
Trailer yacht	SNA 1	3465	0.41	3.96	0.43
Larger yacht or keeler	SNA 1	40669	0.22	44.91	0.22
Kayak, canoe, or rowboat	SNA 1	187956	0.18	198.25	0.18
Off land, including beach, rocks or jetty	SNA 1	289936	0.16	313.87	0.16
Something else	SNA 1	31376	0.35	32.90	0.34
Total	SNA 1	3771345	0.08	3980.99	0.08
Trailer motor boat	SNA 2	36133	0.27	37.11	0.27
Larger motor boat or launch	SNA 2	2924	0.58	3.00	0.58
Trailer yacht	SNA 2	0		0.00	
Larger yacht or keeler	SNA 2	0		0.00	
Kayak, canoe, or rowboat	SNA 2	2099	0.50	2.16	0.50
Off land, including beach, rocks or jetty	SNA 2	14625	0.34	15.02	0.34
Something else	SNA 2	0		0.00	
Total	SNA 2	55768	0.25	57.29	0.25
Trailer motor boat	SNA 3	483	1.02	0.49	1.02
Larger motor boat or launch	SNA 3	0		0.00	
Trailer yacht	SNA 3	0		0.00	
Larger yacht or keeler	SNA 3	0		0.00	
Kayak, canoe, or rowboat	SNA 3	0		0.00	
Off land, including beach, rocks or jetty	SNA 3	136	1.01	0.14	1.01
Something else	SNA 3	0		0.00	
Total	SNA 3	619	0.82	0.63	0.82
Trailer motor boat	SNA 7	90173	0.27	72.07	0.27
Larger motor boat or launch	SNA 7	5206	0.39	4.16	0.39
Trailer yacht	SNA 7	607	0.73	0.49	0.73
Larger yacht or keeler	SNA 7	0		0.00	
Kayak, canoe, or rowboat	SNA 7	5384	0.31	4.30	0.31
Off land, including beach, rocks or jetty	SNA 7	8959	0.97	7.16	0.97
Something else	SNA 7	1023	0.71	0.82	0.71
Total	SNA 7	111346	0.17	89.00	0.17
Trailer motor boat	SNA 8	430016	0.13	484.53	0.14
Larger motor boat or launch	SNA 8	64057	0.75	63.35	0.59
Trailer yacht	SNA 8	0		0.00	
Larger yacht or keeler	SNA 8	1128	0.94	1.18	0.72
Kayak, canoe, or rowboat	SNA 8	16290	0.86	18.79	0.87
Off land, including beach, rocks or jetty	SNA 8	98236	0.25	113.79	0.25
Something else	SNA 8	2555	0.69	2.60	0.75
Total	SNA 8	612318	0.14	684.24	0.15

15.4 Snapper Harvest By Method And QMA

National Panel Survey 2011–12 - Snapper Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	SNA 1	3552382	0.18	3739.22	0.17
Long-line including set line, contiki or kite	SNA 1	213495	0.22	233.56	0.24
Net (not including landing net used if caught on line)	SNA 1	4064	0.38	4.86	0.39
Pot (eg. for crayfish)	SNA 1	54	1.00	0.06	1.00
Dredge, grapple or rake	SNA 1	0		0.00	
Hand gather or floundering from shore	SNA 1	0		0.00	
Hand gather by diving	SNA 1	0		0.00	
Spearfishing	SNA 1	2648	0.46	2.99	0.47
Some other method	SNA 1	230	1.02	0.29	1.02
Total	SNA 1	3771345	0.08	3980.99	0.08
Rod or line (not long line)	SNA 2	53716	0.22	55.17	0.22
Long-line including set line, contiki or kite	SNA 2	1995	0.47	2.05	0.47
Net (not including landing net used if caught on line)	SNA 2	71	1.06	0.07	1.06
Pot (eg. for crayfish)	SNA 2	0		0.00	
Dredge, grapple or rake	SNA 2	0		0.00	
Hand gather or floundering from shore	SNA 2	0		0.00	
Hand gather by diving	SNA 2	0		0.00	
Spearfishing	SNA 2	0		0.00	
Some other method	SNA 2	0		0.00	
Total	SNA 2	55768	0.25	57.29	0.25
Rod or line (not long line)	SNA 3	619	0.82	0.63	0.82
Long-line including set line, contiki or kite	SNA 3	0		0.00	
Net (not including landing net used if caught on line)	SNA 3	0		0.00	
Pot (eg. for crayfish)	SNA 3	0		0.00	
Dredge, grapple or rake	SNA 3	0		0.00	
Hand gather or floundering from shore	SNA 3	0		0.00	
Hand gather by diving	SNA 3	0		0.00	
Spearfishing	SNA 3	0		0.00	
Some other method	SNA 3	0		0.00	
Total	SNA 3	619	0.82	0.63	0.82
Rod or line (not long line)	SNA 7	102878	0.20	82.22	0.20
Long-line including set line, contiki or kite	SNA 7	7934	1.33	6.34	1.33
Net (not including landing net used if caught on line)	SNA 7	541	0.87	0.43	0.87
Pot (eg. for crayfish)	SNA 7	0		0.00	
Dredge, grapple or rake	SNA 7	0		0.00	
Hand gather or floundering from shore	SNA 7	0		0.00	
Hand gather by diving	SNA 7	0		0.00	
Spearfishing	SNA 7	0		0.00	
Some other method	SNA 7	0		0.00	
Total	SNA 7	111346	0.17	89.00	0.17
Rod or line (not long line)	SNA 8	559096	0.15	619.67	0.16
Long-line including set line, contiki or kite	SNA 8	52940	0.58	64.33	0.60
Net (not including landing net used if caught on line)	SNA 8	245	0.71	0.24	0.74
Pot (eg. for crayfish)	SNA 8	0		0.00	
Dredge, grapple or rake	SNA 8	0		0.00	
Hand gather or floundering from shore	SNA 8	0		0.00	
Hand gather by diving	SNA 8	0		0.00	
Spearfishing	SNA 8	0		0.00	
Some other method	SNA 8	0		0.00	
Total	SNA 8	612318	0.14	684.24	0.15

16. KAHAWAI HARVEST ESTIMATES

16.1 Kahawai Harvest By Platform And FMA

National Panel Survey 2011–12 - Kahawai Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	379276	0.08	574.06	0.08
Larger motor boat or launch	1	33531	0.14	50.50	0.14
Trailer yacht	1	477	0.66	0.75	0.66
Larger yacht or keeler	1	8199	0.31	12.19	0.32
Kayak, canoe, or rowboat	1	41560	0.38	61.70	0.38
Off land, including beach, rocks or jetty	1	170856	0.15	252.59	0.15
Something else	1	3926	0.38	5.93	0.39
Total	1	637824	0.07	957.71	0.07
Trailer motor boat	2	71445	0.22	112.06	0.22
Larger motor boat or launch	2	4031	0.38	6.34	0.39
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	162	1.02	0.26	1.02
Kayak, canoe, or rowboat	2	5835	0.42	9.24	0.42
Off land, including beach, rocks or jetty	2	63788	0.17	99.78	0.17
Something else	2	437	0.61	0.69	0.61
Total	2	145698	0.12	228.37	0.12
Trailer motor boat	3	1878	0.65	2.55	0.62
Larger motor boat or launch	3	95	1.01	0.12	1.01
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	275	0.71	0.35	0.71
Off land, including beach, rocks or jetty	3	7281	0.26	9.47	0.26
Something else	3	85	1.00	0.11	1.00
Total	3	9614	0.27	12.60	0.27
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	44593	0.21	62.07	0.20
Larger motor boat or launch	7	6616	0.28	9.80	0.28
Trailer yacht	7	159	1.04	0.20	1.04
Larger yacht or keeler	7	998	0.68	1.76	0.56
Kayak, canoe, or rowboat	7	3380	0.48	4.32	0.48
Off land, including beach, rocks or jetty	7	37641	0.29	52.99	0.29
Something else	7	1713	0.54	2.80	0.56
Total	7	95101	0.19	133.96	0.19
Trailer motor boat	8	50279	0.28	82.04	0.28
Larger motor boat or launch	8	2946	0.37	4.90	0.37
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	323	1.02	0.54	1.02
Kayak, canoe, or rowboat	8	4460	0.61	7.33	0.62
Off land, including beach, rocks or jetty	8	41785	0.23	66.14	0.24
Something else	8	986	0.94	1.64	0.94
Total	8	100779	0.18	162.60	0.17
Trailer motor boat	9	89431	0.29	143.52	0.30
Larger motor boat or launch	9	23856	0.76	37.99	0.77
Trailer yacht	9	339	1.01	0.56	1.01
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	1289	0.42	2.12	0.43
Off land, including beach, rocks or jetty	9	66100	0.18	104.90	0.18
Something else	9	295	0.79	0.49	0.79
Total	9	181309	0.14	289.59	0.14

16.2 Kahawai Harvest By Method And FMA

National Panel Survey 2011–12 - Kahawai Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	602995	0.07	905.76	0.07
Long-line including set line, contiki or kite	1	22867	0.42	34.15	0.44
Net (not including landing net used if caught on line)	1	10110	0.41	14.99	0.41
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	1852	1.61	2.80	1.52
Some other method	1	0		0.00	
Total	1	637824	0.07	957.71	0.07
Rod or line (not long line)	2	137024	0.17	214.83	0.17
Long-line including set line, contiki or kite	2	5734	0.50	8.92	0.49
Net (not including landing net used if caught on line)	2	2738	0.53	4.33	0.53
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	203	0.72	0.29	0.72
Total	2	145698	0.12	228.37	0.12
Rod or line (not long line)	3	9478	0.27	12.28	0.27
Long-line including set line, contiki or kite	3	136	1.01	0.32	1.01
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	9614	0.27	12.60	0.27
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	94246	0.17	132.87	0.18
Long-line including set line, contiki or kite	7	446	1.05	0.57	1.05
Net (not including landing net used if caught on line)	7	357	0.79	0.46	0.79
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	52	1.00	0.07	1.00
Some other method	7	0		0.00	
Total	7	95101	0.19	133.96	0.19
Rod or line (not long line)	8	85978	0.20	139.77	0.19
Long-line including set line, contiki or kite	8	5532	0.32	9.09	0.32
Net (not including landing net used if caught on line)	8	9269	0.43	13.74	0.42
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	100779	0.18	162.60	0.17
Rod or line (not long line)	9	167084	0.14	266.84	0.14
Long-line including set line, contiki or kite	9	7940	0.50	13.21	0.50
Net (not including landing net used if caught on line)	9	6284	0.58	9.54	0.56
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	181309	0.14	289.59	0.14

16.3 Kahawai Harvest By Platform And QMA

National Panel Survey 2011–12 - Kahawai Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	KAH 1	379276	0.12	574.06	0.12
Larger motor boat or launch	KAH 1	33531	0.14	50.50	0.14
Trailer yacht	KAH 1	477	0.52	0.75	0.52
Larger yacht or keeler	KAH 1	8199	0.31	12.19	0.31
Kayak, canoe, or rowboat	KAH 1	41560	0.19	61.70	0.19
Off land, including beach, rocks or jetty	KAH 1	170856	0.11	252.59	0.11
Something else	KAH 1	3926	0.62	5.93	0.63
Total	KAH 1	637620	0.07	957.71	0.07
Trailer motor boat	KAH 2	71445	0.20	112.06	0.20
Larger motor boat or launch	KAH 2	4031	0.38	6.34	0.38
Trailer yacht	KAH 2	0		0.00	
Larger yacht or keeler	KAH 2	162	1.02	0.26	1.02
Kayak, canoe, or rowboat	KAH 2	5835	0.46	9.24	0.46
Off land, including beach, rocks or jetty	KAH 2	63788	0.34	99.78	0.35
Something else	KAH 2	437	0.61	0.69	0.61
Total	KAH 2	145655	0.12	228.37	0.12
Trailer motor boat	KAH 3	46471	0.50	64.62	0.52
Larger motor boat or launch	KAH 3	6711	0.31	9.92	0.31
Trailer yacht	KAH 3	159	1.04	0.20	1.04
Larger yacht or keeler	KAH 3	998	0.52	1.76	0.58
Kayak, canoe, or rowboat	KAH 3	3655	0.72	4.67	0.72
Off land, including beach, rocks or jetty	KAH 3	44922	0.27	62.47	0.27
Something else	KAH 3	1798	0.69	2.91	0.67
Total	KAH 3	104780	0.18	146.57	0.18
Trailer motor boat	KAH 8	139710	0.20	225.56	0.20
Larger motor boat or launch	KAH 8	26802	0.48	42.89	0.47
Trailer yacht	KAH 8	339	1.01	0.56	1.01
Larger yacht or keeler	KAH 8	323	1.02	0.54	1.02
Kayak, canoe, or rowboat	KAH 8	5750	0.30	9.45	0.31
Off land, including beach, rocks or jetty	KAH 8	107885	0.18	171.05	0.17
Something else	KAH 8	1280	0.75	2.13	0.75
Total	KAH 8	282101	0.11	452.19	0.11

16.4 Kahawai Harvest By Method And QMA

National Panel Survey 2011–12 - Kahawai Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	KAH 1	602995	0.07	905.76	0.07
Long-line including set line, contiki or kite	KAH 1	22867	0.26	34.15	0.27
Net (not including landing net used if caught on line)	KAH 1	10110	0.41	14.99	0.40
Pot (eg. for crayfish)	KAH 1	0		0.00	
Dredge, grapple or rake	KAH 1	0		0.00	
Hand gather or floundering from shore	KAH 1	0		0.00	
Hand gather by diving	KAH 1	0		0.00	
Spearfishing	KAH 1	1852	2.48	2.80	2.35
Some other method	KAH 1	0		0.00	
Total	KAH 1	637620	0.07	957.71	0.07
Rod or line (not long line)	KAH 2	137024	0.22	214.83	0.23
Long-line including set line, contiki or kite	KAH 2	5734	0.48	8.92	0.45
Net (not including landing net used if caught on line)	KAH 2	2738	0.70	4.33	0.70
Pot (eg. for crayfish)	KAH 2	0		0.00	
Dredge, grapple or rake	KAH 2	0		0.00	
Hand gather or floundering from shore	KAH 2	0		0.00	
Hand gather by diving	KAH 2	0		0.00	
Spearfishing	KAH 2	0		0.00	
Some other method	KAH 2	203	0.72	0.29	0.72
Total	KAH 2	145655	0.12	228.37	0.12
Rod or line (not long line)	KAH 3	103723	0.15	145.15	0.15
Long-line including set line, contiki or kite	KAH 3	582	0.84	0.89	0.77
Net (not including landing net used if caught on line)	KAH 3	357	0.55	0.46	0.55
Pot (eg. for crayfish)	KAH 3	0		0.00	
Dredge, grapple or rake	KAH 3	0		0.00	
Hand gather or floundering from shore	KAH 3	0		0.00	
Hand gather by diving	KAH 3	0		0.00	
Spearfishing	KAH 3	52	1.00	0.07	1.00
Some other method	KAH 3	0		0.00	
Total	KAH 3	104780	0.18	146.57	0.18
Rod or line (not long line)	KAH 8	253062	0.12	406.60	0.12
Long-line including set line, contiki or kite	KAH 8	13473	0.26	22.30	0.27
Net (not including landing net used if caught on line)	KAH 8	15554	0.45	23.29	0.42
Pot (eg. for crayfish)	KAH 8	0		0.00	
Dredge, grapple or rake	KAH 8	0		0.00	
Hand gather or floundering from shore	KAH 8	0		0.00	
Hand gather by diving	KAH 8	0		0.00	
Spearfishing	KAH 8	0		0.00	
Some other method	KAH 8	0		0.00	
Total	KAH 8	282101	0.11	452.19	0.11

17. BLUE COD HARVEST ESTIMATES

17.1 Blue Cod Harvest By Platform And FMA

National Panel Survey 2011–12 – Blue Cod Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	10628	0.46	4.57	0.49
Larger motor boat or launch	1	2761	0.38	1.17	0.37
Trailer yacht	1	121	1.00	0.05	1.00
Larger yacht or keeler	1	0		0.00	
Kayak, canoe, or rowboat	1	1191	0.59	0.54	0.59
Off land, including beach, rocks or jetty	1	785	0.51	0.35	0.51
Something else	1	0		0.00	
Total	1	15485	0.21	6.68	0.21
Trailer motor boat	2	47347	0.27	23.07	0.27
Larger motor boat or launch	2	4649	0.47	2.26	0.47
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	1630	2.27	0.79	2.27
Off land, including beach, rocks or jetty	2	3645	0.34	1.78	0.34
Something else	2	0		0.00	
Total	2	57271	0.19	27.90	0.19
Trailer motor boat	3	192969	0.22	92.51	0.22
Larger motor boat or launch	3	47553	0.29	22.80	0.29
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	451	0.71	0.22	0.71
Off land, including beach, rocks or jetty	3	7469	0.48	3.58	0.48
Something else	3	246	1.00	0.12	1.00
Total	3	248687	0.18	119.22	0.18
Trailer motor boat	5	54513	0.64	32.91	0.63
Larger motor boat or launch	5	25625	0.77	15.37	0.77
Trailer yacht	5	242	1.03	0.15	1.03
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	1454	1.02	0.90	1.02
Off land, including beach, rocks or jetty	5	2143	0.66	1.30	0.65
Something else	5	150	1.02	0.09	1.02
Total	5	84129	0.24	50.72	0.23
Trailer motor boat	7	139830	0.19	59.30	0.19
Larger motor boat or launch	7	27197	0.30	11.70	0.29
Trailer yacht	7	1264	0.73	0.53	0.73
Larger yacht or keeler	7	2044	0.69	0.85	0.69
Kayak, canoe, or rowboat	7	4449	0.92	1.88	0.91
Off land, including beach, rocks or jetty	7	3955	0.52	1.74	0.52
Something else	7	1819	0.90	0.76	0.89
Total	7	180558	0.17	76.76	0.17
Trailer motor boat	8	84183	0.27	45.48	0.27
Larger motor boat or launch	8	3737	0.38	2.02	0.38
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	1305	0.99	0.71	0.99
Off land, including beach, rocks or jetty	8	3993	0.60	2.16	0.60
Something else	8	0		0.00	
Total	8	93218	0.36	50.36	0.36
Trailer motor boat	9	3202	0.44	1.43	0.42
Larger motor boat or launch	9	0		0.00	
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	0		0.00	
Something else	9	0		0.00	
Total	9	3202	0.44	1.43	0.42

17.2 Blue Cod Harvest By Method And FMA

National Panel Survey 2011–12 – Blue Cod Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	15376	0.40	6.63	0.31
Long-line including set line, contiki or kite	1	109	0.66	0.04	0.62
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	15485	0.21	6.68	0.21
Rod or line (not long line)	2	55799	0.20	27.18	0.20
Long-line including set line, contiki or kite	2	643	1.06	0.31	1.06
Net (not including landing net used if caught on line)	2	585	1.01	0.28	1.01
Pot (eg. for crayfish)	2	131	1.02	0.06	1.02
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	113	1.02	0.05	1.02
Some other method	2	0		0.00	
Total	2	57271	0.19	27.90	0.19
Rod or line (not long line)	3	247854	0.27	118.82	0.27
Long-line including set line, contiki or kite	3	760	0.72	0.36	0.72
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	73	1.01	0.04	1.01
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	248687	0.18	119.22	0.18
Rod or line (not long line)	5	83520	0.25	50.34	0.25
Long-line including set line, contiki or kite	5	124	1.01	0.08	1.01
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	485	1.02	0.30	1.02
Some other method	5	0		0.00	
Total	5	84129	0.24	50.72	0.23
Rod or line (not long line)	7	180033	0.15	76.54	0.15
Long-line including set line, contiki or kite	7	244	0.93	0.10	0.93
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	282	0.73	0.12	0.73
Some other method	7	0		0.00	
Total	7	180558	0.17	76.76	0.17
Rod or line (not long line)	8	92679	0.24	50.07	0.24
Long-line including set line, contiki or kite	8	466	0.89	0.25	0.89
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	73	1.01	0.04	1.01
Some other method	8	0		0.00	
Total	8	93218	0.36	50.36	0.36
Rod or line (not long line)	9	3202	0.44	1.43	0.42
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	3202	0.44	1.43	0.42

17.3 Blue Cod Harvest By Platform And QMA

National Panel Survey 2011–12 – Blue Cod Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	BCO 1	12979	0.23	5.53	0.23
Larger motor boat or launch	BCO 1	2761	0.37	1.17	0.38
Trailer yacht	BCO 1	121	1.00	0.05	1.00
Larger yacht or keeler	BCO 1	0		0.00	
Kayak, canoe, or rowboat	BCO 1	1191	0.54	0.54	0.54
Off land, including beach, rocks or jetty	BCO 1	785	0.51	0.35	0.51
Something else	BCO 1	0		0.00	
Total	BCO 1	17837	0.20	7.65	0.20
Trailer motor boat	BCO 2	47347	0.26	23.07	0.26
Larger motor boat or launch	BCO 2	4649	0.29	2.26	0.29
Trailer yacht	BCO 2	0		0.00	
Larger yacht or keeler	BCO 2	0		0.00	
Kayak, canoe, or rowboat	BCO 2	1630	2.27	0.79	2.27
Off land, including beach, rocks or jetty	BCO 2	3645	0.61	1.78	0.61
Something else	BCO 2	0		0.00	
Total	BCO 2	57257	0.19	27.90	0.19
Trailer motor boat	BCO 3	192969	0.22	92.51	0.22
Larger motor boat or launch	BCO 3	47553	0.29	22.80	0.29
Trailer yacht	BCO 3	0		0.00	
Larger yacht or keeler	BCO 3	0		0.00	
Kayak, canoe, or rowboat	BCO 3	451	0.71	0.22	0.71
Off land, including beach, rocks or jetty	BCO 3	7469	0.66	3.58	0.66
Something else	BCO 3	246	1.00	0.12	1.00
Total	BCO 3	237869	0.18	119.22	0.18
Trailer motor boat	BCO 5	54513	0.26	32.91	0.26
Larger motor boat or launch	BCO 5	25625	0.48	15.37	0.49
Trailer yacht	BCO 5	242	1.03	0.15	1.03
Larger yacht or keeler	BCO 5	0		0.00	
Kayak, canoe, or rowboat	BCO 5	1454	1.02	0.90	1.02
Off land, including beach, rocks or jetty	BCO 5	2143	0.59	1.30	0.58
Something else	BCO 5	150	1.02	0.09	1.02
Total	BCO 5	84140	0.24	50.72	0.23
Trailer motor boat	BCO 7	139830	0.17	59.30	0.16
Larger motor boat or launch	BCO 7	27197	0.23	11.70	0.23
Trailer yacht	BCO 7	1264	0.73	0.53	0.73
Larger yacht or keeler	BCO 7	2044	0.69	0.85	0.69
Kayak, canoe, or rowboat	BCO 7	4449	0.75	1.88	0.74
Off land, including beach, rocks or jetty	BCO 7	3955	0.83	1.74	0.78
Something else	BCO 7	1819	0.90	0.76	0.89
Total	BCO 7	180794	0.17	76.76	0.17
Trailer motor boat	BCO 8	85035	0.25	45.94	0.25
Larger motor boat or launch	BCO 8	3737	0.42	2.02	0.42
Trailer yacht	BCO 8	0		0.00	
Larger yacht or keeler	BCO 8	0		0.00	
Kayak, canoe, or rowboat	BCO 8	1305	0.99	0.71	0.99
Off land, including beach, rocks or jetty	BCO 8	3993	0.60	2.16	0.60
Something else	BCO 8	0		0.00	
Total	BCO 8	94049	0.36	50.82	0.35

17.4 Blue Cod Harvest By Method And QMA

National Panel Survey 2011–12 – Blue Cod Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	BCO 1	17726	0.18	7.60	0.17
Long-line including set line, contiki or kite	BCO 1	109	0.81	0.04	0.75
Net (not including landing net used if caught on line)	BCO 1	0		0.00	
Pot (eg. for crayfish)	BCO 1	0		0.00	
Dredge, grapple or rake	BCO 1	0		0.00	
Hand gather or floundering from shore	BCO 1	0		0.00	
Hand gather by diving	BCO 1	0		0.00	
Spearfishing	BCO 1	0		0.00	
Some other method	BCO 1	0		0.00	
Total	BCO 1	17837	0.20	7.65	0.20
Rod or line (not long line)	BCO 2	55799	0.36	27.18	0.36
Long-line including set line, contiki or kite	BCO 2	643	1.06	0.31	1.06
Net (not including landing net used if caught on line)	BCO 2	585	1.01	0.28	1.01
Pot (eg. for crayfish)	BCO 2	131	1.02	0.06	1.02
Dredge, grapple or rake	BCO 2	0		0.00	
Hand gather or floundering from shore	BCO 2	0		0.00	
Hand gather by diving	BCO 2	0		0.00	
Spearfishing	BCO 2	113	1.02	0.05	1.02
Some other method	BCO 2	0		0.00	
Total	BCO 2	57257	0.19	27.90	0.19
Rod or line (not long line)	BCO 3	247854	0.25	118.82	0.25
Long-line including set line, contiki or kite	BCO 3	760	0.72	0.36	0.72
Net (not including landing net used if caught on line)	BCO 3	0		0.00	
Pot (eg. for crayfish)	BCO 3	73	1.01	0.04	1.01
Dredge, grapple or rake	BCO 3	0		0.00	
Hand gather or floundering from shore	BCO 3	0		0.00	
Hand gather by diving	BCO 3	0		0.00	
Spearfishing	BCO 3	0		0.00	
Some other method	BCO 3	0		0.00	
Total	BCO 3	237869	0.18	119.22	0.18
Rod or line (not long line)	BCO 5	83520	0.31	50.34	0.30
Long-line including set line, contiki or kite	BCO 5	124	1.01	0.08	1.01
Net (not including landing net used if caught on line)	BCO 5	0		0.00	
Pot (eg. for crayfish)	BCO 5	0		0.00	
Dredge, grapple or rake	BCO 5	0		0.00	
Hand gather or floundering from shore	BCO 5	0		0.00	
Hand gather by diving	BCO 5	0		0.00	
Spearfishing	BCO 5	485	1.02	0.30	1.02
Some other method	BCO 5	0		0.00	
Total	BCO 5	84140	0.24	50.72	0.23
Rod or line (not long line)	BCO 7	180033	0.14	76.54	0.14
Long-line including set line, contiki or kite	BCO 7	244	0.75	0.10	0.75
Net (not including landing net used if caught on line)	BCO 7	0		0.00	
Pot (eg. for crayfish)	BCO 7	0		0.00	
Dredge, grapple or rake	BCO 7	0		0.00	
Hand gather or floundering from shore	BCO 7	0		0.00	
Hand gather by diving	BCO 7	0		0.00	
Spearfishing	BCO 7	282	0.73	0.12	0.73
Some other method	BCO 7	0		0.00	
Total	BCO 7	180794	0.17	76.76	0.17
Rod or line (not long line)	BCO 8	93530	0.25	50.53	0.25
Long-line including set line, contiki or kite	BCO 8	466	0.89	0.25	0.89
Net (not including landing net used if caught on line)	BCO 8	0		0.00	
Pot (eg. for crayfish)	BCO 8	0		0.00	
Dredge, grapple or rake	BCO 8	0		0.00	
Hand gather or floundering from shore	BCO 8	0		0.00	
Hand gather by diving	BCO 8	0		0.00	
Spearfishing	BCO 8	73	1.01	0.04	1.01
Some other method	BCO 8	0		0.00	
Total	BCO 8	94049	0.36	50.82	0.35

18. RED GURNARD HARVEST ESTIMATES

18.1 Red Gurnard Harvest By Platform And FMA

National Panel Survey 2011–12 – Red Gurnard Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	98597	0.14	37.06	0.15
Larger motor boat or launch	1	7270	0.28	2.65	0.29
Trailer yacht	1	52	1.01	0.02	1.01
Larger yacht or keeler	1	580	0.62	0.22	0.61
Kayak, canoe, or rowboat	1	9211	0.76	3.56	0.74
Off land, including beach, rocks or jetty	1	12684	0.23	5.00	0.23
Something else	1	409	0.79	0.15	0.80
Total	1	128802	0.16	48.66	0.16
Trailer motor boat	2	50520	0.23	28.79	0.23
Larger motor boat or launch	2	7447	0.80	4.21	0.81
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	653	0.72	0.37	0.72
Off land, including beach, rocks or jetty	2	7934	0.31	4.74	0.30
Something else	2	106	1.02	0.06	1.02
Total	2	66661	0.20	38.16	0.20
Trailer motor boat	3	4020	0.52	1.75	0.52
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	585	1.01	0.26	1.01
Something else	3	0		0.00	
Total	3	4605	0.62	2.01	0.62
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	18537	0.28	9.78	0.28
Larger motor boat or launch	7	1821	0.47	0.96	0.47
Trailer yacht	7	136	1.05	0.07	1.05
Larger yacht or keeler	7	607	0.64	0.32	0.64
Kayak, canoe, or rowboat	7	302	0.74	0.16	0.74
Off land, including beach, rocks or jetty	7	835	1.18	0.44	1.18
Something else	7	1416	0.72	0.75	0.72
Total	7	23653	0.24	12.48	0.24
Trailer motor boat	8	64438	0.25	32.21	0.25
Larger motor boat or launch	8	1649	0.71	0.83	0.71
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	16704	0.55	8.27	0.55
Off land, including beach, rocks or jetty	8	10866	0.29	5.44	0.29
Something else	8	0		0.00	
Total	8	93656	0.23	46.75	0.23
Trailer motor boat	9	92424	0.24	44.55	0.24
Larger motor boat or launch	9	10658	0.43	5.08	0.43
Trailer yacht	9	169	1.01	0.08	1.01
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	129	1.00	0.06	1.00
Off land, including beach, rocks or jetty	9	9656	0.47	4.68	0.48
Something else	9	119	1.01	0.06	1.01
Total	9	113154	0.24	54.52	0.24

18.2 Red Gurnard Harvest By Method And FMA

National Panel Survey 2011–12 – Red Gurnard Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	102812	0.15	38.47	0.16
Long-line including set line, contiki or kite	1	25825	0.30	10.13	0.29
Net (not including landing net used if caught on line)	1	165	0.74	0.07	0.74
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	128802	0.16	48.66	0.16
Rod or line (not long line)	2	63644	0.19	36.45	0.19
Long-line including set line, contiki or kite	2	2417	0.44	1.38	0.43
Net (not including landing net used if caught on line)	2	600	0.94	0.34	0.94
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	66661	0.20	38.16	0.20
Rod or line (not long line)	3	4156	0.75	1.81	0.75
Long-line including set line, contiki or kite	3	449	1.01	0.20	1.01
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	4605	0.62	2.01	0.62
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	22986	0.20	12.12	0.20
Long-line including set line, contiki or kite	7	492	0.77	0.26	0.77
Net (not including landing net used if caught on line)	7	175	1.15	0.09	1.15
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	23653	0.24	12.48	0.24
Rod or line (not long line)	8	81248	0.27	40.52	0.27
Long-line including set line, contiki or kite	8	11947	0.43	6.02	0.43
Net (not including landing net used if caught on line)	8	461	0.84	0.21	0.82
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	93656	0.23	46.75	0.23
Rod or line (not long line)	9	111264	0.19	53.61	0.19
Long-line including set line, contiki or kite	9	1890	0.51	0.91	0.51
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	113154	0.24	54.52	0.24

18.3 Red Gurnard Harvest By Platform And QMA

National Panel Survey 2011–12 – Red Gurnard Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	GUR 1	191021	0.16	81.61	0.16
Larger motor boat or launch	GUR 1	17928	0.25	7.73	0.26
Trailer yacht	GUR 1	221	0.81	0.10	0.82
Larger yacht or keeler	GUR 1	580	0.73	0.22	0.74
Kayak, canoe, or rowboat	GUR 1	9340	1.37	3.62	1.34
Off land, including beach, rocks or jetty	GUR 1	22339	0.22	9.68	0.24
Something else	GUR 1	527	0.68	0.21	0.65
Total	GUR 1	241857	0.14	103.18	0.15
Trailer motor boat	GUR 2	50520	0.24	28.79	0.24
Larger motor boat or launch	GUR 2	7447	0.52	4.21	0.51
Trailer yacht	GUR 2	0		0.00	
Larger yacht or keeler	GUR 2	0		0.00	
Kayak, canoe, or rowboat	GUR 2	653	0.72	0.37	0.72
Off land, including beach, rocks or jetty	GUR 2	7934	0.27	4.74	0.27
Something else	GUR 2	106	1.02	0.06	1.02
Total	GUR 2	66604	0.20	38.16	0.20
Trailer motor boat	GUR 3	4020	0.52	1.75	0.52
Larger motor boat or launch	GUR 3	0		0.00	
Trailer yacht	GUR 3	0		0.00	
Larger yacht or keeler	GUR 3	0		0.00	
Kayak, canoe, or rowboat	GUR 3	0		0.00	
Off land, including beach, rocks or jetty	GUR 3	585	1.01	0.26	1.01
Something else	GUR 3	0		0.00	
Total	GUR 3	4635	0.62	2.01	0.62
Trailer motor boat	GUR 7	18537	0.28	9.78	0.28
Larger motor boat or launch	GUR 7	1821	0.47	0.96	0.47
Trailer yacht	GUR 7	136	1.05	0.07	1.05
Larger yacht or keeler	GUR 7	607	0.52	0.32	0.52
Kayak, canoe, or rowboat	GUR 7	302	0.74	0.16	0.74
Off land, including beach, rocks or jetty	GUR 7	835	0.96	0.44	0.96
Something else	GUR 7	1416	0.95	0.75	0.95
Total	GUR 7	23692	0.24	12.48	0.24
Trailer motor boat	GUR 8	64438	0.23	32.21	0.23
Larger motor boat or launch	GUR 8	1649	0.71	0.83	0.71
Trailer yacht	GUR 8	0		0.00	
Larger yacht or keeler	GUR 8	0		0.00	
Kayak, canoe, or rowboat	GUR 8	16704	0.55	8.27	0.55
Off land, including beach, rocks or jetty	GUR 8	10866	0.29	5.44	0.29
Something else	GUR 8	0		0.00	
Total	GUR 8	93673	0.23	46.75	0.23

18.4 Red Gurnard Harvest By Method And QMA

National Panel Survey 2011–12 – Red Gurnard Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	GUR 1	214077	0.13	92.08	0.13
Long-line including set line, contiki or kite	GUR 1	27715	0.48	11.04	0.46
Net (not including landing net used if caught on line)	GUR 1	165	0.74	0.07	0.74
Pot (eg. for crayfish)	GUR 1	0		0.00	
Dredge, grapple or rake	GUR 1	0		0.00	
Hand gather or floundering from shore	GUR 1	0		0.00	
Hand gather by diving	GUR 1	0		0.00	
Spearfishing	GUR 1	0		0.00	
Some other method	GUR 1	0		0.00	
Total	GUR 1	241857	0.14	103.18	0.15
Rod or line (not long line)	GUR 2	63644	0.19	36.45	0.19
Long-line including set line, contiki or kite	GUR 2	2417	0.31	1.38	0.31
Net (not including landing net used if caught on line)	GUR 2	600	0.94	0.34	0.94
Pot (eg. for crayfish)	GUR 2	0		0.00	
Dredge, grapple or rake	GUR 2	0		0.00	
Hand gather or floundering from shore	GUR 2	0		0.00	
Hand gather by diving	GUR 2	0		0.00	
Spearfishing	GUR 2	0		0.00	
Some other method	GUR 2	0		0.00	
Total	GUR 2	66604	0.20	38.16	0.20
Rod or line (not long line)	GUR 3	4156	0.53	1.81	0.53
Long-line including set line, contiki or kite	GUR 3	449	1.01	0.20	1.01
Net (not including landing net used if caught on line)	GUR 3	0		0.00	
Pot (eg. for crayfish)	GUR 3	0		0.00	
Dredge, grapple or rake	GUR 3	0		0.00	
Hand gather or floundering from shore	GUR 3	0		0.00	
Hand gather by diving	GUR 3	0		0.00	
Spearfishing	GUR 3	0		0.00	
Some other method	GUR 3	0		0.00	
Total	GUR 3	4635	0.62	2.01	0.62
Rod or line (not long line)	GUR 7	22986	0.24	12.12	0.24
Long-line including set line, contiki or kite	GUR 7	492	1.24	0.26	1.24
Net (not including landing net used if caught on line)	GUR 7	175	0.71	0.09	0.71
Pot (eg. for crayfish)	GUR 7	0		0.00	
Dredge, grapple or rake	GUR 7	0		0.00	
Hand gather or floundering from shore	GUR 7	0		0.00	
Hand gather by diving	GUR 7	0		0.00	
Spearfishing	GUR 7	0		0.00	
Some other method	GUR 7	0		0.00	
Total	GUR 7	23692	0.24	12.48	0.24
Rod or line (not long line)	GUR 8	81248	0.24	40.52	0.24
Long-line including set line, contiki or kite	GUR 8	11947	0.62	6.02	0.62
Net (not including landing net used if caught on line)	GUR 8	461	0.84	0.21	0.82
Pot (eg. for crayfish)	GUR 8	0		0.00	
Dredge, grapple or rake	GUR 8	0		0.00	
Hand gather or floundering from shore	GUR 8	0		0.00	
Hand gather by diving	GUR 8	0		0.00	
Spearfishing	GUR 8	0		0.00	
Some other method	GUR 8	0		0.00	
Total	GUR 8	93673	0.23	46.75	0.23

19. TARAHIKI HARVEST ESTIMATES

19.1 Tarakihi Harvest By Platform And FMA

National Panel Survey 2011–12 – Tarakihi Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	125179	0.22	87.92	0.22
Larger motor boat or launch	1	34074	0.34	23.96	0.34
Trailer yacht	1	0		0.00	
Larger yacht or keeler	1	0		0.00	
Kayak, canoe, or rowboat	1	398	0.43	0.29	0.43
Off land, including beach, rocks or jetty	1	762	0.40	0.53	0.40
Something else	1	0		0.00	
Total	1	160414	0.22	112.69	0.22
Trailer motor boat	2	93111	0.20	60.85	0.20
Larger motor boat or launch	2	11379	0.36	7.48	0.36
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	1409	1.01	0.90	1.01
Off land, including beach, rocks or jetty	2	4704	0.77	3.03	0.77
Something else	2	318	1.01	0.20	1.01
Total	2	110920	0.22	72.46	0.22
Trailer motor boat	3	3521	0.80	2.39	0.80
Larger motor boat or launch	3	639	0.57	0.43	0.57
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	47	1.00	0.03	1.00
Something else	3	0		0.00	
Total	3	4208	0.42	2.86	0.42
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	141	0.73	0.10	0.73
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	141	0.73	0.10	0.73
Trailer motor boat	7	41853	0.45	20.27	0.45
Larger motor boat or launch	7	4328	0.69	2.10	0.69
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	215	1.05	0.10	1.05
Kayak, canoe, or rowboat	7	1345	0.64	0.65	0.64
Off land, including beach, rocks or jetty	7	0		0.00	
Something else	7	365	1.01	0.18	1.01
Total	7	48107	0.38	23.30	0.38
Trailer motor boat	8	27328	0.33	20.26	0.33
Larger motor boat or launch	8	2847	0.36	1.99	0.36
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	201	0.83	0.14	0.83
Off land, including beach, rocks or jetty	8	964	0.70	0.82	0.70
Something else	8	0		0.00	
Total	8	31340	0.29	23.21	0.30
Trailer motor boat	9	4222	0.94	2.87	0.94
Larger motor boat or launch	9	704	0.68	0.48	0.68
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	1200	0.73	0.81	0.73
Something else	9	0		0.00	
Total	9	6126	0.48	4.16	0.48

19.2 Tarakihi Harvest By Method And FMA

National Panel Survey 2011–12 – Tarakihi Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	158817	0.20	111.58	0.20
Long-line including set line, contiki or kite	1	111	0.87	0.08	0.89
Net (not including landing net used if caught on line)	1	51	1.00	0.04	1.00
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	1435	1.01	1.00	1.01
Some other method	1	0		0.00	
Total	1	160414	0.22	112.69	0.22
Rod or line (not long line)	2	110483	0.20	72.18	0.20
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	437	0.71	0.28	0.71
Some other method	2	0		0.00	
Total	2	110920	0.22	72.46	0.22
Rod or line (not long line)	3	4208	0.87	2.86	0.87
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	4208	0.42	2.86	0.42
Rod or line (not long line)	5	141	0.73	0.10	0.73
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	141	0.73	0.10	0.73
Rod or line (not long line)	7	48107	0.27	23.30	0.27
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	48107	0.38	23.30	0.38
Rod or line (not long line)	8	30599	0.28	22.70	0.28
Long-line including set line, contiki or kite	8	33	1.01	0.02	1.01
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	708	1.01	0.48	1.01
Some other method	8	0		0.00	
Total	8	31340	0.29	23.21	0.30
Rod or line (not long line)	9	4071	0.52	2.76	0.52
Long-line including set line, contiki or kite	9	2055	1.02	1.40	1.02
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	6126	0.48	4.16	0.48

19.3 Tarakihi Harvest By Platform And QMA

National Panel Survey 2011–12 – Tarakihi Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	TAR 1	129401	0.22	90.78	0.22
Larger motor boat or launch	TAR 1	34779	0.29	24.43	0.28
Trailer yacht	TAR 1	0		0.00	
Larger yacht or keeler	TAR 1	0		0.00	
Kayak, canoe, or rowboat	TAR 1	398	0.43	0.29	0.43
Off land, including beach, rocks or jetty	TAR 1	1962	0.59	1.35	0.58
Something else	TAR 1	0		0.00	
Total	TAR 1	166449	0.22	116.85	0.22
Trailer motor boat	TAR 2	93111	0.22	60.85	0.22
Larger motor boat or launch	TAR 2	11379	0.34	7.48	0.34
Trailer yacht	TAR 2	0		0.00	
Larger yacht or keeler	TAR 2	0		0.00	
Kayak, canoe, or rowboat	TAR 2	1409	1.01	0.90	1.01
Off land, including beach, rocks or jetty	TAR 2	4704	0.93	3.03	0.92
Something else	TAR 2	318	1.01	0.20	1.01
Total	TAR 2	110870	0.22	72.46	0.22
Trailer motor boat	TAR 3	3521	0.42	2.39	0.42
Larger motor boat or launch	TAR 3	639	0.52	0.43	0.52
Trailer yacht	TAR 3	0		0.00	
Larger yacht or keeler	TAR 3	0		0.00	
Kayak, canoe, or rowboat	TAR 3	0		0.00	
Off land, including beach, rocks or jetty	TAR 3	47	1.00	0.03	1.00
Something else	TAR 3	0		0.00	
Total	TAR 3	4229	0.42	2.86	0.42
Trailer motor boat	TAR 5	0		0.00	
Larger motor boat or launch	TAR 5	141	0.73	0.10	0.73
Trailer yacht	TAR 5	0		0.00	
Larger yacht or keeler	TAR 5	0		0.00	
Kayak, canoe, or rowboat	TAR 5	0		0.00	
Off land, including beach, rocks or jetty	TAR 5	0		0.00	
Something else	TAR 5	0		0.00	
Total	TAR 5	141	0.73	0.10	0.73
Trailer motor boat	TAR 7	41853	0.36	20.27	0.36
Larger motor boat or launch	TAR 7	4328	0.59	2.10	0.59
Trailer yacht	TAR 7	0		0.00	
Larger yacht or keeler	TAR 7	215	1.05	0.10	1.05
Kayak, canoe, or rowboat	TAR 7	1345	0.72	0.65	0.72
Off land, including beach, rocks or jetty	TAR 7	0		0.00	
Something else	TAR 7	365	1.01	0.18	1.01
Total	TAR 7	48160	0.38	23.30	0.38
Trailer motor boat	TAR 8	27328	0.28	20.26	0.28
Larger motor boat or launch	TAR 8	2847	0.41	1.99	0.41
Trailer yacht	TAR 8	0		0.00	
Larger yacht or keeler	TAR 8	0		0.00	
Kayak, canoe, or rowboat	TAR 8	201	0.83	0.14	0.83
Off land, including beach, rocks or jetty	TAR 8	964	0.90	0.82	0.90
Something else	TAR 8	0		0.00	
Total	TAR 8	31320	0.29	23.21	0.30

19.4 Tarakihi Harvest By Method And QMA

National Panel Survey 2011–12 – Tarakihi Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	TAR 1	162888	0.22	114.35	0.22
Long-line including set line, contiki or kite	TAR 1	2167	0.96	1.47	0.96
Net (not including landing net used if caught on line)	TAR 1	51	1.00	0.04	1.00
Pot (eg. for crayfish)	TAR 1	0		0.00	
Dredge, grapple or rake	TAR 1	0		0.00	
Hand gather or floundering from shore	TAR 1	0		0.00	
Hand gather by diving	TAR 1	0		0.00	
Spearfishing	TAR 1	1435	1.01	1.00	1.01
Some other method	TAR 1	0		0.00	
Total	TAR 1	166449	0.22	116.85	0.22
Rod or line (not long line)	TAR 2	110483	0.36	72.18	0.35
Long-line including set line, contiki or kite	TAR 2	0		0.00	
Net (not including landing net used if caught on line)	TAR 2	0		0.00	
Pot (eg. for crayfish)	TAR 2	0		0.00	
Dredge, grapple or rake	TAR 2	0		0.00	
Hand gather or floundering from shore	TAR 2	0		0.00	
Hand gather by diving	TAR 2	0		0.00	
Spearfishing	TAR 2	437	0.71	0.28	0.71
Some other method	TAR 2	0		0.00	
Total	TAR 2	110870	0.22	72.46	0.22
Rod or line (not long line)	TAR 3	4208	0.35	2.86	0.35
Long-line including set line, contiki or kite	TAR 3	0		0.00	
Net (not including landing net used if caught on line)	TAR 3	0		0.00	
Pot (eg. for crayfish)	TAR 3	0		0.00	
Dredge, grapple or rake	TAR 3	0		0.00	
Hand gather or floundering from shore	TAR 3	0		0.00	
Hand gather by diving	TAR 3	0		0.00	
Spearfishing	TAR 3	0		0.00	
Some other method	TAR 3	0		0.00	
Total	TAR 3	4229	0.42	2.86	0.42
Rod or line (not long line)	TAR 5	141	0.73	0.10	0.73
Long-line including set line, contiki or kite	TAR 5	0		0.00	
Net (not including landing net used if caught on line)	TAR 5	0		0.00	
Pot (eg. for crayfish)	TAR 5	0		0.00	
Dredge, grapple or rake	TAR 5	0		0.00	
Hand gather or floundering from shore	TAR 5	0		0.00	
Hand gather by diving	TAR 5	0		0.00	
Spearfishing	TAR 5	0		0.00	
Some other method	TAR 5	0		0.00	
Total	TAR 5	141	0.73	0.10	0.73
Rod or line (not long line)	TAR 7	48107	0.29	23.30	0.29
Long-line including set line, contiki or kite	TAR 7	0		0.00	
Net (not including landing net used if caught on line)	TAR 7	0		0.00	
Pot (eg. for crayfish)	TAR 7	0		0.00	
Dredge, grapple or rake	TAR 7	0		0.00	
Hand gather or floundering from shore	TAR 7	0		0.00	
Hand gather by diving	TAR 7	0		0.00	
Spearfishing	TAR 7	0		0.00	
Some other method	TAR 7	0		0.00	
Total	TAR 7	48160	0.38	23.30	0.38
Rod or line (not long line)	TAR 8	30599	0.35	22.70	0.34
Long-line including set line, contiki or kite	TAR 8	33	1.01	0.02	1.01
Net (not including landing net used if caught on line)	TAR 8	0		0.00	
Pot (eg. for crayfish)	TAR 8	0		0.00	
Dredge, grapple or rake	TAR 8	0		0.00	
Hand gather or floundering from shore	TAR 8	0		0.00	
Hand gather by diving	TAR 8	0		0.00	
Spearfishing	TAR 8	708	1.01	0.48	1.01
Some other method	TAR 8	0		0.00	
Total	TAR 8	31320	0.29	23.21	0.30

20. TREVALLY HARVEST ESTIMATES

20.1 Trevally Harvest By Platform And FMA

National Panel Survey 2011–12 – Trevally Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	90012	0.12	109.97	0.12
Larger motor boat or launch	1	12872	0.22	15.00	0.23
Trailer yacht	1	63	1.00	0.07	1.00
Larger yacht or keeler	1	672	0.47	0.78	0.46
Kayak, canoe, or rowboat	1	11313	0.54	12.82	0.63
Off land, including beach, rocks or jetty	1	22378	0.29	23.55	0.24
Something else	1	2162	0.77	2.56	0.76
Total	1	139473	0.12	164.75	0.11
Trailer motor boat	2	5737	0.46	6.21	0.46
Larger motor boat or launch	2	2299	0.55	2.49	0.55
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	489	0.71	0.53	0.71
Off land, including beach, rocks or jetty	2	1784	0.42	1.93	0.42
Something else	2	0		0.00	
Total	2	10308	0.24	11.15	0.24
Trailer motor boat	3	859	0.72	1.08	0.73
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	0		0.00	
Something else	3	0		0.00	
Total	3	859	0.72	1.08	0.73
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	1338	0.63	1.87	0.63
Larger motor boat or launch	7	188	1.05	0.26	1.05
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	44	1.05	0.06	1.05
Off land, including beach, rocks or jetty	7	148	1.06	0.21	1.06
Something else	7	122	1.01	0.17	1.01
Total	7	1840	0.43	2.57	0.43
Trailer motor boat	8	4491	0.42	6.27	0.42
Larger motor boat or launch	8	0		0.00	
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	248	1.02	0.35	1.02
Off land, including beach, rocks or jetty	8	144	0.73	0.20	0.73
Something else	8	0		0.00	
Total	8	4883	0.32	6.81	0.32
Trailer motor boat	9	9985	0.26	13.93	0.26
Larger motor boat or launch	9	2428	0.73	3.39	0.73
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	3834	0.62	5.35	0.62
Something else	9	153	1.00	0.21	1.00
Total	9	16400	0.20	22.88	0.20

20.2 Trevally Harvest By Method And FMA

National Panel Survey 2011–12 – Trevally Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	133495	0.20	157.96	0.22
Long-line including set line, contiki or kite	1	1527	0.77	1.73	0.95
Net (not including landing net used if caught on line)	1	4450	0.74	5.07	0.83
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	139473	0.12	164.75	0.11
Rod or line (not long line)	2	9575	1.22	10.36	1.22
Long-line including set line, contiki or kite	2	263	1.02	0.28	1.02
Net (not including landing net used if caught on line)	2	470	0.84	0.51	0.84
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	10308	0.24	11.15	0.24
Rod or line (not long line)	3	859	0.72	1.08	0.73
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	859	0.72	1.08	0.73
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	1632	0.53	2.28	0.53
Long-line including set line, contiki or kite	7	208	1.06	0.29	1.06
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	1840	0.43	2.57	0.43
Rod or line (not long line)	8	4708	0.37	6.57	0.37
Long-line including set line, contiki or kite	8	57	1.01	0.08	1.01
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	118	1.01	0.16	1.01
Some other method	8	0		0.00	
Total	8	4883	0.32	6.81	0.32
Rod or line (not long line)	9	15949	0.21	22.25	0.21
Long-line including set line, contiki or kite	9	451	0.74	0.63	0.74
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	16400	0.20	22.88	0.20

20.3 Trevally Harvest By Platform And QMA

National Panel Survey 2011–12 – Trevally Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	TRE 1	90012	0.12	109.97	0.12
Larger motor boat or launch	TRE 1	12872	0.22	15.00	0.23
Trailer yacht	TRE 1	63	1.00	0.07	1.00
Larger yacht or keeler	TRE 1	672	0.47	0.78	0.46
Kayak, canoe, or rowboat	TRE 1	11313	0.54	12.82	0.63
Off land, including beach, rocks or jetty	TRE 1	22378	0.29	23.55	0.24
Something else	TRE 1	2162	0.77	2.56	0.76
Total	TRE 1	139418	0.12	164.75	0.11
Trailer motor boat	TRE 2	5737	0.46	6.21	0.46
Larger motor boat or launch	TRE 2	2299	0.55	2.49	0.55
Trailer yacht	TRE 2	0		0.00	
Larger yacht or keeler	TRE 2	0		0.00	
Kayak, canoe, or rowboat	TRE 2	489	0.71	0.53	0.71
Off land, including beach, rocks or jetty	TRE 2	1784	0.42	1.93	0.42
Something else	TRE 2	0		0.00	
Total	TRE 2	10309	0.24	11.15	0.24
Trailer motor boat	TRE 3	859	0.72	1.08	0.73
Larger motor boat or launch	TRE 3	0		0.00	
Trailer yacht	TRE 3	0		0.00	
Larger yacht or keeler	TRE 3	0		0.00	
Kayak, canoe, or rowboat	TRE 3	0		0.00	
Off land, including beach, rocks or jetty	TRE 3	0		0.00	
Something else	TRE 3	0		0.00	
Total	TRE 3	864	0.72	1.08	0.73
Trailer motor boat	TRE 7	15814	0.19	22.06	0.19
Larger motor boat or launch	TRE 7	2615	0.36	3.65	0.36
Trailer yacht	TRE 7	0		0.00	
Larger yacht or keeler	TRE 7	0		0.00	
Kayak, canoe, or rowboat	TRE 7	292	0.88	0.41	0.88
Off land, including beach, rocks or jetty	TRE 7	4127	0.29	5.76	0.29
Something else	TRE 7	275	0.72	0.38	0.72
Total	TRE 7	23118	0.16	32.26	0.16

20.4 Trevally Harvest By Method And QMA

National Panel Survey 2011–12 – Trevally Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	TRE 1	133495	0.41	157.96	0.47
Long-line including set line, contiki or kite	TRE 1	1527	0.79	1.73	0.96
Net (not including landing net used if caught on line)	TRE 1	4450	0.55	5.07	0.55
Pot (eg. for crayfish)	TRE 1	0		0.00	
Dredge, grapple or rake	TRE 1	0		0.00	
Hand gather or floundering from shore	TRE 1	0		0.00	
Hand gather by diving	TRE 1	0		0.00	
Spearfishing	TRE 1	0		0.00	
Some other method	TRE 1	0		0.00	
Total	TRE 1	139418	0.12	164.75	0.11
Rod or line (not long line)	TRE 2	9575	0.27	10.36	0.27
Long-line including set line, contiki or kite	TRE 2	263	1.02	0.28	1.02
Net (not including landing net used if caught on line)	TRE 2	470	0.91	0.51	0.91
Pot (eg. for crayfish)	TRE 2	0		0.00	
Dredge, grapple or rake	TRE 2	0		0.00	
Hand gather or floundering from shore	TRE 2	0		0.00	
Hand gather by diving	TRE 2	0		0.00	
Spearfishing	TRE 2	0		0.00	
Some other method	TRE 2	0		0.00	
Total	TRE 2	10309	0.24	11.15	0.24
Rod or line (not long line)	TRE 3	859	4.28	1.08	4.42
Long-line including set line, contiki or kite	TRE 3	0		0.00	
Net (not including landing net used if caught on line)	TRE 3	0		0.00	
Pot (eg. for crayfish)	TRE 3	0		0.00	
Dredge, grapple or rake	TRE 3	0		0.00	
Hand gather or floundering from shore	TRE 3	0		0.00	
Hand gather by diving	TRE 3	0		0.00	
Spearfishing	TRE 3	0		0.00	
Some other method	TRE 3	0		0.00	
Total	TRE 3	864	0.72	1.08	0.73
Rod or line (not long line)	TRE 7	22289	0.17	31.09	0.17
Long-line including set line, contiki or kite	TRE 7	716	0.80	1.00	0.80
Net (not including landing net used if caught on line)	TRE 7	0		0.00	
Pot (eg. for crayfish)	TRE 7	0		0.00	
Dredge, grapple or rake	TRE 7	0		0.00	
Hand gather or floundering from shore	TRE 7	0		0.00	
Hand gather by diving	TRE 7	0		0.00	
Spearfishing	TRE 7	118	1.01	0.16	1.01
Some other method	TRE 7	0		0.00	
Total	TRE 7	23118	0.16	32.26	0.16

21. KINGFISH HARVEST ESTIMATES

21.1 Kingfish Harvest By Platform And FMA

National Panel Survey 2011–12 – Kingfish Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	33711	0.81	346.68	0.81
Larger motor boat or launch	1	10703	0.28	110.10	0.28
Trailer yacht	1	255	0.80	2.58	0.80
Larger yacht or keeler	1	1855	0.83	19.31	0.84
Kayak, canoe, or rowboat	1	995	0.42	10.13	0.42
Off land, including beach, rocks or jetty	1	4332	0.27	44.44	0.27
Something else	1	205	0.77	2.08	0.77
Total	1	52056	0.13	535.30	0.13
Trailer motor boat	2	2985	0.28	29.90	0.29
Larger motor boat or launch	2	474	0.47	4.73	0.47
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	0		0.00	
Off land, including beach, rocks or jetty	2	565	0.62	5.97	0.61
Something else	2	0		0.00	
Total	2	4025	0.24	40.60	0.24
Trailer motor boat	3	0		0.00	
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	289	0.71	2.89	0.71
Something else	3	0		0.00	
Total	3	289	0.71	2.89	0.71
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	1801	0.41	17.97	0.41
Larger motor boat or launch	7	0		0.00	
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	77	1.06	0.77	1.06
Off land, including beach, rocks or jetty	7	200	1.05	1.99	1.05
Something else	7	0		0.00	
Total	7	2079	0.38	20.73	0.38
Trailer motor boat	8	1142	0.43	11.39	0.43
Larger motor boat or launch	8	0		0.00	
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	61	1.01	0.60	1.01
Something else	8	0		0.00	
Total	8	1202	0.42	11.99	0.42
Trailer motor boat	9	3707	0.34	37.06	0.34
Larger motor boat or launch	9	1046	0.35	10.59	0.35
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	296	0.68	2.95	0.68
Something else	9	0		0.00	
Total	9	5049	0.29	50.60	0.29

21.2 Kingfish Harvest By Method And FMA

National Panel Survey 2011–12 – Kingfish Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	48275	0.63	495.33	0.62
Long-line including set line, contiki or kite	1	1581	0.86	17.47	0.87
Net (not including landing net used if caught on line)	1	221	1.01	2.48	1.01
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	1979	0.44	20.02	0.44
Some other method	1	0		0.00	
Total	1	52056	0.13	535.30	0.13
Rod or line (not long line)	2	4025	0.23	40.60	0.23
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	4025	0.24	40.60	0.24
Rod or line (not long line)	3	289	1.54	2.89	1.54
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	289	0.71	2.89	0.71
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	1879	0.44	18.74	0.44
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	200	1.05	1.99	1.05
Some other method	7	0		0.00	
Total	7	2079	0.38	20.73	0.38
Rod or line (not long line)	8	958	0.50	9.55	0.50
Long-line including set line, contiki or kite	8	127	0.72	1.26	0.72
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	118	1.01	1.18	1.01
Some other method	8	0		0.00	
Total	8	1202	0.42	11.99	0.42
Rod or line (not long line)	9	5049	0.29	50.60	0.29
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	5049	0.29	50.60	0.29

21.3 Kingfish Harvest By Platform And QMA

National Panel Survey 2011–12 – Kingfish Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	KIN 1	33711	0.81	346.68	0.81
Larger motor boat or launch	KIN 1	10703	0.28	110.10	0.28
Trailer yacht	KIN 1	255	0.80	2.58	0.80
Larger yacht or keeler	KIN 1	1855	0.83	19.31	0.84
Kayak, canoe, or rowboat	KIN 1	995	0.42	10.13	0.42
Off land, including beach, rocks or jetty	KIN 1	4332	0.27	44.44	0.27
Something else	KIN 1	205	0.77	2.08	0.77
Total	KIN 1	52062	0.13	535.30	0.13
Trailer motor boat	KIN 2	2985	0.28	29.90	0.29
Larger motor boat or launch	KIN 2	474	0.47	4.73	0.47
Trailer yacht	KIN 2	0		0.00	
Larger yacht or keeler	KIN 2	0		0.00	
Kayak, canoe, or rowboat	KIN 2	0		0.00	
Off land, including beach, rocks or jetty	KIN 2	565	0.62	5.97	0.61
Something else	KIN 2	0		0.00	
Total	KIN 2	4023	0.24	40.60	0.24
Trailer motor boat	KIN 3	0		0.00	
Larger motor boat or launch	KIN 3	0		0.00	
Trailer yacht	KIN 3	0		0.00	
Larger yacht or keeler	KIN 3	0		0.00	
Kayak, canoe, or rowboat	KIN 3	0		0.00	
Off land, including beach, rocks or jetty	KIN 3	289	0.71	2.89	0.71
Something else	KIN 3	0		0.00	
Total	KIN 3	291	0.71	2.89	0.71
Trailer motor boat	KIN 7	1801	0.41	17.97	0.41
Larger motor boat or launch	KIN 7	0		0.00	
Trailer yacht	KIN 7	0		0.00	
Larger yacht or keeler	KIN 7	0		0.00	
Kayak, canoe, or rowboat	KIN 7	77	1.06	0.77	1.06
Off land, including beach, rocks or jetty	KIN 7	200	1.05	1.99	1.05
Something else	KIN 7	0		0.00	
Total	KIN 7	2081	0.38	20.73	0.38
Trailer motor boat	KIN 8	4849	0.27	48.45	0.27
Larger motor boat or launch	KIN 8	1046	0.44	10.59	0.44
Trailer yacht	KIN 8	0		0.00	
Larger yacht or keeler	KIN 8	0		0.00	
Kayak, canoe, or rowboat	KIN 8	0		0.00	
Off land, including beach, rocks or jetty	KIN 8	357	0.59	3.56	0.59
Something else	KIN 8	0		0.00	
Total	KIN 8	6249	0.25	62.60	0.25

21.4 Kingfish Harvest By Method And QMA

National Panel Survey 2011–12 – Kingfish Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	KIN 1	48275	0.63	495.33	0.62
Long-line including set line, contiki or kite	KIN 1	1581	0.86	17.47	0.87
Net (not including landing net used if caught on line)	KIN 1	221	1.01	2.48	1.01
Pot (eg. for crayfish)	KIN 1	0		0.00	
Dredge, grapple or rake	KIN 1	0		0.00	
Hand gather or floundering from shore	KIN 1	0		0.00	
Hand gather by diving	KIN 1	0		0.00	
Spearfishing	KIN 1	1979	0.44	20.02	0.44
Some other method	KIN 1	0		0.00	
Total	KIN 1	52062	0.13	535.30	0.13
Rod or line (not long line)	KIN 2	4025	0.23	40.60	0.23
Long-line including set line, contiki or kite	KIN 2	0		0.00	
Net (not including landing net used if caught on line)	KIN 2	0		0.00	
Pot (eg. for crayfish)	KIN 2	0		0.00	
Dredge, grapple or rake	KIN 2	0		0.00	
Hand gather or floundering from shore	KIN 2	0		0.00	
Hand gather by diving	KIN 2	0		0.00	
Spearfishing	KIN 2	0		0.00	
Some other method	KIN 2	0		0.00	
Total	KIN 2	4023	0.24	40.60	0.24
Rod or line (not long line)	KIN 3	289	1.54	2.89	1.54
Long-line including set line, contiki or kite	KIN 3	0		0.00	
Net (not including landing net used if caught on line)	KIN 3	0		0.00	
Pot (eg. for crayfish)	KIN 3	0		0.00	
Dredge, grapple or rake	KIN 3	0		0.00	
Hand gather or floundering from shore	KIN 3	0		0.00	
Hand gather by diving	KIN 3	0		0.00	
Spearfishing	KIN 3	0		0.00	
Some other method	KIN 3	0		0.00	
Total	KIN 3	291	0.71	2.89	0.71
Rod or line (not long line)	KIN 7	1879	0.44	18.74	0.44
Long-line including set line, contiki or kite	KIN 7	0		0.00	
Net (not including landing net used if caught on line)	KIN 7	0		0.00	
Pot (eg. for crayfish)	KIN 7	0		0.00	
Dredge, grapple or rake	KIN 7	0		0.00	
Hand gather or floundering from shore	KIN 7	0		0.00	
Hand gather by diving	KIN 7	0		0.00	
Spearfishing	KIN 7	200	1.05	1.99	1.05
Some other method	KIN 7	0		0.00	
Total	KIN 7	2081	0.38	20.73	0.38
Rod or line (not long line)	KIN 8	6007	0.64	60.16	0.64
Long-line including set line, contiki or kite	KIN 8	127	0.72	1.26	0.72
Net (not including landing net used if caught on line)	KIN 8	0		0.00	
Pot (eg. for crayfish)	KIN 8	0		0.00	
Dredge, grapple or rake	KIN 8	0		0.00	
Hand gather or floundering from shore	KIN 8	0		0.00	
Hand gather by diving	KIN 8	0		0.00	
Spearfishing	KIN 8	118	1.01	1.18	1.01
Some other method	KIN 8	0		0.00	
Total	KIN 8	6249	0.25	62.60	0.25

22. SKIPJACK TUNA HARVEST ESTIMATES

22.1 Skipjack Tuna Harvest By Platform And FMA

National Panel Survey 2011–12 – Skipjack Tuna Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	17160	0.43	38.37	0.43
Larger motor boat or launch	1	15063	0.42	33.68	0.42
Trailer yacht	1	0		0.00	
Larger yacht or keeler	1	805	0.85	1.80	0.85
Kayak, canoe, or rowboat	1	243	1.01	0.54	1.01
Off land, including beach, rocks or jetty	1	124	1.00	0.28	1.00
Something else	1	0		0.00	
Total	1	33395	0.28	74.67	0.28
Trailer motor boat	2	1394	0.50	3.12	0.50
Larger motor boat or launch	2	222	1.02	0.50	1.02
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	0		0.00	
Off land, including beach, rocks or jetty	2	0		0.00	
Something else	2	0		0.00	
Total	2	1616	0.43	3.61	0.43
Trailer motor boat	3	0		0.00	
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	0		0.00	
Something else	3	0		0.00	
Total	3	0		0.00	
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	0		0.00	
Larger motor boat or launch	7	0		0.00	
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	0		0.00	
Off land, including beach, rocks or jetty	7	0		0.00	
Something else	7	0		0.00	
Total	7	0		0.00	
Trailer motor boat	8	1497	0.57	3.35	0.57
Larger motor boat or launch	8	0		0.00	
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	0		0.00	
Something else	8	0		0.00	
Total	8	1497	0.57	3.35	0.57
Trailer motor boat	9	4333	0.39	9.69	0.39
Larger motor boat or launch	9	340	1.00	0.76	1.00
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	0		0.00	
Something else	9	0		0.00	
Total	9	4673	0.37	10.45	0.37

22.2 Skipjack Tuna Harvest By Method And FMA

National Panel Survey 2011–12 – Skipjack Tuna Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	33255	0.28	74.36	0.28
Long-line including set line, contiki or kite	1	140	1.02	0.31	1.02
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	33395	0.28	74.67	0.28
Rod or line (not long line)	2	1616	0.43	3.61	0.43
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	1616	0.43	3.61	0.43
Rod or line (not long line)	3	0		0.00	
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	0		0.00	
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	0		0.00	
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	0		0.00	
Rod or line (not long line)	8	1497	0.57	3.35	0.57
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	1497	0.57	3.35	0.57
Rod or line (not long line)	9	4673	0.37	10.45	0.37
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	4673	0.37	10.45	0.37

22.3 Skipjack Tuna Harvest By Platform And QMA

National Panel Survey 2011–12 – Skipjack Tuna Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	SKJ 1	24385	0.43	54.52	0.43
Larger motor boat or launch	SKJ 1	15626	0.58	34.94	0.58
Trailer yacht	SKJ 1	0		0.00	
Larger yacht or keeler	SKJ 1	805	0.85	1.80	0.85
Kayak, canoe, or rowboat	SKJ 1	243	1.01	0.54	1.01
Off land, including beach, rocks or jetty	SKJ 1	124	1.00	0.28	1.00
Something else	SKJ 1	0		0.00	
Total	SKJ 1	41176	0.23	92.08	0.23

22.4 Skipjack Tuna Harvest By Method And QMA

National Panel Survey 2011–12 – Skipjack Tuna Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	SKJ 1	41042	0.21	91.77	0.21
Long-line including set line, contiki or kite	SKJ 1	140	1.02	0.31	1.02
Net (not including landing net used if caught on line)	SKJ 1	0		0.00	
Pot (eg. for crayfish)	SKJ 1	0		0.00	
Dredge, grapple or rake	SKJ 1	0		0.00	
Hand gather or floundering from shore	SKJ 1	0		0.00	
Hand gather by diving	SKJ 1	0		0.00	
Spearfishing	SKJ 1	0		0.00	
Some other method	SKJ 1	0		0.00	
Total	SKJ 1	41176	0.23	92.08	0.23

23. HAPUKU/BASS HARVEST ESTIMATES

23.1 Hapuku/Bass Harvest By Platform And FMA

National Panel Survey 2011–12 – Hapuku/Bass Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	3419	0.45	20.02	0.45
Larger motor boat or launch	1	7645	0.46	44.75	0.46
Trailer yacht	1	122	1.01	0.71	1.01
Larger yacht or keeler	1	0		0.00	
Kayak, canoe, or rowboat	1	473	1.02	2.77	1.02
Off land, including beach, rocks or jetty	1	125	1.01	0.73	1.01
Something else	1	0		0.00	
Total	1	11783	0.44	68.98	0.44
Trailer motor boat	2	6851	0.28	40.11	0.28
Larger motor boat or launch	2	2400	0.32	14.05	0.32
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	49	1.01	0.29	1.01
Off land, including beach, rocks or jetty	2	880	0.98	5.15	0.98
Something else	2	0		0.00	
Total	2	10179	0.28	59.59	0.28
Trailer motor boat	3	4005	0.35	23.44	0.35
Larger motor boat or launch	3	2237	0.61	13.10	0.61
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	141	1.03	0.82	1.03
Something else	3	0		0.00	
Total	3	6383	0.31	37.36	0.31
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	138	1.00	0.81	1.00
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	138	1.00	0.81	1.00
Trailer motor boat	7	1527	0.49	8.94	0.49
Larger motor boat or launch	7	636	0.68	3.72	0.68
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	0		0.00	
Off land, including beach, rocks or jetty	7	0		0.00	
Something else	7	0		0.00	
Total	7	2163	0.41	12.66	0.41
Trailer motor boat	8	2365	0.56	13.84	0.56
Larger motor boat or launch	8	2011	0.52	11.77	0.52
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	0		0.00	
Something else	8	0		0.00	
Total	8	4376	0.54	25.62	0.54
Trailer motor boat	9	1096	0.51	6.42	0.51
Larger motor boat or launch	9	1030	0.74	6.03	0.74
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	354	1.03	2.07	1.03
Something else	9	0		0.00	
Total	9	2480	0.45	14.52	0.45

23.2 Hapuku/Bass Harvest By Method And FMA

National Panel Survey 2011–12 – Hapuku/Bass Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	11783	0.31	68.98	0.31
Long-line including set line, contiki or kite	1	0		0.00	
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	11783	0.44	68.98	0.44
Rod or line (not long line)	2	10179	0.28	59.59	0.28
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	10179	0.28	59.59	0.28
Rod or line (not long line)	3	6324	0.46	37.02	0.46
Long-line including set line, contiki or kite	3	59	1.01	0.34	1.01
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	6383	0.31	37.36	0.31
Rod or line (not long line)	5	138	1.00	0.81	1.00
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	138	1.00	0.81	1.00
Rod or line (not long line)	7	2163	0.46	12.66	0.46
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	2163	0.41	12.66	0.41
Rod or line (not long line)	8	4376	0.42	25.62	0.42
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	4376	0.54	25.62	0.54
Rod or line (not long line)	9	2480	0.45	14.52	0.45
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	2480	0.45	14.52	0.45

23.3 Hapuku/Bass Harvest By Platform And QMA

National Panel Survey 2011–12 – Hapuku/Bass Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	HPB 1	3198	0.35	18.72	0.35
Larger motor boat or launch	HPB 1	8509	0.41	49.81	0.41
Trailer yacht	HPB 1	122	1.01	0.71	1.01
Larger yacht or keeler	HPB 1	0		0.00	
Kayak, canoe, or rowboat	HPB 1	473	1.02	2.77	1.02
Off land, including beach, rocks or jetty	HPB 1	354	1.03	2.07	1.03
Something else	HPB 1	0		0.00	
Total	HPB 1	12644	0.42	74.08	0.42
Trailer motor boat	HPB 2	8169	0.26	47.82	0.26
Larger motor boat or launch	HPB 2	2566	0.36	15.02	0.36
Trailer yacht	HPB 2	0		0.00	
Larger yacht or keeler	HPB 2	0		0.00	
Kayak, canoe, or rowboat	HPB 2	49	1.01	0.29	1.01
Off land, including beach, rocks or jetty	HPB 2	1004	0.54	5.88	0.54
Something else	HPB 2	0		0.00	
Total	HPB 2	11781	0.25	69.01	0.25
Trailer motor boat	HPB 3	4005	0.43	23.44	0.43
Larger motor boat or launch	HPB 3	2237	0.62	13.10	0.62
Trailer yacht	HPB 3	0		0.00	
Larger yacht or keeler	HPB 3	0		0.00	
Kayak, canoe, or rowboat	HPB 3	0		0.00	
Off land, including beach, rocks or jetty	HPB 3	141	1.03	0.82	1.03
Something else	HPB 3	0		0.00	
Total	HPB 3	5105	0.39	37.36	0.31
Trailer motor boat	HPB 5	0		0.00	
Larger motor boat or launch	HPB 5	138	1.00	0.81	1.00
Trailer yacht	HPB 5	0		0.00	
Larger yacht or keeler	HPB 5	0		0.00	
Kayak, canoe, or rowboat	HPB 5	0		0.00	
Off land, including beach, rocks or jetty	HPB 5	0		0.00	
Something else	HPB 5	0		0.00	
Total	HPB 5	137	1.00	0.81	1.00
Trailer motor boat	HPB 7	1527	0.47	8.94	0.47
Larger motor boat or launch	HPB 7	636	0.68	3.72	0.68
Trailer yacht	HPB 7	0		0.00	
Larger yacht or keeler	HPB 7	0		0.00	
Kayak, canoe, or rowboat	HPB 7	0		0.00	
Off land, including beach, rocks or jetty	HPB 7	0		0.00	
Something else	HPB 7	0		0.00	
Total	HPB 7	2165	0.41	12.66	0.41
Trailer motor boat	HPB 8	2365	0.79	13.84	0.79
Larger motor boat or launch	HPB 8	2011	0.73	11.77	0.73
Trailer yacht	HPB 8	0		0.00	
Larger yacht or keeler	HPB 8	0		0.00	
Kayak, canoe, or rowboat	HPB 8	0		0.00	
Off land, including beach, rocks or jetty	HPB 8	0		0.00	
Something else	HPB 8	0		0.00	
Total	HPB 8	4373	0.54	25.62	0.54

23.4 Hapuku/Bass Harvest By Method And QMA

National Panel Survey 2011–12 – Hapuku/Bass Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	HPB 1	12655	0.27	74.08	0.27
Long-line including set line, contiki or kite	HPB 1	0		0.00	
Net (not including landing net used if caught on line)	HPB 1	0		0.00	
Pot (eg. for crayfish)	HPB 1	0		0.00	
Dredge, grapple or rake	HPB 1	0		0.00	
Hand gather or floundering from shore	HPB 1	0		0.00	
Hand gather by diving	HPB 1	0		0.00	
Spearfishing	HPB 1	0		0.00	
Some other method	HPB 1	0		0.00	
Total	HPB 1	12644	0.42	74.08	0.42
Rod or line (not long line)	HPB 2	11788	0.21	69.01	0.21
Long-line including set line, contiki or kite	HPB 2	0		0.00	
Net (not including landing net used if caught on line)	HPB 2	0		0.00	
Pot (eg. for crayfish)	HPB 2	0		0.00	
Dredge, grapple or rake	HPB 2	0		0.00	
Hand gather or floundering from shore	HPB 2	0		0.00	
Hand gather by diving	HPB 2	0		0.00	
Spearfishing	HPB 2	0		0.00	
Some other method	HPB 2	0		0.00	
Total	HPB 2	11781	0.25	69.01	0.25
Rod or line (not long line)	HPB 3	6324	0.28	37.02	0.28
Long-line including set line, contiki or kite	HPB 3	59	1.01	0.34	1.01
Net (not including landing net used if caught on line)	HPB 3	0		0.00	
Pot (eg. for crayfish)	HPB 3	0		0.00	
Dredge, grapple or rake	HPB 3	0		0.00	
Hand gather or floundering from shore	HPB 3	0		0.00	
Hand gather by diving	HPB 3	0		0.00	
Spearfishing	HPB 3	0		0.00	
Some other method	HPB 3	0		0.00	
Total	HPB 3	5105	0.39	37.36	0.31
Rod or line (not long line)	HPB 5	138	1.00	0.81	1.00
Long-line including set line, contiki or kite	HPB 5	0		0.00	
Net (not including landing net used if caught on line)	HPB 5	0		0.00	
Pot (eg. for crayfish)	HPB 5	0		0.00	
Dredge, grapple or rake	HPB 5	0		0.00	
Hand gather or floundering from shore	HPB 5	0		0.00	
Hand gather by diving	HPB 5	0		0.00	
Spearfishing	HPB 5	0		0.00	
Some other method	HPB 5	0		0.00	
Total	HPB 5	137	1.00	0.81	1.00
Rod or line (not long line)	HPB 7	2163	0.44	12.66	0.44
Long-line including set line, contiki or kite	HPB 7	0		0.00	
Net (not including landing net used if caught on line)	HPB 7	0		0.00	
Pot (eg. for crayfish)	HPB 7	0		0.00	
Dredge, grapple or rake	HPB 7	0		0.00	
Hand gather or floundering from shore	HPB 7	0		0.00	
Hand gather by diving	HPB 7	0		0.00	
Spearfishing	HPB 7	0		0.00	
Some other method	HPB 7	0		0.00	
Total	HPB 7	2165	0.41	12.66	0.41
Rod or line (not long line)	HPB 8	4376	0.54	25.62	0.54
Long-line including set line, contiki or kite	HPB 8	0		0.00	
Net (not including landing net used if caught on line)	HPB 8	0		0.00	
Pot (eg. for crayfish)	HPB 8	0		0.00	
Dredge, grapple or rake	HPB 8	0		0.00	
Hand gather or floundering from shore	HPB 8	0		0.00	
Hand gather by diving	HPB 8	0		0.00	
Spearfishing	HPB 8	0		0.00	
Some other method	HPB 8	0		0.00	
Total	HPB 8	4373	0.54	25.62	0.54

24. ALBACORE TUNA HARVEST ESTIMATES

24.1 Albacore Tuna Harvest By Platform And FMA

National Panel Survey 2011–12 – Albacore Tuna Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	3017	0.53	12.69	0.53
Larger motor boat or launch	1	300	0.59	1.26	0.59
Trailer yacht	1	313	1.00	1.32	1.00
Larger yacht or keeler	1	0		0.00	
Kayak, canoe, or rowboat	1	0		0.00	
Off land, including beach, rocks or jetty	1	0		0.00	
Something else	1	0		0.00	
Total	1	3629	0.35	15.26	0.35
Trailer motor boat	2	2329	0.50	9.80	0.50
Larger motor boat or launch	2	0		0.00	
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	0		0.00	
Off land, including beach, rocks or jetty	2	0		0.00	
Something else	2	0		0.00	
Total	2	2329	0.47	9.80	0.47
Trailer motor boat	3	0		0.00	
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	0		0.00	
Something else	3	0		0.00	
Total	3	0		0.00	
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	0		0.00	
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	0		0.00	
Trailer motor boat	7	3422	0.74	14.39	0.74
Larger motor boat or launch	7	0		0.00	
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	0		0.00	
Off land, including beach, rocks or jetty	7	0		0.00	
Something else	7	0		0.00	
Total	7	3422	0.78	14.39	0.78
Trailer motor boat	8	6435	1.02	27.06	1.02
Larger motor boat or launch	8	0		0.00	
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	0		0.00	
Something else	8	0		0.00	
Total	8	6435	0.38	27.06	0.38
Trailer motor boat	9	6032	0.37	25.37	0.37
Larger motor boat or launch	9	50	1.01	0.21	1.01
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	0		0.00	
Something else	9	0		0.00	
Total	9	6082	0.38	25.58	0.38

24.2 Albacore Tuna Harvest By Method And FMA

National Panel Survey 2011–12 – Albacore Tuna Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	3489	0.55	14.67	0.55
Long-line including set line, contiki or kite	1	140	1.02	0.59	1.02
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	3629	0.35	15.26	0.35
Rod or line (not long line)	2	2329	0.50	9.80	0.50
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	2329	0.47	9.80	0.47
Rod or line (not long line)	3	0		0.00	
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	0		0.00	
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	0		0.00	
Rod or line (not long line)	7	3422	0.74	14.39	0.74
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	3422	0.78	14.39	0.78
Rod or line (not long line)	8	6435	1.02	27.06	1.02
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	6435	0.38	27.06	0.38
Rod or line (not long line)	9	6082	0.38	25.58	0.38
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	6082	0.38	25.58	0.38

24.3 Albacore Tuna Harvest By Platform And QMA

National Panel Survey 2011–12 – Albacore Tuna Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	ALB 1	21235	0.31	89.30	0.31
Larger motor boat or launch	ALB 1	349	0.52	1.47	0.52
Trailer yacht	ALB 1	313	1.00	1.32	1.00
Larger yacht or keeler	ALB 1	0		0.00	
Kayak, canoe, or rowboat	ALB 1	0		0.00	
Off land, including beach, rocks or jetty	ALB 1	0		0.00	
Something else	ALB 1	0		0.00	
Total	ALB 1	21928	0.21	92.09	0.21

Note: There is only one QMA for Tuna Albacore for NZ.

24.4 Albacore Tuna Harvest By Method And QMA

National Panel Survey 2011–12 – Albacore Tuna Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	ALB 1	21757	0.21	91.50	0.21
Long-line including set line, contiki or kite	ALB 1	140	1.02	0.59	1.02
Net (not including landing net used if caught on line)	ALB 1	0		0.00	
Pot (eg. for crayfish)	ALB 1	0		0.00	
Dredge, grapple or rake	ALB 1	0		0.00	
Hand gather or floundering from shore	ALB 1	0		0.00	
Hand gather by diving	ALB 1	0		0.00	
Spearfishing	ALB 1	0		0.00	
Some other method	ALB 1	0		0.00	
Total	ALB 1	21928	0.21	92.09	0.21

Note: There is only one QMA for Tuna Albacore for NZ.

25. PAUA HARVEST ESTIMATES

25.1 Paua Harvest By Platform And FMA

National Panel Survey 2011–12 – Paua Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	8724	0.68	2.44	0.68
Larger motor boat or launch	1	0		0.00	
Trailer yacht	1	0		0.00	
Larger yacht or keeler	1	304	1.30	0.09	1.30
Kayak, canoe, or rowboat	1	991	0.72	0.28	0.72
Off land, including beach, rocks or jetty	1	12112	0.47	3.39	0.47
Something else	1	1309	1.01	0.37	1.01
Total	1	23441	0.36	6.56	0.36
Trailer motor boat	2	31133	0.27	8.90	0.27
Larger motor boat or launch	2	0		0.00	
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	2497	0.69	0.71	0.69
Off land, including beach, rocks or jetty	2	165859	0.26	47.44	0.26
Something else	2	599	1.02	0.17	1.02
Total	2	200088	0.17	57.23	0.17
Trailer motor boat	3	18301	0.68	5.12	0.68
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	103	1.01	0.03	1.01
Off land, including beach, rocks or jetty	3	91445	0.40	25.57	0.40
Something else	3	0		0.00	
Total	3	109849	0.25	30.72	0.25
Trailer motor boat	5	3067	0.52	0.86	0.52
Larger motor boat or launch	5	217	1.02	0.06	1.02
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	32306	0.31	9.03	0.31
Something else	5	0		0.00	
Total	5	35590	0.37	9.95	0.37
Trailer motor boat	7	31186	0.51	8.72	0.51
Larger motor boat or launch	7	2716	0.71	0.76	0.71
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	208	1.00	0.06	1.00
Off land, including beach, rocks or jetty	7	16423	0.40	4.59	0.40
Something else	7	0		0.00	
Total	7	50534	0.34	14.13	0.34
Trailer motor boat	8	13239	0.47	3.79	0.47
Larger motor boat or launch	8	539	1.01	0.15	1.01
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	789	1.02	0.23	1.02
Off land, including beach, rocks or jetty	8	71528	0.29	20.46	0.29
Something else	8	0		0.00	
Total	8	86095	0.29	24.62	0.29
Trailer motor boat	9	1104	0.73	0.31	0.73
Larger motor boat or launch	9	322	1.03	0.09	1.03
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	2161	1.02	0.60	1.02
Off land, including beach, rocks or jetty	9	16452	0.37	4.60	0.37
Something else	9	0		0.00	
Total	9	20039	0.38	5.60	0.38

25.2 Paua Harvest By Method And FMA

National Panel Survey 2011–12 – Paua Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	0		0.00	
Long-line including set line, contiki or kite	1	0		0.00	
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	1935	0.78	0.54	0.78
Hand gather by diving	1	21506	0.29	6.01	0.29
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	23441	0.36	6.56	0.36
Rod or line (not long line)	2	0		0.00	
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	23610	0.27	6.75	0.27
Hand gather by diving	2	176478	0.38	50.47	0.38
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	200088	0.17	57.23	0.17
Rod or line (not long line)	3	0		0.00	
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	33601	0.37	9.40	0.37
Hand gather by diving	3	76248	0.25	21.32	0.25
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	109849	0.25	30.72	0.25
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	12957	0.51	3.62	0.51
Hand gather by diving	5	22633	0.41	6.33	0.41
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	35590	0.37	9.95	0.37
Rod or line (not long line)	7	0		0.00	
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	5232	0.77	1.46	0.77
Hand gather by diving	7	45301	0.28	12.67	0.28
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	50534	0.34	14.13	0.34
Rod or line (not long line)	8	0		0.00	
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	53620	0.33	15.34	0.33
Hand gather by diving	8	32475	0.50	9.29	0.50
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	86095	0.29	24.62	0.29
Rod or line (not long line)	9	0		0.00	
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	5704	0.66	1.60	0.66
Hand gather by diving	9	14335	0.36	4.01	0.36
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	20039	0.38	5.60	0.38

25.3 Paua Harvest By Platform And QMA

National Panel Survey 2011–12 – Paua Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	PAU 1	9829	0.95	2.75	0.95
Larger motor boat or launch	PAU 1	322	1.03	0.09	1.03
Trailer yacht	PAU 1	0		0.00	
Larger yacht or keeler	PAU 1	304	1.30	0.09	1.30
Kayak, canoe, or rowboat	PAU 1	3152	0.74	0.88	0.74
Off land, including beach, rocks or jetty	PAU 1	28564	0.44	7.99	0.44
Something else	PAU 1	1309	1.01	0.37	1.01
Total	PAU 1	43471	0.28	12.16	0.27
Trailer motor boat	PAU 2	44373	0.24	12.69	0.24
Larger motor boat or launch	PAU 2	539	1.01	0.15	1.01
Trailer yacht	PAU 2	0		0.00	
Larger yacht or keeler	PAU 2	0		0.00	
Kayak, canoe, or rowboat	PAU 2	3285	0.84	0.94	0.84
Off land, including beach, rocks or jetty	PAU 2	237386	0.17	67.89	0.17
Something else	PAU 2	599	1.02	0.17	1.02
Total	PAU 2	286088	0.15	81.85	0.15
Trailer motor boat	PAU 3	12453	0.41	3.48	0.41
Larger motor boat or launch	PAU 3	0		0.00	
Trailer yacht	PAU 3	0		0.00	
Larger yacht or keeler	PAU 3	0		0.00	
Kayak, canoe, or rowboat	PAU 3	0		0.00	
Off land, including beach, rocks or jetty	PAU 3	48264	0.32	13.50	0.32
Something else	PAU 3	0		0.00	
Total	PAU 3	61000	0.31	16.98	0.31
Trailer motor boat	PAU 5A	0		0.00	
Larger motor boat or launch	PAU 5A	0		0.00	
Trailer yacht	PAU 5A	0		0.00	
Larger yacht or keeler	PAU 5A	0		0.00	
Kayak, canoe, or rowboat	PAU 5A	0		0.00	
Off land, including beach, rocks or jetty	PAU 5A	1487	0.68	0.42	0.68
Something else	PAU 5A	0		0.00	
Total	PAU 5A	1486	0.76	0.42	0.76
Trailer motor boat	PAU 5B	2398	0.60	0.67	0.60
Larger motor boat or launch	PAU 5B	217	1.02	0.06	1.02
Trailer yacht	PAU 5B	0		0.00	
Larger yacht or keeler	PAU 5B	0		0.00	
Kayak, canoe, or rowboat	PAU 5B	0		0.00	
Off land, including beach, rocks or jetty	PAU 5B	330	1.03	0.09	1.03
Something else	PAU 5B	0		0.00	
Total	PAU 5B	2957	0.50	0.82	0.50
Trailer motor boat	PAU 5D	6517	0.51	1.82	0.51
Larger motor boat or launch	PAU 5D	0		0.00	
Trailer yacht	PAU 5D	0		0.00	
Larger yacht or keeler	PAU 5D	0		0.00	
Kayak, canoe, or rowboat	PAU 5D	103	1.01	0.03	1.01
Off land, including beach, rocks or jetty	PAU 5D	73670	0.27	20.60	0.27
Something else	PAU 5D	0		0.00	
Total	PAU 5D	80294	0.30	22.45	0.30
Trailer motor boat	PAU 6	0		0.00	
Larger motor boat or launch	PAU 6	0		0.00	
Trailer yacht	PAU 6	0		0.00	
Larger yacht or keeler	PAU 6	0		0.00	
Kayak, canoe, or rowboat	PAU 6	0		0.00	
Off land, including beach, rocks or jetty	PAU 6	0		0.00	
Something else	PAU 6	0		0.00	
Total	PAU 6	0		0.00	
Trailer motor boat	PAU 7	31186	0.67	8.72	0.67
Larger motor boat or launch	PAU 7	2716	0.69	0.76	0.69
Trailer yacht	PAU 7	0		0.00	
Larger yacht or keeler	PAU 7	0		0.00	
Kayak, canoe, or rowboat	PAU 7	208	1.00	0.06	1.00
Off land, including beach, rocks or jetty	PAU 7	16423	0.47	4.59	0.47
Something else	PAU 7	0		0.00	
Total	PAU 7	50510	0.34	14.13	0.34

25.4 Paua Harvest By Method And QMA

National Panel Survey 2011–12 – Paua Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	PAU 1	0		0.00	
Long-line including set line, contiki or kite	PAU 1	0		0.00	
Net (not including landing net used if caught on line)	PAU 1	0		0.00	
Pot (eg. for crayfish)	PAU 1	0		0.00	
Dredge, grapple or rake	PAU 1	0		0.00	
Hand gather or floundering from shore	PAU 1	7639	0.53	2.14	0.53
Hand gather by diving	PAU 1	35841	0.76	10.02	0.76
Spearfishing	PAU 1	0		0.00	
Some other method	PAU 1	0		0.00	
Total	PAU 1	43471	0.28	12.16	0.27
Rod or line (not long line)	PAU 2	0		0.00	
Long-line including set line, contiki or kite	PAU 2	0		0.00	
Net (not including landing net used if caught on line)	PAU 2	0		0.00	
Pot (eg. for crayfish)	PAU 2	0		0.00	
Dredge, grapple or rake	PAU 2	0		0.00	
Hand gather or floundering from shore	PAU 2	77230	0.27	22.09	0.27
Hand gather by diving	PAU 2	208952	0.19	59.76	0.19
Spearfishing	PAU 2	0		0.00	
Some other method	PAU 2	0		0.00	
Total	PAU 2	286088	0.15	81.85	0.15
Rod or line (not long line)	PAU 3	0		0.00	
Long-line including set line, contiki or kite	PAU 3	0		0.00	
Net (not including landing net used if caught on line)	PAU 3	0		0.00	
Pot (eg. for crayfish)	PAU 3	0		0.00	
Dredge, grapple or rake	PAU 3	0		0.00	
Hand gather or floundering from shore	PAU 3	6940	0.57	1.94	0.57
Hand gather by diving	PAU 3	53777	0.41	15.04	0.41
Spearfishing	PAU 3	0		0.00	
Some other method	PAU 3	0		0.00	
Total	PAU 3	61000	0.31	16.98	0.31
Rod or line (not long line)	PAU 5A	0		0.00	
Long-line including set line, contiki or kite	PAU 5A	0		0.00	
Net (not including landing net used if caught on line)	PAU 5A	0		0.00	
Pot (eg. for crayfish)	PAU 5A	0		0.00	
Dredge, grapple or rake	PAU 5A	0		0.00	
Hand gather or floundering from shore	PAU 5A	486	1.02	0.14	1.02
Hand gather by diving	PAU 5A	1001	1.03	0.28	1.03
Spearfishing	PAU 5A	0		0.00	
Some other method	PAU 5A	0		0.00	
Total	PAU 5A	1486	0.76	0.42	0.76
Rod or line (not long line)	PAU 5B	0		0.00	
Long-line including set line, contiki or kite	PAU 5B	0		0.00	
Net (not including landing net used if caught on line)	PAU 5B	0		0.00	
Pot (eg. for crayfish)	PAU 5B	0		0.00	
Dredge, grapple or rake	PAU 5B	0		0.00	
Hand gather or floundering from shore	PAU 5B	0		0.00	
Hand gather by diving	PAU 5B	2945	0.44	0.82	0.44
Spearfishing	PAU 5B	0		0.00	
Some other method	PAU 5B	0		0.00	
Total	PAU 5B	2957	0.50	0.82	0.50

Continued ...

National Panel Survey 2011–12 – Paua Harvest By Method And QMA (continued)					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	PAU 5D	0		0.00	
Long-line including set line, contiki or kite	PAU 5D	0		0.00	
Net (not including landing net used if caught on line)	PAU 5D	0		0.00	
Pot (eg. for crayfish)	PAU 5D	0		0.00	
Dredge, grapple or rake	PAU 5D	0		0.00	
Hand gather or floundering from shore	PAU 5D	39132	0.46	10.94	0.46
Hand gather by diving	PAU 5D	41157	0.32	11.51	0.32
Spearfishing	PAU 5D	0		0.00	
Some other method	PAU 5D	0		0.00	
Total	PAU 5D	80294	0.30	22.45	0.30
Rod or line (not long line)	PAU 6	0		0.00	
Long-line including set line, contiki or kite	PAU 6	0		0.00	
Net (not including landing net used if caught on line)	PAU 6	0		0.00	
Pot (eg. for crayfish)	PAU 6	0		0.00	
Dredge, grapple or rake	PAU 6	0		0.00	
Hand gather or floundering from shore	PAU 6	0		0.00	
Hand gather by diving	PAU 6	0		0.00	
Spearfishing	PAU 6	0		0.00	
Some other method	PAU 6	0		0.00	
Total	PAU 6	0		0.00	
Rod or line (not long line)	PAU 7	0		0.00	
Long-line including set line, contiki or kite	PAU 7	0		0.00	
Net (not including landing net used if caught on line)	PAU 7	0		0.00	
Pot (eg. for crayfish)	PAU 7	0		0.00	
Dredge, grapple or rake	PAU 7	0		0.00	
Hand gather or floundering from shore	PAU 7	5232	0.77	1.46	0.77
Hand gather by diving	PAU 7	45301	0.36	12.67	0.36
Spearfishing	PAU 7	0		0.00	
Some other method	PAU 7	0		0.00	
Total	PAU 7	50510	0.34	14.13	0.34

26. SCALLOP HARVEST ESTIMATES

26.1 Scallop Harvest By Platform And FMA

National Panel Survey 2011–12 – Scallop Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	583234	0.25	64.55	0.25
Larger motor boat or launch	1	74708	0.33	8.27	0.33
Trailer yacht	1	2025	1.00	0.22	1.00
Larger yacht or keeler	1	29538	0.46	3.27	0.46
Kayak, canoe, or rowboat	1	4548	0.84	0.50	0.84
Off land, including beach, rocks or jetty	1	61472	0.35	6.80	0.35
Something else	1	0		0.00	
Total	1	755525	0.23	83.62	0.23
Trailer motor boat	2	21597	1.04	2.39	1.04
Larger motor boat or launch	2	104	1.01	0.01	1.01
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	0		0.00	
Off land, including beach, rocks or jetty	2	14787	0.48	1.64	0.48
Something else	2	0		0.00	
Total	2	36487	0.41	4.04	0.41
Trailer motor boat	3	0		0.00	
Larger motor boat or launch	3	0		0.00	
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	0		0.00	
Something else	3	0		0.00	
Total	3	0		0.00	
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	1376	1.00	0.15	1.00
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	1376	1.00	0.15	1.00
Trailer motor boat	7	562905	0.27	62.30	0.27
Larger motor boat or launch	7	185475	0.32	20.53	0.32
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	38263	0.78	4.23	0.78
Kayak, canoe, or rowboat	7	13901	1.00	1.54	1.00
Off land, including beach, rocks or jetty	7	6399	1.10	0.71	1.10
Something else	7	0		0.00	
Total	7	806943	0.23	89.31	0.23
Trailer motor boat	8	0		0.00	
Larger motor boat or launch	8	2306	1.01	0.26	1.01
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	0		0.00	
Something else	8	0		0.00	
Total	8	2306	1.01	0.26	1.01
Trailer motor boat	9	63076	0.45	6.98	0.45
Larger motor boat or launch	9	0		0.00	
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	3968	1.00	0.44	1.00
Something else	9	0		0.00	
Total	9	67044	0.42	7.42	0.42

26.2 Scallop Harvest By Method And FMA

National Panel Survey 2011–12 – Scallop Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	0		0.00	
Long-line including set line, contiki or kite	1	0		0.00	
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	166166	0.58	18.39	0.58
Hand gather or floundering from shore	1	2442	1.03	0.27	1.03
Hand gather by diving	1	586918	0.91	64.96	0.91
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	755525	0.23	83.62	0.23
Rod or line (not long line)	2	0		0.00	
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	104	1.01	0.01	1.01
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	36384	0.35	4.03	0.35
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	36487	0.41	4.04	0.41
Rod or line (not long line)	3	0		0.00	
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	0		0.00	
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	1376	1.00	0.15	1.00
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	1376	1.00	0.15	1.00
Rod or line (not long line)	7	0		0.00	
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	537499	0.24	59.49	0.24
Hand gather or floundering from shore	7	3304	1.00	0.37	1.00
Hand gather by diving	7	266139	0.44	29.45	0.44
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	806943	0.23	89.31	0.23
Rod or line (not long line)	8	0		0.00	
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	2306	1.01	0.26	1.01
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	2306	1.01	0.26	1.01
Rod or line (not long line)	9	0		0.00	
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	58629	0.38	6.49	0.38
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	8415	0.72	0.93	0.72
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	67044	0.42	7.42	0.42

26.3 Scallop Harvest By Platform And QMA

National Panel Survey 2011–12 – Scallop Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	SCA 1	103500	0.41	11.45	0.41
Larger motor boat or launch	SCA 1	16100	0.62	1.78	0.62
Trailer yacht	SCA 1	0		0.00	
Larger yacht or keeler	SCA 1	1772	1.02	0.20	1.02
Kayak, canoe, or rowboat	SCA 1	0		0.00	
Off land, including beach, rocks or jetty	SCA 1	27532	0.48	3.05	0.48
Something else	SCA 1	0		0.00	
Total	SCA 1	148859	0.36	16.48	0.36
Trailer motor boat	SCA 1A	1155	1.01	0.13	1.01
Larger motor boat or launch	SCA 1A	0		0.00	
Trailer yacht	SCA 1A	0		0.00	
Larger yacht or keeler	SCA 1A	0		0.00	
Kayak, canoe, or rowboat	SCA 1A	0		0.00	
Off land, including beach, rocks or jetty	SCA 1A	0		0.00	
Something else	SCA 1A	0		0.00	
Total	SCA 1A	1154	1.01	0.13	1.01
Trailer motor boat	SCA 2A	21597	0.57	2.39	0.57
Larger motor boat or launch	SCA 2A	104	1.01	0.01	1.01
Trailer yacht	SCA 2A	0		0.00	
Larger yacht or keeler	SCA 2A	0		0.00	
Kayak, canoe, or rowboat	SCA 2A	0		0.00	
Off land, including beach, rocks or jetty	SCA 2A	14787	0.38	1.64	0.38
Something else	SCA 2A	0		0.00	
Total	SCA 2A	36621	0.40	4.04	0.41
Trailer motor boat	SCA 3	0		0.00	
Larger motor boat or launch	SCA 3	0		0.00	
Trailer yacht	SCA 3	0		0.00	
Larger yacht or keeler	SCA 3	0		0.00	
Kayak, canoe, or rowboat	SCA 3	0		0.00	
Off land, including beach, rocks or jetty	SCA 3	0		0.00	
Something else	SCA 3	0		0.00	
Total	SCA 3	0		0.00	
Trailer motor boat	SCA 5	0		0.00	
Larger motor boat or launch	SCA 5	1376	1.00	0.15	1.00
Trailer yacht	SCA 5	0		0.00	
Larger yacht or keeler	SCA 5	0		0.00	
Kayak, canoe, or rowboat	SCA 5	0		0.00	
Off land, including beach, rocks or jetty	SCA 5	0		0.00	
Something else	SCA 5	0		0.00	
Total	SCA 5	1375	1.00	0.15	1.00
Trailer motor boat	SCA 7	552127	0.26	61.11	0.26
Larger motor boat or launch	SCA 7	185475	0.30	20.53	0.30
Trailer yacht	SCA 7	0		0.00	
Larger yacht or keeler	SCA 7	38263	0.75	4.23	0.75
Kayak, canoe, or rowboat	SCA 7	13901	1.00	1.54	1.00
Off land, including beach, rocks or jetty	SCA 7	6399	0.73	0.71	0.73
Something else	SCA 7	0		0.00	
Total	SCA 7	797126	0.23	88.11	0.23
Trailer motor boat	SCA 7A	0		0.00	
Larger motor boat or launch	SCA 7A	0		0.00	
Trailer yacht	SCA 7A	0		0.00	
Larger yacht or keeler	SCA 7A	0		0.00	
Kayak, canoe, or rowboat	SCA 7A	0		0.00	
Off land, including beach, rocks or jetty	SCA 7A	0		0.00	
Something else	SCA 7A	0		0.00	
Total	SCA 7A	0		0.00	

Continued ...

National Panel Survey 2011–12 – Scallop Harvest By Platform And QMA (continued)					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	SCA 7B	0		0.00	
Larger motor boat or launch	SCA 7B	0		0.00	
Trailer yacht	SCA 7B	0		0.00	
Larger yacht or keeler	SCA 7B	0		0.00	
Kayak, canoe, or rowboat	SCA 7B	0		0.00	
Off land, including beach, rocks or jetty	SCA 7B	0		0.00	
Something else	SCA 7B	0		0.00	
Total	SCA 7B	0		0.00	
Trailer motor boat	SCA 7C	10778	1.06	1.19	1.06
Larger motor boat or launch	SCA 7C	0		0.00	
Trailer yacht	SCA 7C	0		0.00	
Larger yacht or keeler	SCA 7C	0		0.00	
Kayak, canoe, or rowboat	SCA 7C	0		0.00	
Off land, including beach, rocks or jetty	SCA 7C	0		0.00	
Something else	SCA 7C	0		0.00	
Total	SCA 7C	10767	1.06	1.19	1.06
Trailer motor boat	SCA 8A	0		0.00	
Larger motor boat or launch	SCA 8A	2306	1.01	0.26	1.01
Trailer yacht	SCA 8A	0		0.00	
Larger yacht or keeler	SCA 8A	0		0.00	
Kayak, canoe, or rowboat	SCA 8A	0		0.00	
Off land, including beach, rocks or jetty	SCA 8A	0		0.00	
Something else	SCA 8A	0		0.00	
Total	SCA 8A	2304	1.01	0.26	1.01
Trailer motor boat	SCA 9A	63076	0.43	6.98	0.43
Larger motor boat or launch	SCA 9A	0		0.00	
Trailer yacht	SCA 9A	0		0.00	
Larger yacht or keeler	SCA 9A	0		0.00	
Kayak, canoe, or rowboat	SCA 9A	0		0.00	
Off land, including beach, rocks or jetty	SCA 9A	3968	1.00	0.44	1.00
Something else	SCA 9A	0		0.00	
Total	SCA 9A	67009	0.42	7.42	0.42
Trailer motor boat	SCA CS	478579	1.02	52.97	1.02
Larger motor boat or launch	SCA CS	58608	0.36	6.49	0.36
Trailer yacht	SCA CS	2025	1.00	0.22	1.00
Larger yacht or keeler	SCA CS	27766	0.48	3.07	0.48
Kayak, canoe, or rowboat	SCA CS	4548	0.84	0.50	0.84
Off land, including beach, rocks or jetty	SCA CS	33940	0.44	3.76	0.44
Something else	SCA CS	0		0.00	
Total	SCA CS	605050	0.27	67.01	0.27

26.4 Scallop Harvest By Method And QMA

National Panel Survey 2011–12 – Scallop Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	SCA 1	0		0.00	
Long-line including set line, contiki or kite	SCA 1	0		0.00	
Net (not including landing net used if caught on line)	SCA 1	0		0.00	
Pot (eg. for crayfish)	SCA 1	0		0.00	
Dredge, grapple or rake	SCA 1	0		0.00	
Hand gather or floundering from shore	SCA 1	2442	1.03	0.27	1.03
Hand gather by diving	SCA 1	146463	0.29	16.21	0.29
Spearfishing	SCA 1	0		0.00	
Some other method	SCA 1	0		0.00	
Total	SCA 1	148859	0.36	16.48	0.36
Rod or line (not long line)	SCA 1A	0		0.00	
Long-line including set line, contiki or kite	SCA 1A	0		0.00	
Net (not including landing net used if caught on line)	SCA 1A	0		0.00	
Pot (eg. for crayfish)	SCA 1A	0		0.00	
Dredge, grapple or rake	SCA 1A	0		0.00	
Hand gather or floundering from shore	SCA 1A	0		0.00	
Hand gather by diving	SCA 1A	1155	1.01	0.13	1.01
Spearfishing	SCA 1A	0		0.00	
Some other method	SCA 1A	0		0.00	
Total	SCA 1A	1154	1.01	0.13	1.01
Rod or line (not long line)	SCA 2A	0		0.00	
Long-line including set line, contiki or kite	SCA 2A	0		0.00	
Net (not including landing net used if caught on line)	SCA 2A	0		0.00	
Pot (eg. for crayfish)	SCA 2A	0		0.00	
Dredge, grapple or rake	SCA 2A	104	1.01	0.01	1.01
Hand gather or floundering from shore	SCA 2A	0		0.00	
Hand gather by diving	SCA 2A	36384	0.74	4.03	0.74
Spearfishing	SCA 2A	0		0.00	
Some other method	SCA 2A	0		0.00	
Total	SCA 2A	36621	0.40	4.04	0.41
Rod or line (not long line)	SCA 3	0		0.00	
Long-line including set line, contiki or kite	SCA 3	0		0.00	
Net (not including landing net used if caught on line)	SCA 3	0		0.00	
Pot (eg. for crayfish)	SCA 3	0		0.00	
Dredge, grapple or rake	SCA 3	0		0.00	
Hand gather or floundering from shore	SCA 3	0		0.00	
Hand gather by diving	SCA 3	0		0.00	
Spearfishing	SCA 3	0		0.00	
Some other method	SCA 3	0		0.00	
Total	SCA 3	0		0.00	
Rod or line (not long line)	SCA 5	0		0.00	
Long-line including set line, contiki or kite	SCA 5	0		0.00	
Net (not including landing net used if caught on line)	SCA 5	0		0.00	
Pot (eg. for crayfish)	SCA 5	0		0.00	
Dredge, grapple or rake	SCA 5	0		0.00	
Hand gather or floundering from shore	SCA 5	0		0.00	
Hand gather by diving	SCA 5	1376	1.00	0.15	1.00
Spearfishing	SCA 5	0		0.00	
Some other method	SCA 5	0		0.00	
Total	SCA 5	1375	1.00	0.15	1.00
Rod or line (not long line)	SCA 7	0		0.00	
Long-line including set line, contiki or kite	SCA 7	0		0.00	
Net (not including landing net used if caught on line)	SCA 7	0		0.00	
Pot (eg. for crayfish)	SCA 7	0		0.00	
Dredge, grapple or rake	SCA 7	526721	0.23	58.29	0.23
Hand gather or floundering from shore	SCA 7	3304	1.00	0.37	1.00
Hand gather by diving	SCA 7	266139	0.39	29.45	0.39
Spearfishing	SCA 7	0		0.00	
Some other method	SCA 7	0		0.00	
Total	SCA 7	797126	0.23	88.11	0.23

Continued ...

National Panel Survey 2011–12 – Scallop Harvest By Method And QMA (continued)					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	SCA 7A	0		0.00	
Long-line including set line, contiki or kite	SCA 7A	0		0.00	
Net (not including landing net used if caught on line)	SCA 7A	0		0.00	
Pot (eg. for crayfish)	SCA 7A	0		0.00	
Dredge, grapple or rake	SCA 7A	0		0.00	
Hand gather or floundering from shore	SCA 7A	0		0.00	
Hand gather by diving	SCA 7A	0		0.00	
Spearfishing	SCA 7A	0		0.00	
Some other method	SCA 7A	0		0.00	
Total	SCA 7A	0		0.00	
Rod or line (not long line)	SCA 7B	0		0.00	
Long-line including set line, contiki or kite	SCA 7B	0		0.00	
Net (not including landing net used if caught on line)	SCA 7B	0		0.00	
Pot (eg. for crayfish)	SCA 7B	0		0.00	
Dredge, grapple or rake	SCA 7B	0		0.00	
Hand gather or floundering from shore	SCA 7B	0		0.00	
Hand gather by diving	SCA 7B	0		0.00	
Spearfishing	SCA 7B	0		0.00	
Some other method	SCA 7B	0		0.00	
Total	SCA 7B	0		0.00	
Rod or line (not long line)	SCA 7C	0		0.00	
Long-line including set line, contiki or kite	SCA 7C	0		0.00	
Net (not including landing net used if caught on line)	SCA 7C	0		0.00	
Pot (eg. for crayfish)	SCA 7C	0		0.00	
Dredge, grapple or rake	SCA 7C	10778	1.06	1.19	1.06
Hand gather or floundering from shore	SCA 7C	0		0.00	
Hand gather by diving	SCA 7C	0		0.00	
Spearfishing	SCA 7C	0		0.00	
Some other method	SCA 7C	0		0.00	
Total	SCA 7C	10767	1.06	1.19	1.06
Rod or line (not long line)	SCA 8A	0		0.00	
Long-line including set line, contiki or kite	SCA 8A	0		0.00	
Net (not including landing net used if caught on line)	SCA 8A	0		0.00	
Pot (eg. for crayfish)	SCA 8A	0		0.00	
Dredge, grapple or rake	SCA 8A	2306	1.01	0.26	1.01
Hand gather or floundering from shore	SCA 8A	0		0.00	
Hand gather by diving	SCA 8A	0		0.00	
Spearfishing	SCA 8A	0		0.00	
Some other method	SCA 8A	0		0.00	
Total	SCA 8A	2304	1.01	0.26	1.01
Rod or line (not long line)	SCA 9A	0		0.00	
Long-line including set line, contiki or kite	SCA 9A	0		0.00	
Net (not including landing net used if caught on line)	SCA 9A	0		0.00	
Pot (eg. for crayfish)	SCA 9A	0		0.00	
Dredge, grapple or rake	SCA 9A	58629	0.38	6.49	0.38
Hand gather or floundering from shore	SCA 9A	0		0.00	
Hand gather by diving	SCA 9A	8415	1.78	0.93	1.78
Spearfishing	SCA 9A	0		0.00	
Some other method	SCA 9A	0		0.00	
Total	SCA 9A	67009	0.42	7.42	0.42
Rod or line (not long line)	SCA CS	0		0.00	
Long-line including set line, contiki or kite	SCA CS	0		0.00	
Net (not including landing net used if caught on line)	SCA CS	0		0.00	
Pot (eg. for crayfish)	SCA CS	0		0.00	
Dredge, grapple or rake	SCA CS	166166	0.45	18.39	0.45
Hand gather or floundering from shore	SCA CS	0		0.00	
Hand gather by diving	SCA CS	439300	0.19	48.62	0.19
Spearfishing	SCA CS	0		0.00	
Some other method	SCA CS	0		0.00	
Total	SCA CS	605050	0.27	67.01	0.27

27. ROCK LOBSTER (CRAYFISH) HARVEST ESTIMATES

27.1 Rock Lobster (Crayfish) Harvest By Platform And FMA

National Panel Survey 2011–12 – Rock Lobster (Crayfish) Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	54322	0.25	39.87	0.25
Larger motor boat or launch	1	9520	0.48	6.80	0.47
Trailer yacht	1	0		0.00	
Larger yacht or keeler	1	5016	0.58	3.63	0.57
Kayak, canoe, or rowboat	1	1980	0.46	1.41	0.46
Off land, including beach, rocks or jetty	1	12280	0.26	9.06	0.26
Something else	1	218	1.01	0.15	1.01
Total	1	83337	0.20	60.93	0.20
Trailer motor boat	2	38323	0.31	27.51	0.28
Larger motor boat or launch	2	1084	0.73	0.63	0.73
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	240	1.01	0.24	1.01
Kayak, canoe, or rowboat	2	4326	0.77	2.68	0.77
Off land, including beach, rocks or jetty	2	19882	0.32	17.29	0.33
Something else	2	0		0.00	
Total	2	63856	0.15	48.34	0.15
Trailer motor boat	3	27070	0.43	21.21	0.39
Larger motor boat or launch	3	315	0.69	0.28	0.70
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	6468	0.80	6.04	0.80
Something else	3	0		0.00	
Total	3	33854	0.26	27.53	0.26
Trailer motor boat	5	108	1.02	0.09	1.02
Larger motor boat or launch	5	1397	0.73	2.26	0.73
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	1505	0.68	2.35	0.70
Trailer motor boat	7	18439	0.32	20.05	0.33
Larger motor boat or launch	7	722	0.75	0.76	0.76
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	0		0.00	
Off land, including beach, rocks or jetty	7	3927	0.84	4.17	0.92
Something else	7	0		0.00	
Total	7	23087	0.32	24.98	0.32
Trailer motor boat	8	11870	0.40	13.08	0.39
Larger motor boat or launch	8	54	1.01	0.05	1.01
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	858	1.04	0.99	1.04
Something else	8	0		0.00	
Total	8	12782	0.34	14.13	0.34
Trailer motor boat	9	7572	0.67	7.08	0.60
Larger motor boat or launch	9	0		0.00	
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	277	0.73	0.32	0.73
Something else	9	0		0.00	
Total	9	7849	0.67	7.40	0.61

27.2 Rock Lobster (Crayfish) Harvest By Method And FMA

National Panel Survey 2011–12 – Rock Lobster (Crayfish) Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	0		0.00	
Long-line including set line, contiki or kite	1	0		0.00	
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	9727	0.62	6.89	0.62
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	1398	0.56	1.06	0.55
Hand gather by diving	1	72212	0.18	52.98	0.18
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	83337	0.20	60.93	0.20
Rod or line (not long line)	2	0		0.00	
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	29319	0.26	17.05	0.26
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	1330	0.47	1.12	0.48
Hand gather by diving	2	33207	0.40	30.18	0.44
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	63856	0.15	48.34	0.15
Rod or line (not long line)	3	0		0.00	
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	17193	0.39	12.01	0.39
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	397	0.76	0.37	0.76
Hand gather by diving	3	16263	0.72	15.15	0.72
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	33854	0.26	27.53	0.26
Rod or line (not long line)	5	0		0.00	
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	108	1.02	0.09	1.02
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	1397	0.73	2.26	0.73
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	1505	0.68	2.35	0.70
Rod or line (not long line)	7	0		0.00	
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	4351	0.55	4.44	0.57
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	1341	0.96	1.29	0.94
Hand gather by diving	7	17260	0.39	19.10	0.39
Spearfishing	7	0		0.00	
Some other method	7	135	1.08	0.16	1.08
Total	7	23087	0.32	24.98	0.32
Rod or line (not long line)	8	0		0.00	
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	919	0.80	1.06	0.80
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	11863	0.51	13.06	0.48
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	12782	0.34	14.13	0.34
Rod or line (not long line)	9	0		0.00	
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	5066	0.96	4.19	0.94
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	2784	0.69	3.22	0.69
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	7849	0.67	7.40	0.61

27.3 Rock Lobster (Crayfish) Harvest By Platform And QMA

National Panel Survey 2011–12 – Rock Lobster (Crayfish) Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	CRA 1	22690	0.36	18.29	0.36
Larger motor boat or launch	CRA 1	1289	0.42	1.04	0.42
Trailer yacht	CRA 1	0		0.00	
Larger yacht or keeler	CRA 1	1126	0.87	0.91	0.87
Kayak, canoe, or rowboat	CRA 1	209	0.80	0.17	0.80
Off land, including beach, rocks or jetty	CRA 1	4425	0.60	3.57	0.60
Something else	CRA 1	0		0.00	
Total	CRA 1	29720	0.30	23.98	0.30
Trailer motor boat	CRA 2	36489	0.27	25.49	0.27
Larger motor boat or launch	CRA 2	8231	0.46	5.76	0.46
Trailer yacht	CRA 2	0		0.00	
Larger yacht or keeler	CRA 2	3891	0.75	2.73	0.75
Kayak, canoe, or rowboat	CRA 2	1771	0.69	1.24	0.69
Off land, including beach, rocks or jetty	CRA 2	7855	0.28	5.49	0.28
Something else	CRA 2	218	1.01	0.15	1.01
Total	CRA 2	58413	0.24	40.86	0.24
Trailer motor boat	CRA 3	7164	0.36	4.16	0.36
Larger motor boat or launch	CRA 3	539	1.05	0.31	1.05
Trailer yacht	CRA 3	0		0.00	
Larger yacht or keeler	CRA 3	0		0.00	
Kayak, canoe, or rowboat	CRA 3	2914	0.60	1.69	0.60
Off land, including beach, rocks or jetty	CRA 3	3295	0.48	1.91	0.48
Something else	CRA 3	0		0.00	
Total	CRA 3	13912	0.33	8.07	0.33
Trailer motor boat	CRA 4	35009	0.26	27.20	0.27
Larger motor boat or launch	CRA 4	599	0.92	0.37	0.87
Trailer yacht	CRA 4	0		0.00	
Larger yacht or keeler	CRA 4	240	1.01	0.24	1.01
Kayak, canoe, or rowboat	CRA 4	1413	0.63	0.99	0.86
Off land, including beach, rocks or jetty	CRA 4	16587	0.40	15.38	0.41
Something else	CRA 4	0		0.00	
Total	CRA 4	53813	0.17	44.17	0.17
Trailer motor boat	CRA 5	39469	0.42	34.03	0.43
Larger motor boat or launch	CRA 5	663	0.54	0.60	0.51
Trailer yacht	CRA 5	0		0.00	
Larger yacht or keeler	CRA 5	0		0.00	
Kayak, canoe, or rowboat	CRA 5	0		0.00	
Off land, including beach, rocks or jetty	CRA 5	9142	0.42	8.83	0.43
Something else	CRA 5	0		0.00	
Total	CRA 5	47493	0.24	43.47	0.24
Trailer motor boat	CRA 7	357	1.03	0.23	1.03
Larger motor boat or launch	CRA 7	0		0.00	
Trailer yacht	CRA 7	0		0.00	
Larger yacht or keeler	CRA 7	0		0.00	
Kayak, canoe, or rowboat	CRA 7	0		0.00	
Off land, including beach, rocks or jetty	CRA 7	0		0.00	
Something else	CRA 7	0		0.00	
Total	CRA 7	357	1.03	0.23	1.03
Trailer motor boat	CRA 8	3575	0.56	4.52	0.60
Larger motor boat or launch	CRA 8	1397	0.73	2.26	0.73
Trailer yacht	CRA 8	0		0.00	
Larger yacht or keeler	CRA 8	0		0.00	
Kayak, canoe, or rowboat	CRA 8	0		0.00	
Off land, including beach, rocks or jetty	CRA 8	180	1.06	0.14	1.06
Something else	CRA 8	0		0.00	
Total	CRA 8	5149	0.60	6.93	0.60
Trailer motor boat	CRA 9	12952	0.44	14.97	0.44
Larger motor boat or launch	CRA 9	374	1.07	0.43	1.07
Trailer yacht	CRA 9	0		0.00	
Larger yacht or keeler	CRA 9	0		0.00	
Kayak, canoe, or rowboat	CRA 9	0		0.00	
Off land, including beach, rocks or jetty	CRA 9	2209	0.49	2.55	0.49
Something else	CRA 9	0		0.00	
Total	CRA 9	15530	0.30	17.96	0.30

27.4 Rock Lobster (Crayfish) Harvest By Method And QMA

National Panel Survey 2011–12 – Rock Lobster (Crayfish) Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	CRA 1	0		0.00	
Long-line including set line, contiki or kite	CRA 1	0		0.00	
Net (not including landing net used if caught on line)	CRA 1	0		0.00	
Pot (eg. for crayfish)	CRA 1	5478	0.90	4.42	0.90
Dredge, grapple or rake	CRA 1	0		0.00	
Hand gather or floundering from shore	CRA 1	763	1.03	0.62	1.03
Hand gather by diving	CRA 1	23498	0.35	18.95	0.35
Spearfishing	CRA 1	0		0.00	
Some other method	CRA 1	0		0.00	
Total	CRA 1	29720	0.30	23.98	0.30
Rod or line (not long line)	CRA 2	0		0.00	
Long-line including set line, contiki or kite	CRA 2	0		0.00	
Net (not including landing net used if caught on line)	CRA 2	0		0.00	
Pot (eg. for crayfish)	CRA 2	9106	0.60	6.38	0.60
Dredge, grapple or rake	CRA 2	0		0.00	
Hand gather or floundering from shore	CRA 2	635	0.94	0.44	0.94
Hand gather by diving	CRA 2	48714	0.37	34.03	0.37
Spearfishing	CRA 2	0		0.00	
Some other method	CRA 2	0		0.00	
Total	CRA 2	58413	0.24	40.86	0.24
Rod or line (not long line)	CRA 3	0		0.00	
Long-line including set line, contiki or kite	CRA 3	0		0.00	
Net (not including landing net used if caught on line)	CRA 3	0		0.00	
Pot (eg. for crayfish)	CRA 3	6660	0.34	3.86	0.34
Dredge, grapple or rake	CRA 3	0		0.00	
Hand gather or floundering from shore	CRA 3	486	0.70	0.28	0.70
Hand gather by diving	CRA 3	6767	0.45	3.92	0.45
Spearfishing	CRA 3	0		0.00	
Some other method	CRA 3	0		0.00	
Total	CRA 3	13912	0.33	8.07	0.33
Rod or line (not long line)	CRA 4	0		0.00	
Long-line including set line, contiki or kite	CRA 4	0		0.00	
Net (not including landing net used if caught on line)	CRA 4	0		0.00	
Pot (eg. for crayfish)	CRA 4	22581	0.38	13.13	0.38
Dredge, grapple or rake	CRA 4	0		0.00	
Hand gather or floundering from shore	CRA 4	844	0.62	0.84	0.62
Hand gather by diving	CRA 4	30422	0.28	30.20	0.28
Spearfishing	CRA 4	0		0.00	
Some other method	CRA 4	0		0.00	
Total	CRA 4	53813	0.17	44.17	0.17
Rod or line (not long line)	CRA 5	0		0.00	
Long-line including set line, contiki or kite	CRA 5	0		0.00	
Net (not including landing net used if caught on line)	CRA 5	0		0.00	
Pot (eg. for crayfish)	CRA 5	17628	0.60	12.51	0.59
Dredge, grapple or rake	CRA 5	0		0.00	
Hand gather or floundering from shore	CRA 5	1595	0.82	1.50	0.82
Hand gather by diving	CRA 5	30050	0.28	29.46	0.29
Spearfishing	CRA 5	0		0.00	
Some other method	CRA 5	0		0.00	
Total	CRA 5	47493	0.24	43.47	0.24

Continued ...

National Panel Survey 2011–12 – Rock Lobster (Crayfish) Harvest By Method And QMA (continued)					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	CRA 7	0		0.00	
Long-line including set line, contiki or kite	CRA 7	0		0.00	
Net (not including landing net used if caught on line)	CRA 7	0		0.00	
Pot (eg. for crayfish)	CRA 7	0		0.00	
Dredge, grapple or rake	CRA 7	0		0.00	
Hand gather or floundering from shore	CRA 7	0		0.00	
Hand gather by diving	CRA 7	357	1.03	0.23	1.03
Spearfishing	CRA 7	0		0.00	
Some other method	CRA 7	0		0.00	
Total	CRA 7	357	1.03	0.23	1.03
Rod or line (not long line)	CRA 8	0		0.00	
Long-line including set line, contiki or kite	CRA 8	0		0.00	
Net (not including landing net used if caught on line)	CRA 8	0		0.00	
Pot (eg. for crayfish)	CRA 8	1705	0.81	1.34	0.81
Dredge, grapple or rake	CRA 8	0		0.00	
Hand gather or floundering from shore	CRA 8	0		0.00	
Hand gather by diving	CRA 8	3448	0.47	5.59	0.47
Spearfishing	CRA 8	0		0.00	
Some other method	CRA 8	0		0.00	
Total	CRA 8	5149	0.60	6.93	0.60
Rod or line (not long line)	CRA 9	0		0.00	
Long-line including set line, contiki or kite	CRA 9	0		0.00	
Net (not including landing net used if caught on line)	CRA 9	0		0.00	
Pot (eg. for crayfish)	CRA 9	3527	0.59	4.08	0.59
Dredge, grapple or rake	CRA 9	0		0.00	
Hand gather or floundering from shore	CRA 9	143	1.07	0.17	1.07
Hand gather by diving	CRA 9	11730	0.55	13.56	0.55
Spearfishing	CRA 9	0		0.00	
Some other method	CRA 9	135	1.08	0.16	1.08
Total	CRA 9	15530	0.30	17.96	0.30

28. BLUENOSE HARVEST ESTIMATES

28.1 Bluenose Harvest By Platform And FMA

National Panel Survey 2011–12 – Bluenose Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	881	1.46	3.94	1.46
Larger motor boat or launch	1	4007	0.59	17.92	0.59
Trailer yacht	1	0		0.00	
Larger yacht or keeler	1	0		0.00	
Kayak, canoe, or rowboat	1	0		0.00	
Off land, including beach, rocks or jetty	1	0		0.00	
Something else	1	0		0.00	
Total	1	4887	0.44	21.86	0.44
Trailer motor boat	2	130	1.01	0.58	1.01
Larger motor boat or launch	2	314	0.55	1.40	0.55
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	0		0.00	
Off land, including beach, rocks or jetty	2	0		0.00	
Something else	2	0		0.00	
Total	2	444	0.48	1.99	0.48
Trailer motor boat	3	0		0.00	
Larger motor boat or launch	3	415	1.01	1.86	1.01
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	0		0.00	
Off land, including beach, rocks or jetty	3	0		0.00	
Something else	3	0		0.00	
Total	3	415	1.01	1.86	1.01
Trailer motor boat	5	0		0.00	
Larger motor boat or launch	5	42	1.01	0.19	1.01
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	42	1.01	0.19	1.01
Trailer motor boat	7	452	1.00	2.02	1.00
Larger motor boat or launch	7	0		0.00	
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	0		0.00	
Kayak, canoe, or rowboat	7	0		0.00	
Off land, including beach, rocks or jetty	7	0		0.00	
Something else	7	0		0.00	
Total	7	452	1.00	2.02	1.00
Trailer motor boat	8	0		0.00	
Larger motor boat or launch	8	137	1.03	0.61	1.03
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	0		0.00	
Something else	8	0		0.00	
Total	8	137	1.03	0.61	1.03
Trailer motor boat	9	1406	0.95	6.29	0.95
Larger motor boat or launch	9	0		0.00	
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	0		0.00	
Something else	9	0		0.00	
Total	9	1406	0.95	6.29	0.95

28.2 Bluenose Harvest By Method And FMA

National Panel Survey 2011–12 – Bluenose Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	4677	0.44	20.92	0.44
Long-line including set line, contiki or kite	1	210	1.02	0.94	1.02
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	4887	0.44	21.86	0.44
Rod or line (not long line)	2	444	0.48	1.99	0.48
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	444	0.48	1.99	0.48
Rod or line (not long line)	3	415	1.01	1.86	1.01
Long-line including set line, contiki or kite	3	0		0.00	
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	0		0.00	
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	415	1.01	1.86	1.01
Rod or line (not long line)	5	42	1.01	0.19	1.01
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	42	1.01	0.19	1.01
Rod or line (not long line)	7	452	1.00	2.02	1.00
Long-line including set line, contiki or kite	7	0		0.00	
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	452	1.00	2.02	1.00
Rod or line (not long line)	8	137	1.03	0.61	1.03
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	137	1.03	0.61	1.03
Rod or line (not long line)	9	1406	0.95	6.29	0.95
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	1406	0.95	6.29	0.95

28.3 Bluenose Harvest By Platform And QMA

National Panel Survey 2011–12 – Bluenose Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	BNS 1	2286	0.58	10.23	0.58
Larger motor boat or launch	BNS 1	4007	0.62	17.92	0.62
Trailer yacht	BNS 1	0		0.00	
Larger yacht or keeler	BNS 1	0		0.00	
Kayak, canoe, or rowboat	BNS 1	0		0.00	
Off land, including beach, rocks or jetty	BNS 1	0		0.00	
Something else	BNS 1	0		0.00	
Total	BNS 1	6287	0.40	28.15	0.40
Trailer motor boat	BNS 2	130	1.01	0.58	1.01
Larger motor boat or launch	BNS 2	314	0.55	1.40	0.55
Trailer yacht	BNS 2	0		0.00	
Larger yacht or keeler	BNS 2	0		0.00	
Kayak, canoe, or rowboat	BNS 2	0		0.00	
Off land, including beach, rocks or jetty	BNS 2	0		0.00	
Something else	BNS 2	0		0.00	
Total	BNS 2	444	0.48	1.99	0.48
Trailer motor boat	BNS 3	0		0.00	
Larger motor boat or launch	BNS 3	457	0.92	2.05	0.92
Trailer yacht	BNS 3	0		0.00	
Larger yacht or keeler	BNS 3	0		0.00	
Kayak, canoe, or rowboat	BNS 3	0		0.00	
Off land, including beach, rocks or jetty	BNS 3	0		0.00	
Something else	BNS 3	0		0.00	
Total	BNS 3	461	0.91	2.05	0.92
Trailer motor boat	BNS 7	452	1.00	2.02	1.00
Larger motor boat or launch	BNS 7	0		0.00	
Trailer yacht	BNS 7	0		0.00	
Larger yacht or keeler	BNS 7	0		0.00	
Kayak, canoe, or rowboat	BNS 7	0		0.00	
Off land, including beach, rocks or jetty	BNS 7	0		0.00	
Something else	BNS 7	0		0.00	
Total	BNS 7	456	1.00	2.02	1.00
Trailer motor boat	BNS 8	0		0.00	
Larger motor boat or launch	BNS 8	137	1.03	0.61	1.03
Trailer yacht	BNS 8	0		0.00	
Larger yacht or keeler	BNS 8	0		0.00	
Kayak, canoe, or rowboat	BNS 8	0		0.00	
Off land, including beach, rocks or jetty	BNS 8	0		0.00	
Something else	BNS 8	0		0.00	
Total	BNS 8	137	1.03	0.61	1.03

28.4 Bluenose Harvest By Method And QMA

National Panel Survey 2011–12 – Bluenose Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	BNS 1	6083	0.47	27.21	0.47
Long-line including set line, contiki or kite	BNS 1	210	1.02	0.94	1.02
Net (not including landing net used if caught on line)	BNS 1	0		0.00	
Pot (eg. for crayfish)	BNS 1	0		0.00	
Dredge, grapple or rake	BNS 1	0		0.00	
Hand gather or floundering from shore	BNS 1	0		0.00	
Hand gather by diving	BNS 1	0		0.00	
Spearfishing	BNS 1	0		0.00	
Some other method	BNS 1	0		0.00	
Total	BNS 1	6287	0.40	28.15	0.40
Rod or line (not long line)	BNS 2	444	0.48	1.99	0.48
Long-line including set line, contiki or kite	BNS 2	0		0.00	
Net (not including landing net used if caught on line)	BNS 2	0		0.00	
Pot (eg. for crayfish)	BNS 2	0		0.00	
Dredge, grapple or rake	BNS 2	0		0.00	
Hand gather or floundering from shore	BNS 2	0		0.00	
Hand gather by diving	BNS 2	0		0.00	
Spearfishing	BNS 2	0		0.00	
Some other method	BNS 2	0		0.00	
Total	BNS 2	444	0.48	1.99	0.48
Rod or line (not long line)	BNS 3	457	0.92	2.05	0.92
Long-line including set line, contiki or kite	BNS 3	0		0.00	
Net (not including landing net used if caught on line)	BNS 3	0		0.00	
Pot (eg. for crayfish)	BNS 3	0		0.00	
Dredge, grapple or rake	BNS 3	0		0.00	
Hand gather or floundering from shore	BNS 3	0		0.00	
Hand gather by diving	BNS 3	0		0.00	
Spearfishing	BNS 3	0		0.00	
Some other method	BNS 3	0		0.00	
Total	BNS 3	461	0.91	2.05	0.92
Rod or line (not long line)	BNS 7	452	1.00	2.02	1.00
Long-line including set line, contiki or kite	BNS 7	0		0.00	
Net (not including landing net used if caught on line)	BNS 7	0		0.00	
Pot (eg. for crayfish)	BNS 7	0		0.00	
Dredge, grapple or rake	BNS 7	0		0.00	
Hand gather or floundering from shore	BNS 7	0		0.00	
Hand gather by diving	BNS 7	0		0.00	
Spearfishing	BNS 7	0		0.00	
Some other method	BNS 7	0		0.00	
Total	BNS 7	456	1.00	2.02	1.00
Rod or line (not long line)	BNS 8	137	1.03	0.61	1.03
Long-line including set line, contiki or kite	BNS 8	0		0.00	
Net (not including landing net used if caught on line)	BNS 8	0		0.00	
Pot (eg. for crayfish)	BNS 8	0		0.00	
Dredge, grapple or rake	BNS 8	0		0.00	
Hand gather or floundering from shore	BNS 8	0		0.00	
Hand gather by diving	BNS 8	0		0.00	
Spearfishing	BNS 8	0		0.00	
Some other method	BNS 8	0		0.00	
Total	BNS 8	137	1.03	0.61	1.03

29. SEA PERCH HARVEST ESTIMATES

29.1 Sea Perch Harvest By Platform And FMA

National Panel Survey 2011–12 – Sea Perch Harvest By Platform And FMA					
Platform	FMA	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	1	431	0.63	0.20	0.63
Larger motor boat or launch	1	496	0.68	0.23	0.68
Trailer yacht	1	0		0.00	
Larger yacht or keeler	1	0		0.00	
Kayak, canoe, or rowboat	1	195	1.02	0.09	1.02
Off land, including beach, rocks or jetty	1	342	1.01	0.16	1.01
Something else	1	0		0.00	
Total	1	1464	0.40	0.67	0.40
Trailer motor boat	2	4952	0.91	2.58	0.91
Larger motor boat or launch	2	770	0.89	0.40	0.89
Trailer yacht	2	0		0.00	
Larger yacht or keeler	2	0		0.00	
Kayak, canoe, or rowboat	2	292	1.01	0.15	1.01
Off land, including beach, rocks or jetty	2	2151	1.04	1.12	1.04
Something else	2	0		0.00	
Total	2	8165	0.33	4.26	0.33
Trailer motor boat	3	92016	0.89	45.67	0.80
Larger motor boat or launch	3	16310	0.28	9.00	0.33
Trailer yacht	3	0		0.00	
Larger yacht or keeler	3	0		0.00	
Kayak, canoe, or rowboat	3	2661	0.93	1.16	0.93
Off land, including beach, rocks or jetty	3	1098	0.57	0.50	0.55
Something else	3	1869	0.82	0.82	0.82
Total	3	113955	0.25	57.14	0.25
Trailer motor boat	5	3122	0.75	1.42	0.75
Larger motor boat or launch	5	1396	0.82	0.63	0.82
Trailer yacht	5	0		0.00	
Larger yacht or keeler	5	0		0.00	
Kayak, canoe, or rowboat	5	0		0.00	
Off land, including beach, rocks or jetty	5	0		0.00	
Something else	5	0		0.00	
Total	5	4517	0.57	2.05	0.57
Trailer motor boat	7	22628	0.45	9.91	0.45
Larger motor boat or launch	7	2734	0.54	1.21	0.54
Trailer yacht	7	0		0.00	
Larger yacht or keeler	7	2139	0.88	0.95	0.88
Kayak, canoe, or rowboat	7	175	1.00	0.08	1.00
Off land, including beach, rocks or jetty	7	917	0.72	0.41	0.72
Something else	7	188	1.05	0.08	1.05
Total	7	28781	0.39	12.64	0.39
Trailer motor boat	8	2448	0.58	1.11	0.58
Larger motor boat or launch	8	957	1.03	0.43	1.03
Trailer yacht	8	0		0.00	
Larger yacht or keeler	8	0		0.00	
Kayak, canoe, or rowboat	8	0		0.00	
Off land, including beach, rocks or jetty	8	293	0.74	0.13	0.74
Something else	8	0		0.00	
Total	8	3699	0.48	1.68	0.48
Trailer motor boat	9	0		0.00	
Larger motor boat or launch	9	0		0.00	
Trailer yacht	9	0		0.00	
Larger yacht or keeler	9	0		0.00	
Kayak, canoe, or rowboat	9	0		0.00	
Off land, including beach, rocks or jetty	9	0		0.00	
Something else	9	0		0.00	
Total	9	0		0.00	

29.2 Sea Perch Harvest By Method And FMA

National Panel Survey 2011–12 – Sea Perch Harvest By Method And FMA					
Method	FMA	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	1	1464	0.65	0.67	0.65
Long-line including set line, contiki or kite	1	0		0.00	
Net (not including landing net used if caught on line)	1	0		0.00	
Pot (eg. for crayfish)	1	0		0.00	
Dredge, grapple or rake	1	0		0.00	
Hand gather or floundering from shore	1	0		0.00	
Hand gather by diving	1	0		0.00	
Spearfishing	1	0		0.00	
Some other method	1	0		0.00	
Total	1	1464	0.40	0.67	0.40
Rod or line (not long line)	2	8165	0.51	4.26	0.51
Long-line including set line, contiki or kite	2	0		0.00	
Net (not including landing net used if caught on line)	2	0		0.00	
Pot (eg. for crayfish)	2	0		0.00	
Dredge, grapple or rake	2	0		0.00	
Hand gather or floundering from shore	2	0		0.00	
Hand gather by diving	2	0		0.00	
Spearfishing	2	0		0.00	
Some other method	2	0		0.00	
Total	2	8165	0.33	4.26	0.33
Rod or line (not long line)	3	112256	0.28	56.03	0.26
Long-line including set line, contiki or kite	3	981	0.98	0.80	0.99
Net (not including landing net used if caught on line)	3	0		0.00	
Pot (eg. for crayfish)	3	717	0.70	0.31	0.70
Dredge, grapple or rake	3	0		0.00	
Hand gather or floundering from shore	3	0		0.00	
Hand gather by diving	3	0		0.00	
Spearfishing	3	0		0.00	
Some other method	3	0		0.00	
Total	3	113955	0.25	57.14	0.25
Rod or line (not long line)	5	4517	0.45	2.05	0.45
Long-line including set line, contiki or kite	5	0		0.00	
Net (not including landing net used if caught on line)	5	0		0.00	
Pot (eg. for crayfish)	5	0		0.00	
Dredge, grapple or rake	5	0		0.00	
Hand gather or floundering from shore	5	0		0.00	
Hand gather by diving	5	0		0.00	
Spearfishing	5	0		0.00	
Some other method	5	0		0.00	
Total	5	4517	0.57	2.05	0.57
Rod or line (not long line)	7	28210	0.31	12.38	0.31
Long-line including set line, contiki or kite	7	571	1.05	0.25	1.05
Net (not including landing net used if caught on line)	7	0		0.00	
Pot (eg. for crayfish)	7	0		0.00	
Dredge, grapple or rake	7	0		0.00	
Hand gather or floundering from shore	7	0		0.00	
Hand gather by diving	7	0		0.00	
Spearfishing	7	0		0.00	
Some other method	7	0		0.00	
Total	7	28781	0.39	12.64	0.39
Rod or line (not long line)	8	3699	0.48	1.68	0.48
Long-line including set line, contiki or kite	8	0		0.00	
Net (not including landing net used if caught on line)	8	0		0.00	
Pot (eg. for crayfish)	8	0		0.00	
Dredge, grapple or rake	8	0		0.00	
Hand gather or floundering from shore	8	0		0.00	
Hand gather by diving	8	0		0.00	
Spearfishing	8	0		0.00	
Some other method	8	0		0.00	
Total	8	3699	0.48	1.68	0.48
Rod or line (not long line)	9	0		0.00	
Long-line including set line, contiki or kite	9	0		0.00	
Net (not including landing net used if caught on line)	9	0		0.00	
Pot (eg. for crayfish)	9	0		0.00	
Dredge, grapple or rake	9	0		0.00	
Hand gather or floundering from shore	9	0		0.00	
Hand gather by diving	9	0		0.00	
Spearfishing	9	0		0.00	
Some other method	9	0		0.00	
Total	9	0		0.00	

29.3 Sea Perch Harvest By Platform And QMA

National Panel Survey 2011–12 – Sea Perch Harvest By Platform And QMA					
Platform	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Trailer motor boat	SPE 1	431	0.63	0.20	0.63
Larger motor boat or launch	SPE 1	496	0.68	0.23	0.68
Trailer yacht	SPE 1	0		0.00	
Larger yacht or keeler	SPE 1	0		0.00	
Kayak, canoe, or rowboat	SPE 1	195	1.02	0.09	1.02
Off land, including beach, rocks or jetty	SPE 1	342	1.01	0.16	1.01
Something else	SPE 1	0		0.00	
Total	SPE 1	1464	0.40	0.67	0.40
Trailer motor boat	SPE 2	4952	0.91	2.58	0.91
Larger motor boat or launch	SPE 2	770	0.89	0.40	0.89
Trailer yacht	SPE 2	0		0.00	
Larger yacht or keeler	SPE 2	0		0.00	
Kayak, canoe, or rowboat	SPE 2	292	1.01	0.15	1.01
Off land, including beach, rocks or jetty	SPE 2	2151	1.04	1.12	1.04
Something else	SPE 2	0		0.00	
Total	SPE 2	8160	0.33	4.26	0.33
Trailer motor boat	SPE 3	92016	0.89	45.67	0.80
Larger motor boat or launch	SPE 3	16310	0.28	9.00	0.33
Trailer yacht	SPE 3	0		0.00	
Larger yacht or keeler	SPE 3	0		0.00	
Kayak, canoe, or rowboat	SPE 3	2661	0.93	1.16	0.93
Off land, including beach, rocks or jetty	SPE 3	1098	0.57	0.50	0.55
Something else	SPE 3	1869	0.82	0.82	0.82
Total	SPE 3	107093	0.27	57.14	0.25
Trailer motor boat	SPE 5	3122	0.75	1.42	0.75
Larger motor boat or launch	SPE 5	1396	0.82	0.63	0.82
Trailer yacht	SPE 5	0		0.00	
Larger yacht or keeler	SPE 5	0		0.00	
Kayak, canoe, or rowboat	SPE 5	0		0.00	
Off land, including beach, rocks or jetty	SPE 5	0		0.00	
Something else	SPE 5	0		0.00	
Total	SPE 5	4523	0.57	2.05	0.57
Trailer motor boat	SPE 7	22628	0.45	9.91	0.45
Larger motor boat or launch	SPE 7	2734	0.54	1.21	0.54
Trailer yacht	SPE 7	0		0.00	
Larger yacht or keeler	SPE 7	2139	0.88	0.95	0.88
Kayak, canoe, or rowboat	SPE 7	175	1.00	0.08	1.00
Off land, including beach, rocks or jetty	SPE 7	917	0.72	0.41	0.72
Something else	SPE 7	188	1.05	0.08	1.05
Total	SPE 7	28792	0.39	12.64	0.39
Trailer motor boat	SPE 8	2448	0.58	1.11	0.58
Larger motor boat or launch	SPE 8	957	1.03	0.43	1.03
Trailer yacht	SPE 8	0		0.00	
Larger yacht or keeler	SPE 8	0		0.00	
Kayak, canoe, or rowboat	SPE 8	0		0.00	
Off land, including beach, rocks or jetty	SPE 8	293	0.74	0.13	0.74
Something else	SPE 8	0		0.00	
Total	SPE 8	3697	0.48	1.68	0.48
Trailer motor boat	SPE 9	0		0.00	
Larger motor boat or launch	SPE 9	0		0.00	
Trailer yacht	SPE 9	0		0.00	
Larger yacht or keeler	SPE 9	0		0.00	
Kayak, canoe, or rowboat	SPE 9	0		0.00	
Off land, including beach, rocks or jetty	SPE 9	0		0.00	
Something else	SPE 9	0		0.00	
Total	SPE 9	0		0.00	

29.4 Sea Perch Harvest By Method And QMA

National Panel Survey 2011–12 – Sea Perch Harvest By Method And QMA					
Method	Fishstock	Harvest Count	CV	Harvest Tonnes	CV
Rod or line (not long line)	SPE 1	1464	0.65	0.67	0.65
Long-line including set line, contiki or kite	SPE 1	0		0.00	
Net (not including landing net used if caught on line)	SPE 1	0		0.00	
Pot (eg. for crayfish)	SPE 1	0		0.00	
Dredge, grapple or rake	SPE 1	0		0.00	
Hand gather or floundering from shore	SPE 1	0		0.00	
Hand gather by diving	SPE 1	0		0.00	
Spearfishing	SPE 1	0		0.00	
Some other method	SPE 1	0		0.00	
Total	SPE 1	1464	0.40	0.67	0.40
Rod or line (not long line)	SPE 2	8165	0.51	4.26	0.51
Long-line including set line, contiki or kite	SPE 2	0		0.00	
Net (not including landing net used if caught on line)	SPE 2	0		0.00	
Pot (eg. for crayfish)	SPE 2	0		0.00	
Dredge, grapple or rake	SPE 2	0		0.00	
Hand gather or floundering from shore	SPE 2	0		0.00	
Hand gather by diving	SPE 2	0		0.00	
Spearfishing	SPE 2	0		0.00	
Some other method	SPE 2	0		0.00	
Total	SPE 2	8160	0.33	4.26	0.33
Rod or line (not long line)	SPE 3	112256	0.28	56.03	0.26
Long-line including set line, contiki or kite	SPE 3	981	0.98	0.80	0.99
Net (not including landing net used if caught on line)	SPE 3	0		0.00	
Pot (eg. for crayfish)	SPE 3	717	0.70	0.31	0.70
Dredge, grapple or rake	SPE 3	0		0.00	
Hand gather or floundering from shore	SPE 3	0		0.00	
Hand gather by diving	SPE 3	0		0.00	
Spearfishing	SPE 3	0		0.00	
Some other method	SPE 3	0		0.00	
Total	SPE 3	107093	0.27	57.14	0.25
Rod or line (not long line)	SPE 5	4517	0.45	2.05	0.45
Long-line including set line, contiki or kite	SPE 5	0		0.00	
Net (not including landing net used if caught on line)	SPE 5	0		0.00	
Pot (eg. for crayfish)	SPE 5	0		0.00	
Dredge, grapple or rake	SPE 5	0		0.00	
Hand gather or floundering from shore	SPE 5	0		0.00	
Hand gather by diving	SPE 5	0		0.00	
Spearfishing	SPE 5	0		0.00	
Some other method	SPE 5	0		0.00	
Total	SPE 5	4523	0.57	2.05	0.57
Rod or line (not long line)	SPE 7	28210	0.31	12.38	0.31
Long-line including set line, contiki or kite	SPE 7	571	1.05	0.25	1.05
Net (not including landing net used if caught on line)	SPE 7	0		0.00	
Pot (eg. for crayfish)	SPE 7	0		0.00	
Dredge, grapple or rake	SPE 7	0		0.00	
Hand gather or floundering from shore	SPE 7	0		0.00	
Hand gather by diving	SPE 7	0		0.00	
Spearfishing	SPE 7	0		0.00	
Some other method	SPE 7	0		0.00	
Total	SPE 7	28792	0.39	12.64	0.39
Rod or line (not long line)	SPE 8	3699	0.48	1.68	0.48
Long-line including set line, contiki or kite	SPE 8	0		0.00	
Net (not including landing net used if caught on line)	SPE 8	0		0.00	
Pot (eg. for crayfish)	SPE 8	0		0.00	
Dredge, grapple or rake	SPE 8	0		0.00	
Hand gather or floundering from shore	SPE 8	0		0.00	
Hand gather by diving	SPE 8	0		0.00	
Spearfishing	SPE 8	0		0.00	
Some other method	SPE 8	0		0.00	
Total	SPE 8	3697	0.48	1.68	0.48
Rod or line (not long line)	SPE 9	0		0.00	
Long-line including set line, contiki or kite	SPE 9	0		0.00	
Net (not including landing net used if caught on line)	SPE 9	0		0.00	
Pot (eg. for crayfish)	SPE 9	0		0.00	
Dredge, grapple or rake	SPE 9	0		0.00	
Hand gather or floundering from shore	SPE 9	0		0.00	
Hand gather by diving	SPE 9	0		0.00	
Spearfishing	SPE 9	0		0.00	
Some other method	SPE 9	0		0.00	
Total	SPE 9	0		0.00	