



Fish and invertebrate bycatch in New Zealand deepwater fisheries from 1990–91 until 2011–12

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EXECUTIVE SUMMARY

Anderson, O.F. (2014). Fish and invertebrate bycatch in New Zealand deepwater fisheries from 1990–91 until 2011–12.

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Commercial catch-effort data and fisheries observer records of catch by species provided by the Ministry for Primary Industries (MPI) were used to estimate the level of individual fish and invertebrate species bycatch in each fishing year from 1990–91 to 2011–12 for the following Tier-1 deepwater fisheries:

Trawl fisheries

- Arrow squid (SQU)
- Hoki/hake ling (HOK/HAK/LIN)
- Southern blue whiting (SBW)
- Jack mackerel (JMA)
- Orange roughy (ORH)
- Oreo (OEO)
- Scampi (SCI)

Longline fisheries

- Ling (LIN)

The estimation process for the ling longline fishery, and the arrow squid fishery excluding 2011–12, stratified according to fishery area, and estimates of precision were calculated using bootstrap methods. For the remaining fisheries no stratification was used and no estimates of precision were calculated.

1. INTRODUCTION

This report was prepared as an output from the Ministry for Primary Industries project DAE2010-02 “Bycatch monitoring and quantification of deepwater stocks” and addresses the following Specific objective for year-3.

4. To provide annual estimates of bycatch for nine Tier-1 species fisheries (SQU, SCI, HAK, HOK, JMA, ORH, OEO, LIN, SBW).

The purpose of this research was to compile a list of all fish and invertebrate bycatch species in New Zealand deepwater fisheries, with estimates of annual catch levels, which could be relatively rapidly produced and regularly updated. This would allow early detection of any downward (or upward) trends in bycatch of individual species in all Tier-1 deepwater fisheries, not just in the single fishery typically examined in any one year. By fine-tuning these estimates for the fishery under closer examination in each year (in this year the ling longline fishery) and providing estimates of precision, an overall picture of the annual bycatch of a large number of species, across each fishery, can be built up over multiple years—with increasing precision in each year.

This report provides the second iteration of this plan, the first (Anderson 2013a) provided fine-tuned estimates only for the arrow squid trawl fishery.

2. METHODS

Observer bycatch data were extracted from the MPI *cod* database for each of the Tier-1 species target fisheries (hoki/hake/ling trawl, jack mackerel trawl, orange roughy trawl, oreo trawl, southern blue whiting trawl, scampi trawl, arrow squid trawl, and ling longline) for the period 1990–91 to 2011–12. These data were subjected to the same error-checking procedures used for the arrow squid fishery by Anderson (2013b).

The total catch and frequency of capture of each bycatch species was examined in each fishery, and those species for which there was a total of less than 10 kg of observed catch over the entire 22-year period, or which were observed caught on five or less occasions, were disregarded. It was considered that either the capture of such species was so rare as to be irrelevant, or the likelihood was high that such records were the result of the species code being incorrectly recorded by the observer. Annual bycatch ratios for the remaining individual QMS and non-QMS species (fish and invertebrates) were then calculated for each fishery.

Commercial catch records were also obtained from the Ministry for Primary Industries for each fishery, groomed according to the procedures described in Anderson (2013b), then used to calculate annual effort (number of tows or longline sets) for each fishery.

For each fishery, excluding the ling longline fishery and all but the 2011–12 fishing year for the arrow squid fishery, the annual species specific bycatch ratios were multiplied by the annual effort in the fishery, without stratification, to produce simple estimates of total annual

bycatch without any estimates of precision. An indication of whether the bycatch of each species increased, decreased, or stayed relatively unchanged over time was calculated in the form of a slope coefficient for a loglinear regression fitted to the data.

For the ling longline fishery, the procedure was similar but was extended to include an estimate of precision derived from an area-stratified bootstrapping procedure used for the combined species groups (QMS, non-QMS, and invertebrates) in Anderson (2014). This procedure rounds the estimates of total annual catch to the nearest 0.1 t and so species with less than this level of catch in at least one year were excluded. The same procedure was applied to the arrow squid fishery in Anderson (2013a), except that estimates were rounded to the nearest 10 t, and the results are repeated here for the years 1990–91 to 2010–11; new (coarse) estimates were added for 2011–12.

See Anderson (2013b) for a more detailed description of the general methodology used to extract and groom observer and commercial fishing return data, calculate bycatch ratios and annual levels, and estimate precision.

Tables were constructed for each fishery showing the annual estimated bycatch for each species and the slope coefficient. For all years in the ling longline fishery and for all years except 2011–12 in the arrow squid fishery, the CV for each estimate was also provided. A colour-coded summary table is also provided, in order to clearly indicate the species in each fishery with declining or increasing catch levels.

3. RESULTS

Annual bycatch estimates for individual species in each of the nine Tier-1 fisheries are given in Tables 1 to 8. The following is a brief summary of these tables, including figures showing the annual bycatch of species showing the greatest increase and decrease over time. Note that in some cases the apparent increase or decrease in bycatch of a species is likely to be due to improvements in species identification, or changes in observer recording practices, over time. For example, in the arrow squid fishery, the increase in bycatch of smooth red swimming crabs (*Nectocarcinus bennetti*) appears to be at the expense of bycatch of the similar-looking paddle crabs (*Ovalipes catharus*), and the increase in bycatch of floppy tubular sponges in the hoki/hake/ling trawl fishery actually reflects the improved identification of sponges in more recent years. Where the possibility of this was strongly suspected in the species figured, it has been noted in the figure captions; for other species, e.g., slender jack mackerel, the changes in bycatch may reflect real changes in species abundance.

Arrow squid trawl fishery

- The most commonly caught bycatch species were barracouta (*Thyrsites atun*, BAR), silver warehou (*Seriolella punctata*, SWA), and spiny dogfish (*Squalus acanthias*, SPD).
- Of the 99 bycatch species examined, 13 have shown a decrease in catch over time and 38 an increase in catch.
- The species showing the greatest decline were paddle crabs (PAD), slender jack mackerel (*Trachurus murphyi*, JMM), and greenback jack mackerel (*Trachurus declivis*) (Figure 1).
- The species showing the greatest increase were smooth red swimming crab (NCB), silver dory (*Cyttus novaezealandiae*, SDO), and giant spider crab (*Jacquinotia edwardsii*, GSC) (Figure 1).

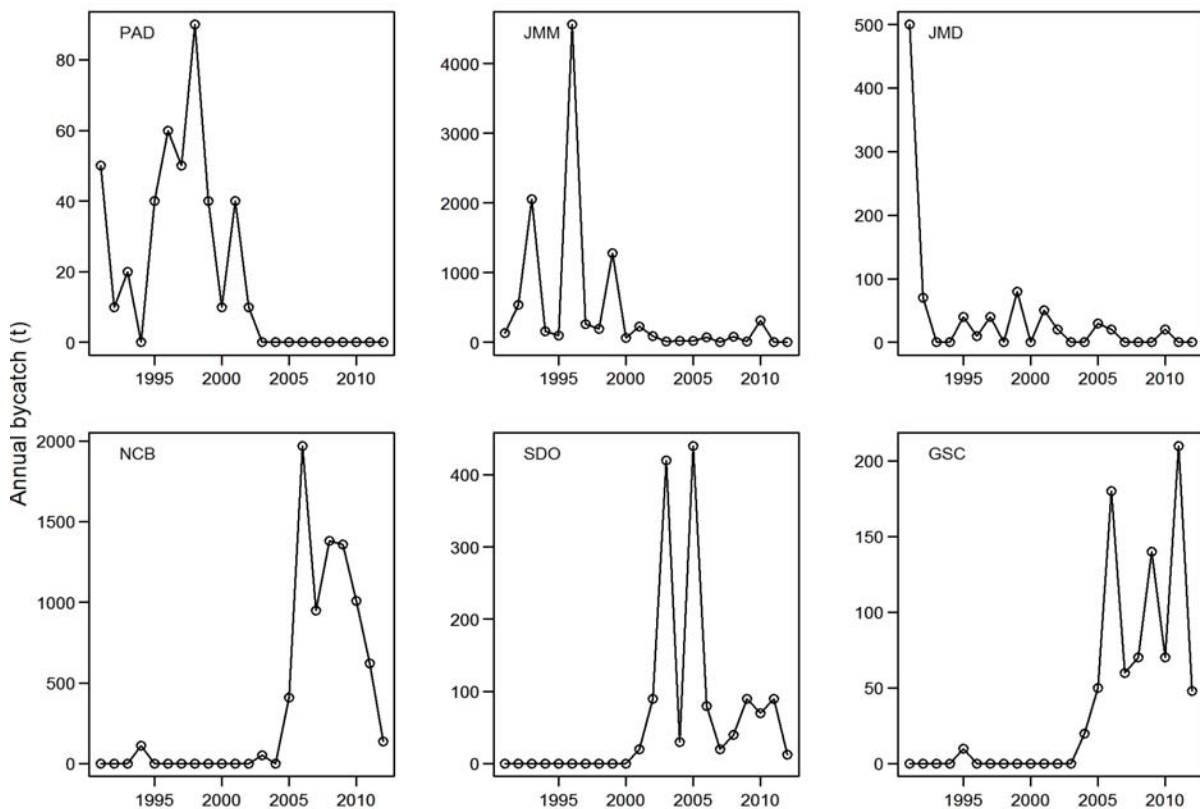


Figure 1: Annual bycatch estimates in the arrow squid trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes. Note: the increase in PAD and decrease in NCB may be due to NCB being erroneously recorded as PAD before 2003–04.

Southern blue whiting trawl fishery

- The most commonly caught bycatch species were ling (*Genypterus blacodes*, LIN), hoki (*Macruronus novaezealandiae*, HOK), and hake (*Merluccius australis*, HAK).
- Of the 68 bycatch species examined, 12 have shown a decrease in catch over time and 4 an increase in catch.
- The species showing the greatest decline were hoki (HOK), moonfish (*Lampris guttatus*, MOO) and dark ghost shark (*Hydrolagus novaezealandiae*, GSH) (Figure 2).
- The species showing the greatest increase were opah (*Lampris immaculatus*, PAH), ray's bream (*Brama brama*, RBM), and silverside (*Argentina elongate*, SSI) (Figure 2).

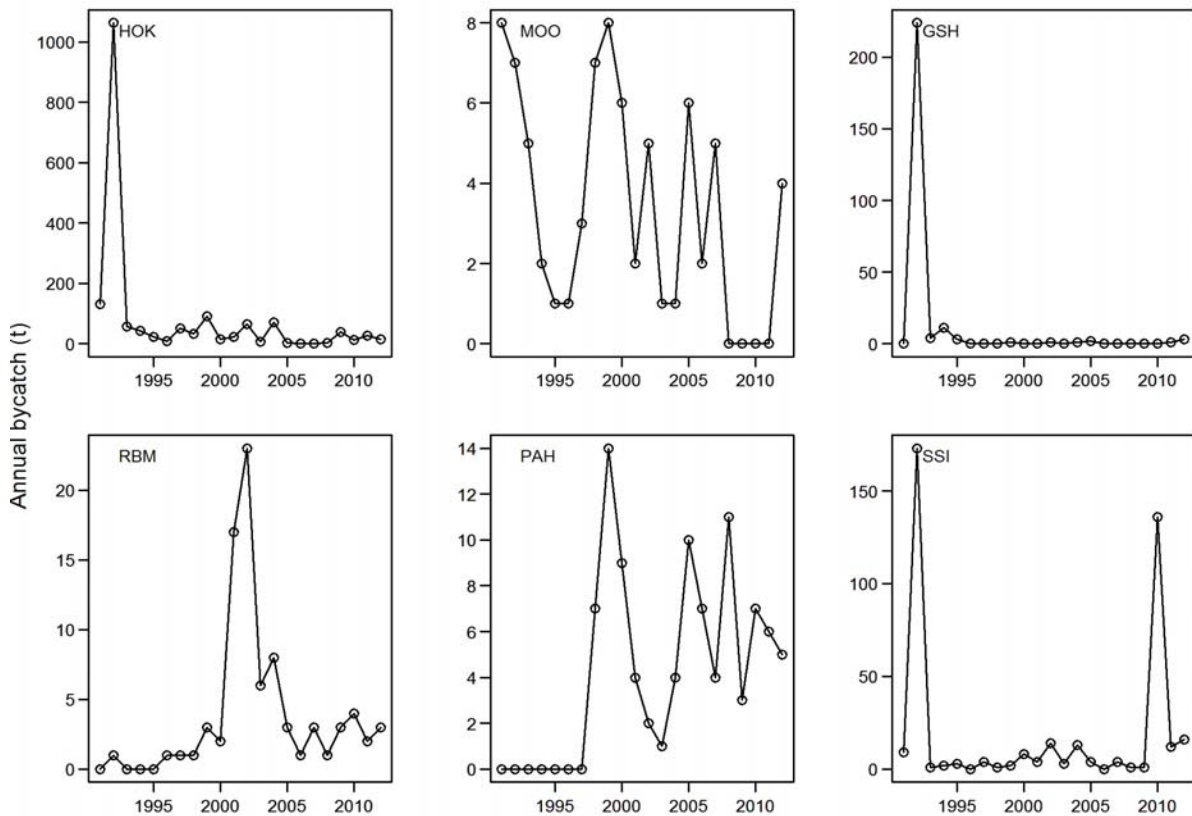


Figure 2: Annual bycatch estimates in the southern blue whiting trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes.

Scampi trawl fishery

- The most commonly caught bycatch species were javelinfinch (*Lepidorhynchus denticulatus*, JAV), unspecified rattails (Macrouridae, RAT), and sea perch (*Helicolenus* spp., SPE).
- Of the 235 bycatch species examined, 51 have shown a decrease in catch over time and 47 an increase in catch.
- The species showing the greatest decline were skates (Rajidae and Arhynchobatidae, SKA), bluenose (*Hyperoglyphe antarctica*, BNS) and alfonsino (*Beryx* spp., BYX) (Figure 3).
- The species showing the greatest increase were Spiny masking crab (*Teratomaia richardsoni*), jackknife prawn (*Haliporoides sibogae*, HSI), and gastropods (Class Gastropoda, GAS) (Figure 3).

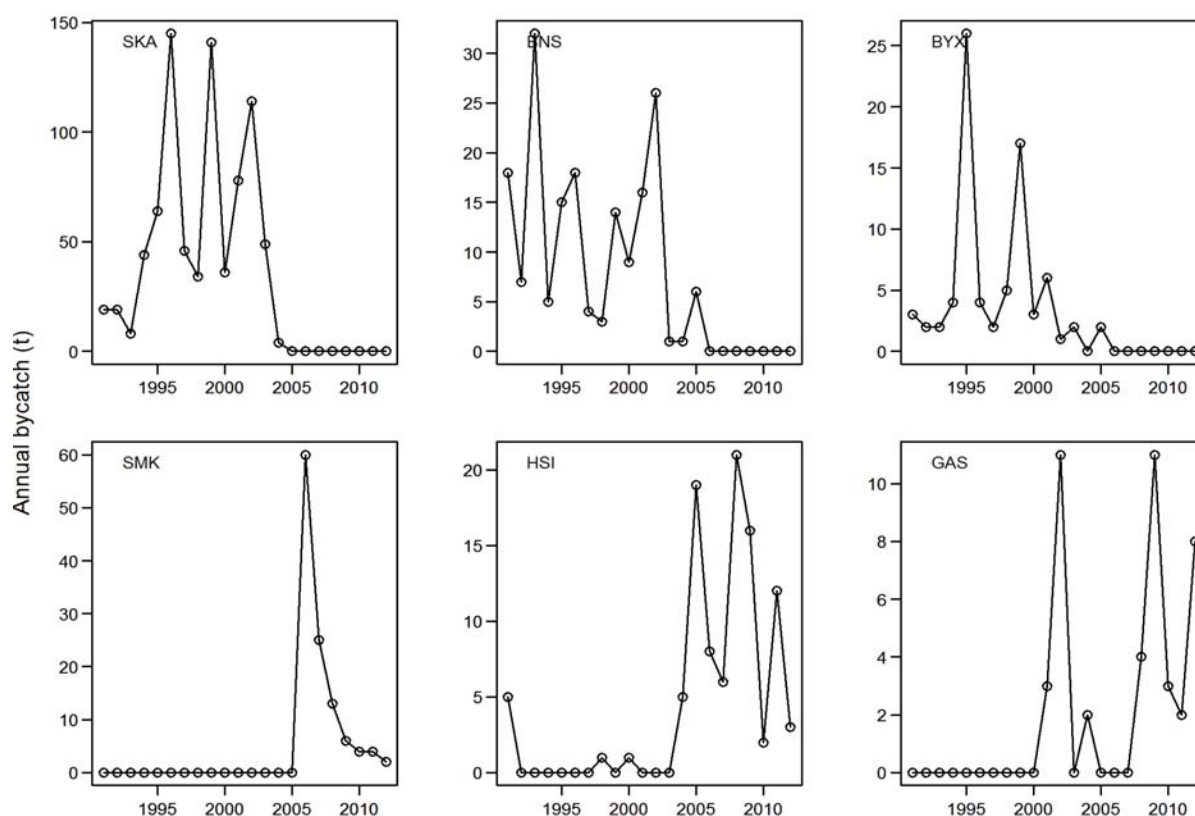


Figure 3: Annual bycatch estimates in the scampi trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes. Note: skates (SKA) were mainly recorded as rough skate (RSK) or smooth skate (SSK) after 2002–03; spiny masking crabs may not have been well identified before 2004–05.

Jack mackerel trawl fishery

- The most commonly caught bycatch species were barracouta (BAR), blue mackerel (*Scomber australasicus*, EMA), and frostfish (*Lepidopus caudatus*, FRO).
- Of the 117 bycatch species examined, 33 have shown a decrease in catch over time and 18 an increase in catch.
- The species showing the greatest decline were dark ghost shark (GSH), sea perch (*Helicolenus* spp., SPE), and carpet shark (*Cephaloscyllium isabellum*, CAR) (Figure 4).
- The species showing the greatest increase were pilchard (*Sardinops sagax*, PIL), kingfish (*Seriola lalandi*, KIN), and silver dory (*Cyttus novaezealandiae*, SDO) (Figure 4).

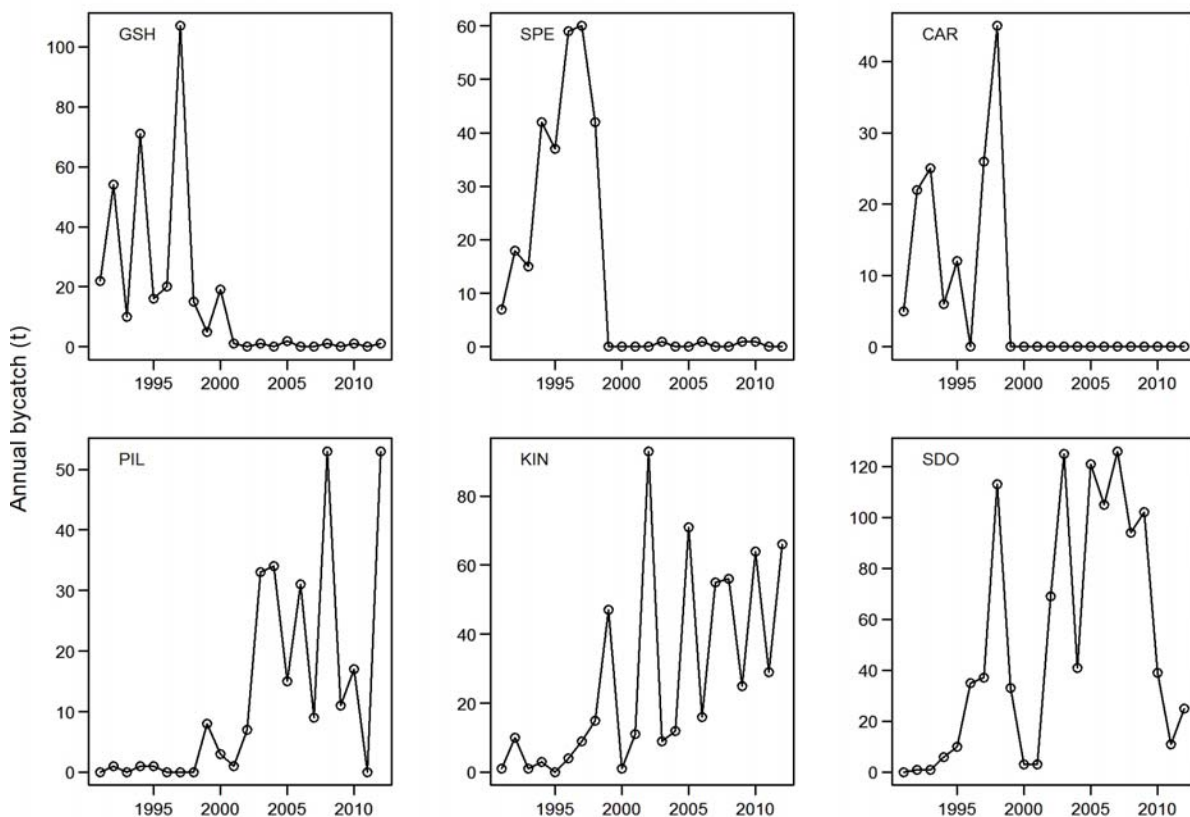


Figure 4: Annual bycatch estimates in the jack mackerel trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes.

Orange roughy trawl fishery

- The most commonly caught bycatch species were smooth oreo (*Pseudocyttus maculatus*, SSO), black oreo (*Allocyttus niger*, BOE), and black cardinalfish (*Epigonus telescopus*, CDL).
- Of the 209 bycatch species examined, 31 have shown a decrease in catch over time and 41 an increase in catch.
- The species showing the greatest decline were spiny dogfish (SPD), black oreo (*Allocyttus niger*, BOE), and cardinalfishes (Epigonidae, CDL) (Figure 5).
- The species showing the greatest increase were morid cods (Moridae, MOD), longnose velvet dogfish (*Centroscymnus crepidater*, CYP), and bushy hard coral (*Goniocorella dumosa*, GDU) (Figure 5).

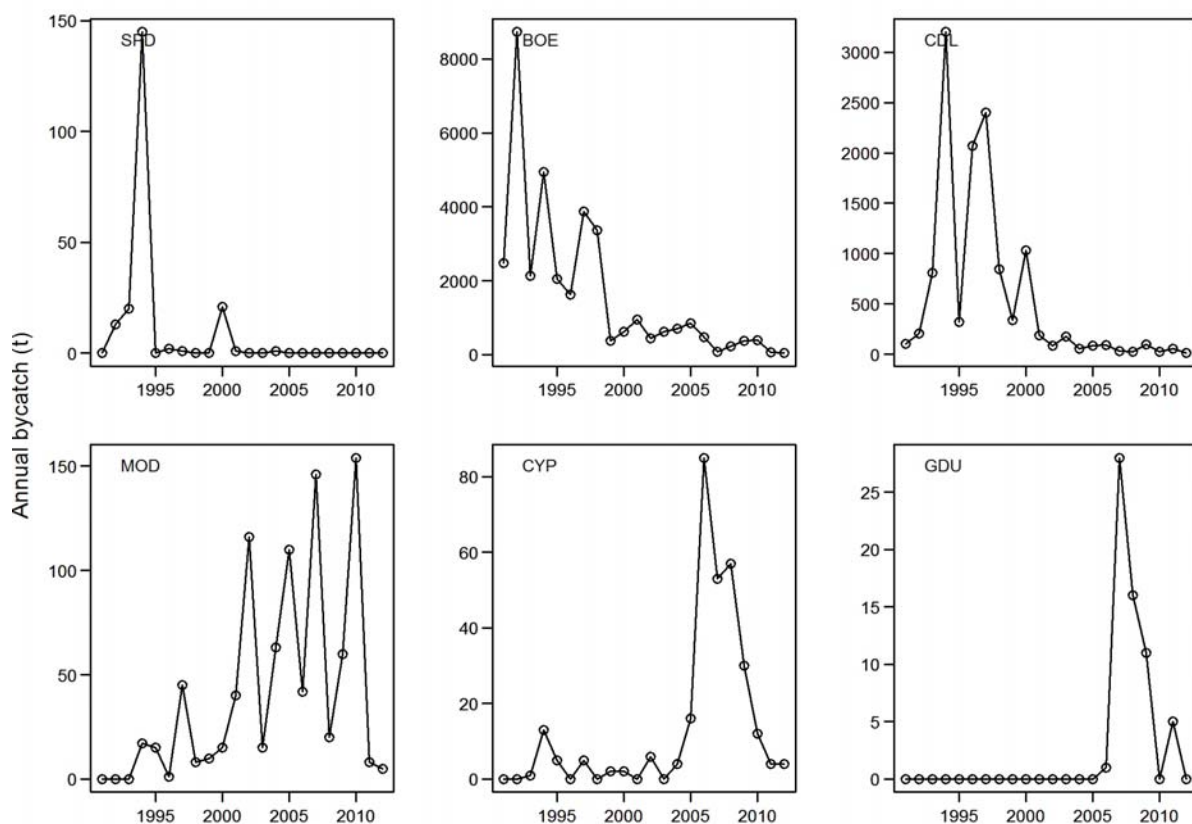


Figure 5: Annual bycatch estimates in the orange roughy trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes. Note: *Goniocorella dumosa* may not have been well identified before 2005–06.

Oreo trawl fishery

- The most commonly caught bycatch species were orange roughy (*Hoplostethus atlanticus*, ORH), unspecified shark (SHA), and hoki (HOK).
- Of the 117 bycatch species examined, 3 have shown a decrease in catch over time and 28 an increase in catch.
- The species showing the greatest decline were dark ghost shark (GSH), unspecified shark (SHA), and ling (LIN) (Figure 6).
- The species showing the greatest increase were ridge-scaled rattail (*Macrourus carinatus*, MCA), Baxter's lantern dogfish (*Etmopterus baxteri*, ETB), and pale ghost shark (GSP) (Figure 6).

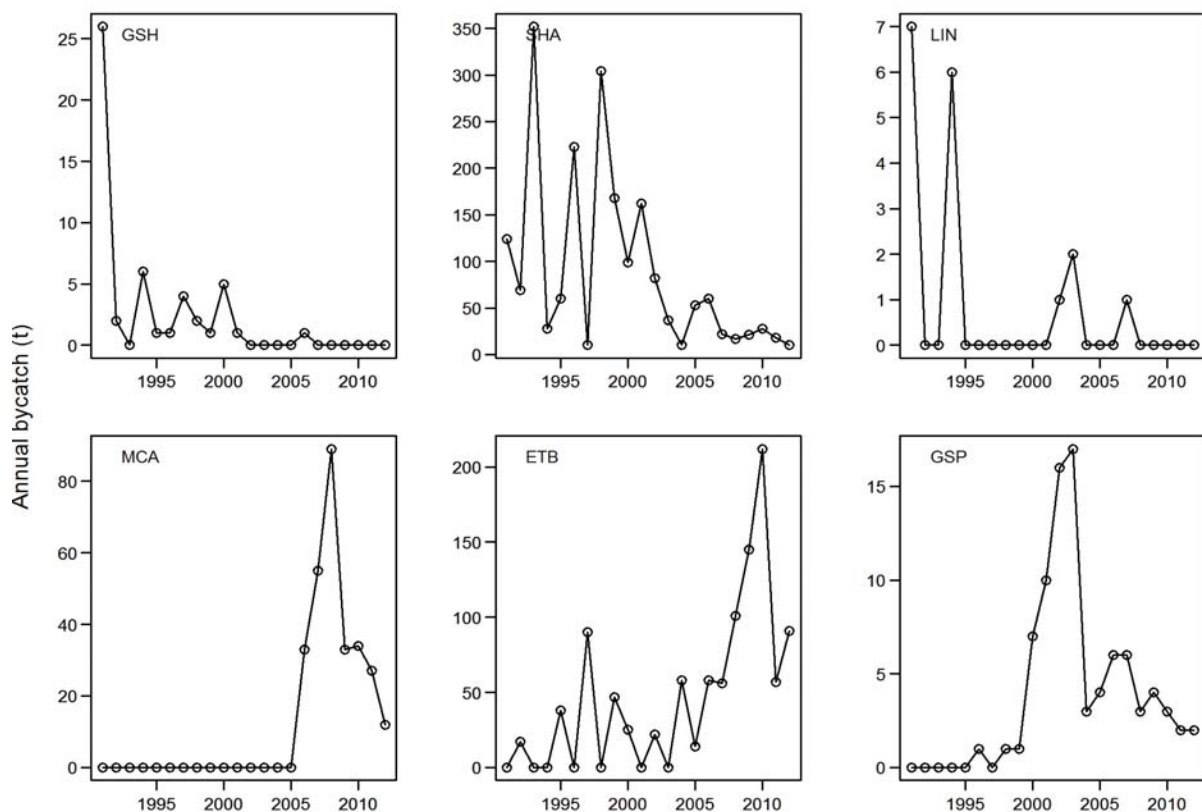


Figure 6: Annual bycatch estimates in the oreo trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes. Note: sharks (SHA) may have been identified to an increasingly higher taxonomic level over time; rattails such as MCA may not have been well identified in earlier years.

Hoki, hake, ling trawl fishery

- The most commonly caught bycatch species were silver warehou (SWA), javelinfish (JAV), unspecified rattails (Macrouridae, RAT).
- Of the 358 bycatch species examined, 46 have shown a decrease in catch over time and 96 an increase in catch.
- The species showing the greatest decline were skates (SKA), slender jack mackerel (JMM), and dogfishes (*Etmopterus* spp., ETM) (Figure 7).
- The species showing the greatest increase were floppy tubular sponge (*Hyalascus* sp., HYA), umbrella octopus (*Opisthoteuthis* spp.), and scabbardfish (*Benthodesmus* spp., BEN) (Figure 7).

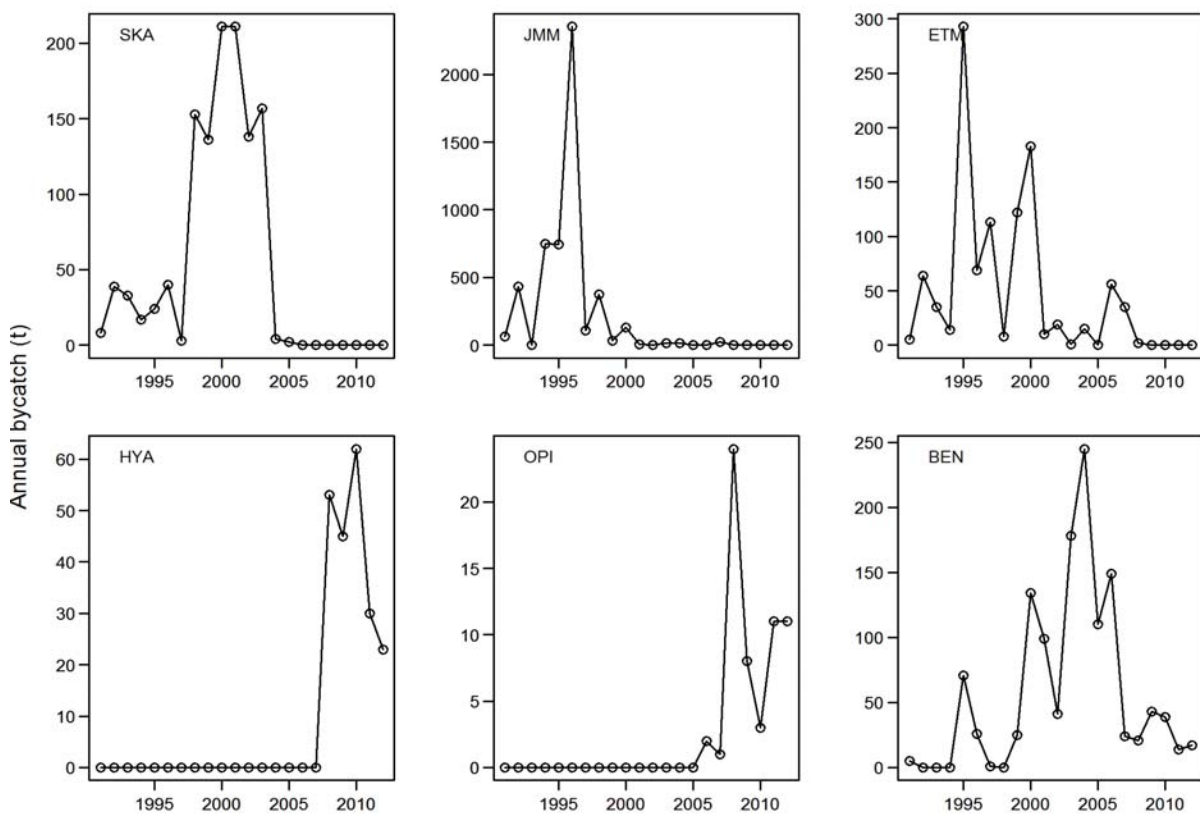


Figure 7: Annual bycatch estimates in the hoki, hake, ling trawl fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1990–91 and 2011–12. See text above for explanation of the species codes. Note: skates (SKA) were mainly recorded as rough skate (RSK) or smooth skate (SSK) after 2002–03; some species (e.g., the sponge HYA and the octopus OPI) may not have been well identified in earlier years.

Ling longline fishery

- Observers began monitoring this fishery in 1992–93, therefore bycatch estimates are not available for 1990–91 and 1991–92.
- The most commonly caught bycatch species were spiny dogfish (SPD), ribaldo (*Mora moro*, RIB), and shovelnose dogfish (*Deania calcea*, SND).
- Of the 119 bycatch species examined, 21 have shown a decrease in catch over time and 38 an increase in catch.
- Among the species showing the greatest decline were bluenose (*Hyperoglyphe antarctica*, BNS), Ray's bream (*Brama brama*, RBM), and hapuku (*Polyprion oxygeneios*, HAP) (Figure 8).
- The species showing the greatest increase were the hairy conger (HCO), hagfish (*Epratrretus cirrhatus*, HAG), and pale ghost shark (*Hydrolagus bemisi*, GSP) (Figure 8).

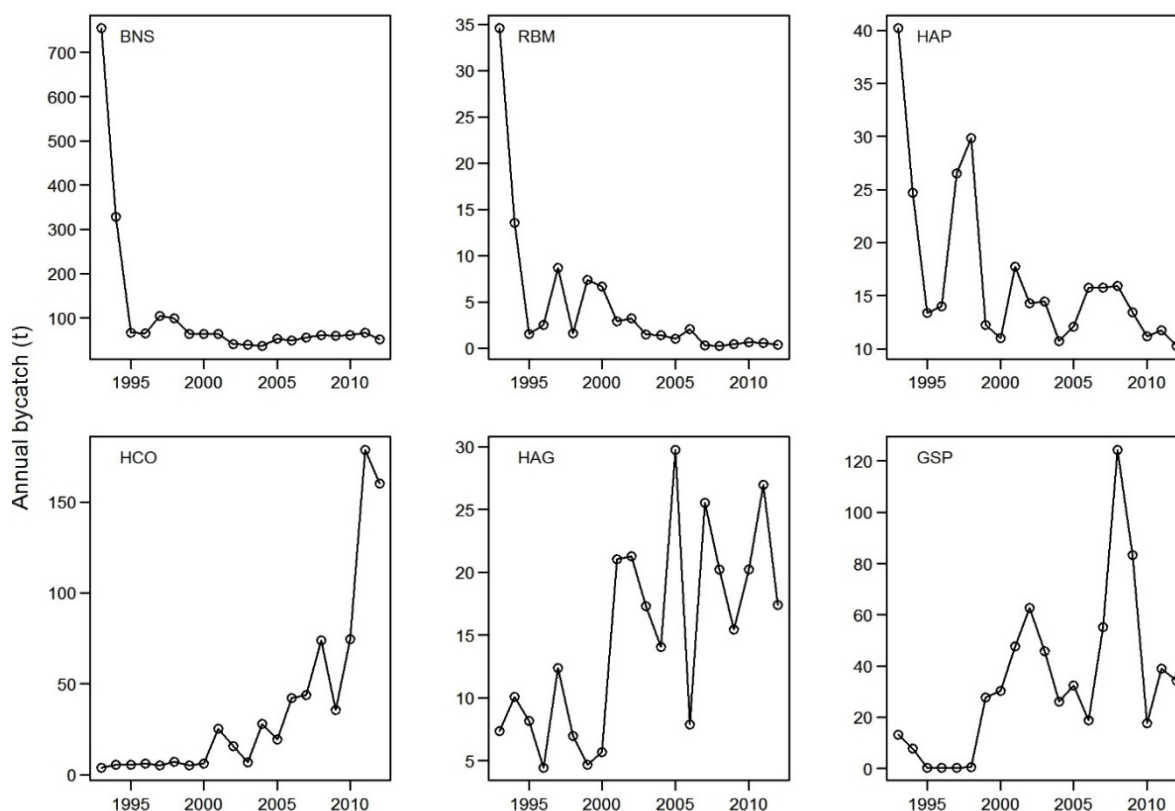


Figure 8: Annual bycatch estimates in the ling longline fishery for the species which have shown the greatest decrease (top) and greatest increase (bottom) between 1992–93 and 2011–12. See text above for explanation of the species codes.

4. POTENTIAL FUTURE ANALYSES

- The use of MPI 3-letter codes to record the observed catch in these fisheries has changed over time. The improved ability of observers to identify components of the catch to a greater taxonomic resolution has meant that some generic codes (e.g., SHA, shark; and CRB, crab) have been used with decreasing frequency, and new codes have been introduced as taxonomic knowledge has improved among both scientists and observers, and as the observer programme and MPI databases have matured. For future analyses a complete examination of these changes should be considered and codes combined where appropriate to improve the value of these summaries.
- Some apparent declines or increases in bycatch may be due to a substantial and persistent change in the area of operation of the fishery, rather than a decline in abundance. Future analyses could consider a spatial examination of species bycatch, where there are sufficient data.
- Graphical summaries could be expanded to include, for example, the key bycatch species in each fishery, in addition to those showing large declines or increases.

5. ACKNOWLEDGMENTS

Thanks to Dan MacGibbon (NIWA) for his review of this report. This project was funded by the Ministry for Primary Industries (Project DAE2010/02).

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Table 1: Arrow squid trawl fishery. Total annual bycatch estimates (t) (with estimated CVs in parentheses where available—see text) for individual species, based on observer catch rates. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code. See <http://marlin.niwa.co.nz> for species code definitions).

	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
BAR ⁽⁰⁾	8220(16)	7010(31)	6220(11)	2650(21)	1250(17)	6380(12)	990(22)	1420(14)	6960(16)	3880(11)	10200(12)	7930(16)	3740(23)	5250(26)	3480(19)	5700(20)	850(30)	3750(18)	2410(23)	3220(20)	2880(19)	2688
SWA ^(0.1)	250(28)	150(45)	780(49)	640(130)	360(68)	100(47)	1780(29)	2090(23)	3350(23)	970(14)	2150(12)	2390(24)	5280(25)	3190(14)	3170(40)	2020(19)	11280(31)	570(13)	1000(22)	790(13)	710(24)	471
SPD ⁽⁰⁾	420(39)	710(36)	570(39)	1600(16)	120(41)	10(39)	340(41)	210(29)	2230(43)	430(47)	1850(16)	3170(21)	2660(18)	800(20)	2220(39)	860(24)	3410(28)	290(20)	530(27)	840(29)	510(27)	265
JMA ^(-0.2)	1530(46)	420(34)	1680(27)	560(47)	350(35)	3520(19)	4190(20)	610(30)	670(44)	970(26)	500(29)	2240(21)	10(22)	140(39)	190(48)	170(33)	20(82)	110(64)	110(41)	410(35)	60(91)	110
RCO ⁽⁰⁾	360(40)	310(33)	280(46)	820(35)	480(29)	160(41)	80(23)	140(82)	980(29)	530(32)	600(23)	480(14)	1890(15)	470(26)	1190(20)	610(24)	370(17)	950(21)	230(30)	660(27)	1160(20)	418
JMM ^(-0.3)	130(100)	540(49)	2050(53)	160(59)	100(36)	4560(26)	260(52)	190(47)	1280(66)	60(63)	230(31)	90(44)	10(69)	20(41)	20(71)	70(91)	0(-)	80(92)	10(87)	310(55)	0(-)	3
WAR ⁽⁰⁾	900(48)	1280(46)	2260(24)	40(56)	0(-)	150(102)	460(82)	10(104)	230(59)	560(32)	610(20)	80(36)	60(63)	710(37)	100(50)	690(57)	640(30)	20(53)	90(42)	180(60)	170(61)	86
NCB ^(0.5)	0(-)	0(-)	0(-)	110(92)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	50(98)	0(-)	410(21)	1970(21)	950(26)	1380(22)	1360(21)	1010(16)	620(23)	138
HOK ⁽⁰⁾	120(25)	40(58)	740(39)	700(114)	100(29)	110(14)	170(20)	260(34)	490(55)	40(36)	370(82)	560(20)	200(20)	30(28)	370(72)	380(47)	1260(31)	120(19)	250(28)	310(28)	500(21)	188
RBT ^(0.1)	40(112)	90(64)	150(59)	10(62)	0(-)	0(-)	150(54)	1210(39)	400(73)	570(42)	290(27)	750(39)	100(18)	410(44)	430(47)	70(42)	70(82)	80(83)	40(122)	130(61)	10(51)	46
RAT ^(0.1)	110(47)	10(30)	100(50)	60(42)	20(51)	10(17)	70(29)	30(46)	230(43)	130(37)	510(18)	410(24)	500(13)	30(40)	960(29)	340(19)	380(25)	90(25)	110(24)	70(19)	220(16)	36
CRB ^(-0.2)	50(63)	0(-)	30(79)	40(60)	40(26)	40(25)	410(39)	260(37)	40(53)	40(32)	200(29)	360(23)	630(18)	1180(34)	130(55)	20(38)	20(37)	80(63)	0(-)	0(-)	0(-)	0
LIN ^(0.1)	30(72)	30(57)	150(47)	90(29)	90(53)	0(-)	20(47)	40(57)	320(58)	20(29)	120(29)	210(20)	290(18)	110(58)	190(27)	200(24)	290(20)	50(41)	90(40)	90(38)	340(23)	36
GSH ^(0.1)	10(63)	0(-)	30(64)	20(53)	10(73)	0(-)	10(54)	10(57)	70(44)	30(52)	360(45)	420(34)	330(18)	20(49)	300(38)	40(44)	630(29)	10(57)	10(42)	40(59)	80(27)	10
STU ^(-0.1)	30(23)	80(26)	120(34)	190(47)	70(63)	240(10)	170(48)	10(26)	60(90)	50(15)	40(28)	20(19)	10(26)	10(22)	680(35)	40(24)	10(28)	40(33)	30(41)	20(62)	20(34)	22
RBM ^(-0.2)	160(20)	30(92)	410(29)	10(17)	30(23)	140(28)	150(25)	20(60)	20(27)	20(59)	270(14)	180(31)	70(38)	10(17)	80(36)	70(38)	40(37)	10(22)	0(-)	0(-)	10(24)	8
SDO ^(0.4)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(19)	90(42)	420(19)	30(63)	440(48)	80(46)	20(42)	40(35)	90(94)	70(40)	90(40)	12
TAR ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(52)	10(88)	0(-)	280(30)	750(33)	0(-)	160(38)	0(-)	40(50)	0(-)	0(-)	0(-)	0(-)	1
SPE ^(0.1)	10(53)	20(67)	20(75)	0(-)	10(45)	0(-)	0(-)	10(45)	30(40)	0(-)	300(101)	60(30)	180(19)	20(35)	180(42)	10(60)	70(48)	0(-)	0(-)	20(64)	40(31)	10
STA ^(0.1)	20(30)	20(42)	40(66)	20(24)	20(48)	0(-)	10(30)	10(14)	60(50)	20(23)	30(18)	90(21)	140(14)	20(30)	60(25)	50(21)	180(14)	20(17)	20(25)	50(16)	50(23)	19
JAV ^(0.3)	0(-)	0(-)	20(58)	0(-)	0(-)	0(-)	0(-)	0(-)	60(52)	0(-)	50(115)	120(54)	30(27)	10(110)	50(59)	120(40)	410(54)	10(28)	10(69)	10(73)	20(51)	5
JMD ^(-0.2)	500(86)	70(59)	0(-)	0(-)	40(122)	10(50)	40(66)	0(-)	80(74)	0(-)	50(74)	20(66)	0(-)	0(-)	30(95)	20(75)	0(-)	0(-)	0(-)	20(53)	0(-)	0
HAP ^(0.1)	10(67)	0(-)	20(48)	10(64)	60(29)	10(41)	0(-)	20(21)	30(25)	30(18)	60(12)	90(19)	110(11)	60(20)	150(17)	40(23)	40(13)	20(31)	30(61)	50(21)	20(25)	12
GSC ^(0.4)	0(-)	0(-)	0(-)	0(-)	10(32)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(61)	50(20)	180(29)	60(21)	70(22)	140(30)	70(20)	210(17)	48
SKI ^(-0.2)	100(14)	120(76)	70(42)	20(39)	30(49)	0(-)	10(30)	10(22)	10(24)	0(-)	0(-)	120(25)	240(12)	10(20)	40(31)	10(47)	10(24)	0(-)	0(-)	0(-)	10(94)	2
BSK ^(0.2)	0(-)	0(-)	0(-)	30(144)	0(-)	0(-)	0(-)	0(-)	80(80)	90(36)	290(104)	10(122)	120(37)	30(125)	0(-)	0(-)	100(35)	20(91)	10(155)	0(-)	20(114)	12
SSK ⁽⁰⁾	10(57)	10(35)	30(77)	10(41)	10(52)	0(-)	10(49)	0(-)	140(49)	20(41)	50(21)	70(29)	160(21)	30(51)	40(22)	20(37)	110(33)	10(51)	0(-)	0(-)	10(24)	3
WWA ^(0.1)	0(-)	20(86)	10(108)	10(82)	0(-)	0(-)	0(-)	10(73)	20(58)	70(52)	90(52)	50(23)	150(29)	50(51)	10(57)	10(30)	190(50)	0(-)	10(91)	20(98)	20(48)	15
SCH ^(0.3)	0(-)	10(33)	0(-)	0(-)	0(-)	0(-)	10(42)	0(-)	20(28)	10(52)	30(16)	50(23)	90(20)	10(40)	70(37)	30(19)	20(20)	20(22)	10(30)	20(25)	40(32)	13
FRO ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(86)	0(-)	30(110)	90(34)	100(42)	0(-)	80(65)	10(74)	100(72)	0(-)	0(-)	0(-)	0(-)	0
PAD ^(-0.3)	50(37)	10(73)	20(77)	0(-)	40(62)	60(42)	50(76)	90(41)	40(84)	10(32)	40(48)	10(81)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
RSK ^(0.3)	0(-)	0(-)	20(80)	0(-)	10(55)	0(-)	0(-)	0(-)	20(148)	0(-)	0(-)	0(-)	0(-)	80(86)	50(27)	30(22)	60(28)	20(31)	20(24)	40(19)	70(18)	11
NCA ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	20(63)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	80(42)	90(87)	0(-)	0(-)	150(79)	0(-)	0(-)	0(-)	0(-)	0
SSI ^(0.2)	0(-)	0(-)	0(-)	0(-)	20(106)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(19)	0(-)	30(26)	20(49)	150(28)	50(65)	10(30)	0(-)	10(14)	1

Table 1—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
POS ⁽⁰⁾	0(-)	10(42)	10(28)	0(-)	0(-)	10(33)	10(26)	20(25)	30(20)	20(13)	30(24)	50(23)	20(17)	10(28)	10(32)	10(35)	20(37)	0(-)	0(-)	10(22)	10(24)	2	
WIT ^(0.2)	10(20)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(32)	0(-)	10(22)	0(-)	20(22)	10(33)	40(26)	10(10)	40(26)	0(-)	10(14)	10(10)	10(17)	1	
CAR ^(0.3)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	30(29)	0(-)	30(18)	10(75)	10(22)	10(40)	50(17)	0(-)	10(24)	10(32)	40(35)	3	
SBW ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	100(97)	0(-)	0(-)	0(-)	0(-)	30(139)	0(-)	0(-)	0(-)	10(45)	0(-)	0(-)	10(37)	10	
SPI ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(41)	10(93)	0(-)	20(41)	0(-)	10(32)	80(62)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
SPO ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	30(131)	0(-)	0(-)	0(-)	0(-)	0(-)	100(85)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1	
MAK ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	10(37)	10(77)	20(39)	20(36)	10(55)	40(86)	0(-)	10(47)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1	
BWS ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	90(31)	10(14)	0(-)	0(-)	0(-)	10(14)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
FHD ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(17)	0(-)	100(28)	0(-)	0(-)	0(-)	0(-)	0	
JMN ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	110(93)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
PIG ^(0.3)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(14)	0(-)	20(43)	10(28)	10(28)	10(24)	10(33)	10(14)	30(20)	1	
BCO ^(0.1)	0(-)	0(-)	10(73)	0(-)	0(-)	0(-)	10(47)	0(-)	0(-)	0(-)	10(41)	0(-)	10(50)	10(54)	0(-)	0(-)	20(40)	0(-)	0(-)	0(-)	30(53)	2	
HPB ^(0.1)	20(38)	30(39)	30(31)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(68)	0(-)	10(65)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1	
BCD ^(0.2)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(44)	0(-)	0(-)	60(37)	10(32)	0(-)	10(14)	7	
GON ^(0.3)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(14)	10(17)	10(17)	10(24)	10(24)	10(20)	10(22)	10(28)	10(20)	2	
HAK ⁽⁰⁾	0(-)	0(-)	10(58)	0(-)	0(-)	0(-)	0(-)	0(-)	70(67)	0(-)	0(-)	0(-)	10(17)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	5	
LDO ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(56)	10(30)	0(-)	0(-)	0(-)	10(17)	0(-)	60(26)	0(-)	0(-)	0(-)	0(-)	5	
SSC ^(0.1)	0(-)	0(-)	30(92)	50(88)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
CBE ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	50(96)	0(-)	0(-)	0(-)	20(93)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	3	
CDO ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	30(66)	40(68)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
RDO ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(97)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	50(92)	10(59)	0
BEL ^(0.1)	0(-)	0(-)	0(-)	10(160)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(104)	10(37)	0(-)	0(-)	0(-)	0(-)	0(-)	10(89)	0(-)	0(-)	20(57)	0	
OCT ^(0.1)	0(-)	0(-)	0(-)	10(24)	0(-)	0(-)	0(-)	0(-)	20(49)	0(-)	0(-)	0(-)	10(17)	0(-)	10(33)	0(-)	0(-)	0(-)	0(-)	0(-)	10(10)	4	
TOA ^(0.2)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(14)	0(-)	0(-)	10(22)	20(18)	0(-)	10(10)	0(-)	10(20)	1	
GUR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	40(49)	10(36)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
BSH ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	40(85)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
COF ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	40(87)	0(-)	0(-)	0(-)	0(-)	0	
SQI ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(160)	0(-)	0(-)	20(86)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
LAN ^(0.2)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(75)	10(85)	0(-)	0(-)	10(59)	3	
STN ^(0.1)	0(-)	10(28)	0(-)	0(-)	0(-)	10(36)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(28)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
BAS ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(32)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
BBE ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(50)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
BYS ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	20(82)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0	
GFL ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(106)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(10)	3	
MDO ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(26)	0(-)	0(-)	0(-)	0(-)	10(66)	0(-)	0(-)	0(-)	0(-)	0	
ONG ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(86)	0(-)	10(56)	0(-)	0	

Table 1—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
OPE ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(212)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(126)	0(-)	7	
QSC ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(89)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(41)	0	
SKA ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(37)	0(-)	0(-)	0(-)	0(-)	10(44)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
SNA ⁽⁰⁾	0(-)	0(-)	0(-)	10(97)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(183)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
THR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(24)	10(66)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1
YCO ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(17)	0(-)	10(17)	0(-)	0(-)	0(-)	0(-)	0(-)	0
ASR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(22)	0(-)	0(-)	0(-)	0(-)	0(-)	0
BGZ ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(46)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
BRA ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(95)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
BTH ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(58)	0(-)	0(-)	0(-)	0(-)	0(-)	0
BYX ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(51)	0(-)	0(-)	0(-)	0(-)	0(-)	0
CON ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(122)	0	
CRA ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(99)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
CRU ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(68)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
DSK ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(40)	0(-)	0(-)	0(-)	0(-)	0(-)	0
DSP ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(46)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
EEX ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(69)	0
FLA ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(40)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	3
GMU ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(147)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
GSP ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(53)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
JFI ^(0.1)	10(58)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
JGU ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(52)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
LSK ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(22)	0(-)	0(-)	0(-)	0(-)	0(-)	0
MOK ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(39)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
SCD ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(87)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1
SHA ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(75)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
SNI ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(82)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
WPS ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(86)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0
WSQ ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	10(30)	0(-)	0(-)	0(-)	0(-)	0(-)	0

Table 2: Southern blue whiting trawl fishery. Total annual bycatch estimates (t) for individual species with at least 1 t of estimated bycatch in at least one year, based on observer catch rates; blank cells are <1 t. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code (see <http://marlin.niwa.co.nz> for species code definitions).

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
LIN(-0.1)	85	1309	43	87	54	20	14	80	84	42	65	78	30	154	80	15	38	14	21	35	49	69	
HOK(-0.2)	132	1064	58	44	22	9	52	34	92	15	22	66	6	72	2		1	2	40	12	26	14	
HAK(-0.1)	223	212	34	80	43	4	40	24	32	17	65	26	37	65	39	19	29	22	6	33	52	13	
GSP(0.1)		668							1				2	11	9	3	2	4	1	1	1	12	
SSI(0)	9	173	1	2	3		4	1	2	8	4	14	3	13	4		4	1	1	136	12	16	
POS(0)	3	3	10	3	7	4	5	22	34	53	35	39	5	5	3	9	4	6	10	12	13	2	
RAT(-0.1)	3	71	3	81	2		14	4	17	10	6	4	5	8	2	1		1	3	7	3	13	
GSH(-0.1)		224	4	11	3				1				1	1	2							1	3
JAV(0.1)	4	97	1				2		1	5	5	7	4	24	21	1	5	2	2	1	9	8	
SQU(0)	7	20	1				1	42	10	24	3	6	31	4			1	1	4	1	1	3	
WWA(0)		61	1	31				1	1	2	1			1	1		6		1	1	1	8	
PAH(0.2)								7	14	9	4	2	1	4	10	7	4	11	3	7	6	5	
SPD(0)	11	17	2	5	1		1	3	2	2	1	4	2	3	3		1	1	4	10	4	8	
SBI(0)															84								
RBM(0.1)		1				1	1	1	3	2	17	23	6	8	3	1	3	1	3	4	2	3	
WSQ(0)	9	42	1			1	1		1	1	1	6	1	3	1		1	1	1	2	1	2	
MOO(-0.1)	8	7	5	2	1	1	3	7	8	6	2	5	1	1	6	2	5					4	
LCH(0)		46	1	4										1	1	1	1	1				2	
LDO(0)	1	41		1								1		3	1	1				1	1	1	
MAN(-0.1)		32										1											
ETB(0)		29													2								
ONG(0)		24						1		2				2	1								
BTH(-0.1)		29																					
JMD(0)													21										
SBO(0)				20																			
PIG(-0.1)	7	5							1					2									
SKA(-0.1)		9		3																			
CBO(-0.1)	8																						
RCO(0)	1	3												1					1		2		
BRS(0)									7														
MAK(0)								2						4						1			
TOP(0)		6																					
SPI(0)															6								
RSK(0)															5						1		
HCO(0)		5																					
BSH(0)		4														1							
WIT(0)		1												2	2								
BOA(0)		4																					
SOP(0)									1													3	
MIQ(-0.1)		2		1																			
BBE(0)		2			1																		
DSP(0)						3																	
CSQ(0)		2																					
BCO(0)		2																					
SWA(0)			1										1										
CON(0)		1													1								
STA(0)		1																				1	
SSK(0)		1																				1	
FRO(0)													2										
GSQ(0)				1																		1	
SHA(0)				1																		1	
HYA(0)																						2	
STU(0)	1																						

Table 2—continued

	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
POR ₍₀₎		1																				
BSQ ₍₀₎		1																				
API ₍₀₎		1																				
MIC ₍₀₎		1																				
OPA ₍₀₎			1																			
DEA ₍₀₎											1											
EMA ₍₀₎												1										
BAR ₍₀₎												1										
RBT ₍₀₎												1										
OCT ₍₀₎													1									
ASR ₍₀₎														1								
GLS ₍₀₎																	1					
POM ₍₀₎																	1					
SQX ₍₀₎																				1		
SRB ₍₀₎																						1

Table 3—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
TOA ^(0.1)	6	4	1	1	3	10	22	34	32	34	55	45	94	69	84	43	16	18	9	16	20	15
JMD ^(-0.1)	11	3		36	225	1		1	21	204	4	3	18	46	16	13	11	2	2			1
RSK ^(0.1)	10	11	10	6	7	1		25	85	1	2	3	4	111	38	47	14	79	20	33	34	23
ASR ^(0.2)		9					9	19	127	22	151	58	20	47	10	10	16	17	19	8	9	8
RHY ^(0.2)	2	1		2	1	8	1	7	6	5	9	38	14	70	38	19	10	14	15	60	9	204
CDL ⁽⁰⁾	144	34	8	10	2	2	1	30	4	25	99	19	22	5	11	7	7	9	7	17	10	11
SNA ^(-0.1)						10	24	230	3	17	182				1			3				
CYP ^(0.1)	32	163		1	1	6	3	30	1		9	1	29	10	1	7	18	64	14	36	9	32
ETL ^(0.1)	5	30	2	3	9	36	33	14	20	20	17	45	51	7	9	28	16	14	23	30	29	16
SWO ⁽⁰⁾	19	8	12	8	4	4	26	46	53	72	72	8	23	13	8	2	7	13	18	7	9	17
HAP ⁽⁰⁾	20	23	8	7	10	3	3	12	16	19	26	46	29	93	21	7	9	3	1	9	6	5
THR ^(-0.2)	10	11	4	4	28	50	78	11	65	6	29	26	6	1	1		6	2	1	1	1	2
RBY ^(-0.2)	46	11	21	10	9	2	33	52	5	15	3	19	19	28	22	3	1		1		1	
MIQ ^(0.1)	19	41	57	8							12				9			23	41	61	18	12
TAR ^(-0.1)	10	3	2	2	2	25	1	48	15	66	63	3	16	21	6	2	2	2		1	3	1
SCI ^(0.1)		2	3			49	11	26	20	15	41	21	21	17	11	7	4	5	3	7	9	5
GLS ^(0.2)														46		183	15					28
MAK ^(-0.1)	3	5	2	7	10	28	27	51	15	7	29	14	17	21	4	9	1	6	12	1	1	2
SLK ^(0.2)		2		3	1			4	3	12	2	21	43	92	4	8	5	31	15	5	3	5
HJO ⁽⁰⁾	6	42		1	1	1	1	11	9	1	1	104	26	12		1	1	11	12	1	1	1
NSD ^(0.2)	2			1	8				1	1	3	56	35	19	28	15	13	2	2	19	21	8
BEL ^(0.2)	1	3			1		8	14	46	11	11	2	4	15	5	7	5	32	8	9	42	9
SSH ^(0.2)	1	4	3		2	2				12	4	30	34	35	37	1	2	9	3	9	21	21
SPO ^(-0.1)		28				4	59	98	18	1	3	4	1	3	3	1	2	2		1		
JMN ^(-0.1)		1				207			10	1	1			1			2					
HYA ^(0.3)																		53	45	62	30	23
HAG ^(0.2)	1								1		3		1	1	2	1	5	158	1	20	1	
SCM ^(0.2)		1				8		61	1		35	2		2	18	14	3	10	1	14	7	3
MCA ⁽⁰⁾		105			46	1											2	13	12			
PHO ^(0.1)							150	1			11				2		7	2	1			1
HOR ⁽⁰⁾								7						162								
SCO ^(0.1)	5	2	7		8	1	1	1	1			1	6	10		62	4	5	6	1	44	3
SBK ⁽⁰⁾	5	9	16	1	2	5	1	6	4	5	5	16	10	7	12	10	7	11	14	7	10	3
WHX ^(0.2)										1	9	47	1	9		15		52			7	4
STN ⁽⁰⁾		2	1	1	8		3	4	6	8	13	14	14	40	13		7	3		2	4	1
SRH ^(0.1)	2	2	2	1	1	1	2	2	3	2	1	15	7	14	3	30	2	4	4	13	18	11
MOO ^(-0.2)	3	2	10	22	17	11	12	13	4	14	7	6	5	2	5	1	1	1	1	1		
BEE ⁽⁰⁾	3	25	4		8	1	2	3	1	8	2	14	9	3	1	2	3	13	10	4	13	1
ERA ⁽⁰⁾	5	3	1	3	5	16	5	8	5	7	5	6	5	9	5	4	4	6	7	5	9	4
EMA ^(-0.2)	8	3	4	26	1	17	42		13		1				6		1	1	1			
RSQ ⁽⁰⁾	1	1	1		2	1	6	3	4	26	3	1	36	1		1	2	3	3	9	15	
PDG ^(0.1)	2	4	1	1	1	13	2	3	2	1	5	4	38	3	2	2	2	3	2	10	7	8
PLS ⁽⁰⁾	6	5	13	6	3	3	7		4	5		6				4	3	3	8	8	23	7
HCO ⁽⁰⁾	3	11	4	3	1	3		9	2	23	3	5	2	5		24	5	2	5	3		1
SQX ^(0.1)					1	1	1	22	10	10	2	9	2	28		2	1	3	2	2	10	2
GSQ ⁽⁰⁾	2		3	1	2	14	8	8	10	5	10	1	7	9	9	2	3	2	3	2	1	5
HPB ^(-0.2)	9	17	2	3	13	21	5	11	5	3	2	9	2			1		1			1	1
NOS ^(0.1)				1	23	6				9	17									10	19	21
CBO ^(-0.1)	12	44	6					4										34				
WHR ^(-0.1)	55		2					3		26								8	5			
EEL ^(-0.1)	1	4			5				9	17	13	27	3	1	4		11					
COL ^(0.1)		16	2															29	31			17
RDO ^(0.1)							12	2	16	3	4	2		16	3	9		5	4	9	6	
WHE ⁽⁰⁾											88							1				1

Table 3—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
OCT ^(-0.1)	3	11	2	1	2	3	2	3	7	20	7	14	5	1	1	1		1		3	2	1
DWE ^(0.2)					4						1	18	28		12	2	6	1	2	3	2	10
AGR ^(-0.2)	8		3	3	2	4	47	8	4	1	2		1	3								
WIT ^(0.2)	1	1			1				3	7	3	8	6	11	5	1	1	9	3	5	3	11
LAN ^(0.1)			9			3		2		25	10	1	4	1	5	2	9	3	3	1		1
DSK ^(0.1)		3	1	2	1		4	4	1	4	3	1	3	8		1	8	5	10	8	5	3
OEO ^(-0.1)			12			57		5														
TSQ ^(0.1)	4	40										1	1					3	12	1	2	8
MOD ^(0.2)	1				1			2		10	1	5	2	13	5	6	1	13	4	3	3	1
APR ^(0.1)	8							20						10		5	1	1		18	2	5
STU ^(-0.1)	10	3	1	5	6	3	8	5	2	7	5	1	1	2	1	1	1	3	1			2
BSQ ^(-0.1)		64		1							1		1									
CYO ^(0.1)	11		1		17	1								3		8	3	7	3	3	4	3
EPL ^(0.2)	3										1	13	1	1		7	1	4	2	5	19	5
TOP ^(0.1)	2	4					1		9	6	7	6	7	4		3	2	3	2	5		1
CRB ⁽⁰⁾		1	3		1			3	5	8	5	10	17	2	1	1		1		1	2	1
POR ^(-0.2)	2	7	3	2	3	6	10	3	16	2	7											
OPI ^(0.2)																2	1	24	8	3	11	11
BNE ⁽⁰⁾					3						34	13		3	2	5						
STG ^(-0.1)	55		2				2		1													
MOK ^(-0.1)			9			46		3														
RAG ^(-0.1)	3		1		6	7	2	21	4		2		1		7	1	2					
MAN ^(-0.1)	7	22	2		1		2	2		11		3	3	1				1		2		
OPE ⁽⁰⁾	4	3	1				12				7		5	1	2			16			2	2
CDO ^(0.2)			1					2	1		5	4	1	16	2	1	5	3	3	2	3	4
PSK ^(0.2)			1		1						9	1					7	7	3	6	11	1
BAS ^(0.1)				1	1			3	7	3	1	5	7	9	2	2			1	1	1	1
OAR ^(-0.1)		3	2			1	15	4		4	14			1								
BWS ^(-0.1)					1	5	19	8	3		3		1						2			
CYL ^(0.2)													5			15	4	6		3	3	5
MDO ⁽⁰⁾	1					4		16		1	3	5	1	5							2	2
VSQ ^(0.2)											10	1		5		1	1	7	2	2	7	1
SPI ^(-0.1)		2				1	5		3	3	8	12	1				1					
SRI ^(0.1)								1				1			27	3		4				
CAR ^(0.1)	1							5	2	2	6	2	1	2	1	1	2	1	1	3	3	2
ECH ⁽⁰⁾				3				1	2	16		9			3	1						
DWO ^(0.2)							2											4	1	3	21	1
TOR ^(0.2)														6	14	4	3	1	1	4	1	
HEX ^(0.1)		1				2	1	4			1		1		2	1		1	2	4	8	5
FMA ^(0.2)																	1	19	2	4	5	1
CSH ^(0.1)								2	3		1	8		1			2	1	2	10	2	
SEE ^(0.1)	5	2											7	2		4	1	1	1	3	4	1
TAM ^(0.2)																2	1	3	4	4	9	7
PDS ⁽⁰⁾									2	1		1	13	3					10			
SUN ⁽⁰⁾	3		1	2		2		3	1	1	7		2		2		1	1		1		2
FOR ⁽⁰⁾									19		6		1	1								
ANT ^(0.1)									8			7	1	5			2	1	1	1		1
SQA ^(0.1)													2			23		2				
BSL ^(0.1)	1									4		9			4	4		2	2	1		
FLA ⁽⁰⁾					2	1		1	1	2	12		1		1			1	4			
RSN ⁽⁰⁾								26														
SOP ⁽⁰⁾								18	1				1	6								
GAS ⁽⁰⁾		10													3	5	1		3			
BCA ^(-0.1)			3	2	1	1	2	7	3	3	1				1			1				

Table 3—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
SNR ⁽⁰⁾					1		1			1	11	7			1	3						
MOL ⁽⁰⁾							4			1		16		4								
SNI ⁽⁰⁾								2		2	18							1				1
BPI ⁽⁰⁾																	23					
NEX ⁽⁰⁾								1						22								
YBO ^(0.1)			1		2		1					2	2	3	1	2			1	2	4	2
ACS ^(0.2)																		3	6	7	5	1
SLB ⁽⁰⁾															19		3					
HYD ⁽⁰⁾	1								4	7		6	1					1	1	1		
EUC ^(0.1)														3	1	7	1	7	1			1
BTH ^(0.1)	3									1	2			1	1	3	1	6	1		2	
CUB ⁽⁰⁾			5																			
PIG ^(0.1)								3		5									4			6
BSP ⁽⁰⁾	1				1	2	2	1	2	1	3	1	2				1				1	2
SHE ⁽⁰⁾			5							13		1										
HEP ⁽⁰⁾	1	2			1				2	1		2		2		1	2		1		1	2
CCA ⁽⁰⁾											17							1				
GSC ⁽⁰⁾					6								1					8			2	
EMO ⁽⁰⁾	4									3	1	1			3					2		3
OFH ⁽⁰⁾	2							2	6	2	1	1	1					1	1			
CHI ^(0.1)			2	1	7			1		1	1	1				1						1
YFN ⁽⁰⁾					1					7	1			5	1							1
SUR ⁽⁰⁾							10	1		4		1										
RCH ⁽⁰⁾		2												12			2					
CCX ^(0.1)																						16
BCR ⁽⁰⁾						12							3									
BER ⁽⁰⁾	2	2				2	1		2		1	1									3	1
CPD ⁽⁰⁾								5	10													
OSK ^(0.2)																	3		5	1	2	2
ECN ⁽⁰⁾							1		5	5		2	1									
PAL ⁽⁰⁾											13		1									
EPR ^(0.2)																	1	3	3	2	3	1
SEV ^(0.1)								1	2		3	1		1				1		1	2	1
COD ⁽⁰⁾								12														
LSK ^(0.1)												1			1					2	4	3
TVI ⁽⁰⁾																						
BDA ⁽⁰⁾											11											
SBR ⁽⁰⁾		6															4				1	
SSP ⁽⁰⁾								2	4			1	2		2							
PSI ^(0.1)																3		2	2	1	1	1
NTU ⁽⁰⁾									1	1	4	2	2									
CAS ⁽⁰⁾		6	2																			2
CTU ⁽⁰⁾									10													
PKN ^(0.1)																						
LHO ⁽⁰⁾																	8				1	
CHG ⁽⁰⁾		1								2		5									1	
PSP ⁽⁰⁾											4	3					1				1	
CPA ^(0.1)																			2	2	5	
BFI ⁽⁰⁾												9										
MRL ⁽⁰⁾												9										
HTH ^(0.1)										1		1			1	1		2		1	1	
KIC ^(0.1)	1														1	1	2	1	1		1	
ZOR ^(0.1)																		3	1	2	2	
BCO ⁽⁰⁾			1			6																1

Table 3—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
CCO ⁽⁰⁾																		8				
LUC ⁽⁰⁾								8														
GRM ^(0.1)																1	2	5				
SMC ^(-0.1)	5	1								1	1											
RAY ⁽⁰⁾		1						4							1			1	1			
CHP ⁽⁰⁾		1		1							2	1	1							1		
BYD ^(0.1)																1					1	5
JFI ⁽⁰⁾							1				2							2	2			
FLO ⁽⁰⁾					1					5					1							
LMU ⁽⁰⁾	1																	1	1	4		
BOT ⁽⁰⁾											4	3										
RIS ^(0.1)															1			1			5	
TRA ⁽⁰⁾									7													
SCD ⁽⁰⁾												3	1		3							
SNE ⁽⁰⁾					1							1						2	3			
SAW ⁽⁰⁾			1										6									
GUR ⁽⁰⁾					1	1							1	1				1			1	
PLT ⁽⁰⁾																2	4					
LVN ^(0.1)																		2	1	3		
SBO ⁽⁰⁾										1	1	2	1								1	
TOD ^(0.1)												1								4	1	
PAH ⁽⁰⁾										2		4										
BNT ⁽⁰⁾									5			1										
CJA ^(0.1)																	1	2	1		1	1
TRU ⁽⁰⁾								5		1												
SPZ ^(-0.1)		1		1	1			1			2											
BRA ⁽⁰⁾															6							
HTR ^(0.1)																		2	1	1	1	
PSQ ^(0.1)																		2		1	2	
BKM ⁽⁰⁾	3								2													
DOS ⁽⁰⁾								5														
BCD ⁽⁰⁾										4			1									
CRU ⁽⁰⁾									5													
VCO ⁽⁰⁾		4											1									
CHM ⁽⁰⁾											5											
TAY ^(0.1)																1		2			1	
GON ⁽⁰⁾																					4	
WRA ^(0.1)															1	2						1
SBI ⁽⁰⁾	3																1					
GOR ^(0.1)																	1				2	1
LSO ⁽⁰⁾							2				1											1
CDX ⁽⁰⁾		1																	3			
FRX ⁽⁰⁾								4														
HAL ⁽⁰⁾														3		1						
HMT ^(0.1)																		2		1	1	
DSS ⁽⁰⁾							1					3										
WPS ⁽⁰⁾															4							
CST ⁽⁰⁾								4														
BRC ⁽⁰⁾														4								
COU ⁽⁰⁾									3													
MRQ ⁽⁰⁾			2																	1		
LEG ⁽⁰⁾													3									
CBE ⁽⁰⁾													1					1				1
CRA ⁽⁰⁾							2	1														

Table 3—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
DMG ^(0.1)																		1		1	1	
JDO ⁽⁰⁾				2										1								
MST ⁽⁰⁾		1														1	1					
SPK ⁽⁰⁾									1	1			1									
SDE ⁽⁰⁾								2	1													
FRS ⁽⁰⁾							1	1			1											
PCS ⁽⁰⁾								3														
RMU ⁽⁰⁾						3																
COF ⁽⁰⁾																			2			
SDM ⁽⁰⁾																		2				
CHQ ⁽⁰⁾																			2			
EPD ⁽⁰⁾													1							1		
SYN ⁽⁰⁾																		2				
DEQ ⁽⁰⁾					2																	
SCG ⁽⁰⁾																2						
BTS ⁽⁰⁾																						2
STO ⁽⁰⁾																		2				
BRS ⁽⁰⁾								2														
WMA ⁽⁰⁾																	2					
FAN ⁽⁰⁾										2												
STR ⁽⁰⁾								1				1										
NOM ⁽⁰⁾				2																		
SOT ⁽⁰⁾																		1			1	
PRA ⁽⁰⁾												2										
NOC ⁽⁰⁾																		2				
SNO ⁽⁰⁾															1		1					
SSC ⁽⁰⁾												1					1					
MOR ⁽⁰⁾						1						1										
SSM ⁽⁰⁾	1																			1		
OSE ⁽⁰⁾											1	1										
ARG ⁽⁰⁾							2															
GSA ⁽⁰⁾									1	1												
SDR ⁽⁰⁾																	2					
DCS ⁽⁰⁾	1				1																	
CBX ⁽⁰⁾										1		1										
BES ⁽⁰⁾																						1
NOG ⁽⁰⁾				2																		
ODO ⁽⁰⁾									1		1											
SPR ⁽⁰⁾									1					1								
GVO ⁽⁰⁾																		1				
OPA ⁽⁰⁾																						1
VOL ⁽⁰⁾																			1			
NCB ⁽⁰⁾																				1		
KWH ⁽⁰⁾																		1				
PSY ⁽⁰⁾		1																				
ALB ⁽⁰⁾										1												
IBR ⁽⁰⁾												1										
ETP ⁽⁰⁾									1													
PIN ⁽⁰⁾																			1			
SPS ⁽⁰⁾								1														
RSH ⁽⁰⁾														1								
CBI ⁽⁰⁾			1																			
LHE ⁽⁰⁾		1																				
API ⁽⁰⁾												1										

Table 3—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
JGU ⁽⁰⁾														1								
NEB ⁽⁰⁾																		1				
TDQ ⁽⁰⁾																						1
SAI ⁽⁰⁾																		1				
ROC ⁽⁰⁾											1											
SPP ⁽⁰⁾												1										
HGB ⁽⁰⁾												1										
BPE ⁽⁰⁾									1													
EBI ⁽⁰⁾													1									
SPL ⁽⁰⁾											1											
OSP ⁽⁰⁾											1											
BIG ⁽⁰⁾			1																			
SWR ⁽⁰⁾												1										
CHX ⁽⁰⁾																		1				
PMO ⁽⁰⁾																				1		
CHA ⁽⁰⁾																	1					
PAO ⁽⁰⁾																			1			
PRU ⁽⁰⁾																		1				
SPF ⁽⁰⁾							1															
PSO ⁽⁰⁾	1																					
DPE ⁽⁰⁾								1														
CMU ⁽⁰⁾					1																	
DHO ⁽⁰⁾																		1				
SPT ⁽⁰⁾																		1				
PZE ⁽⁰⁾																		1				
CUC ⁽⁰⁾												1										
YBF ⁽⁰⁾																				1		
KIN ⁽⁰⁾															1							
BOA ⁽⁰⁾									1													
DPO ⁽⁰⁾					1																	
SRB ⁽⁰⁾																						1
SYD ⁽⁰⁾																		1				
SUH ⁽⁰⁾									1													
GRC ⁽⁰⁾									1													
ROS ⁽⁰⁾									1													
HOL ⁽⁰⁾															1							
BJA ⁽⁰⁾		1																				

Table 4: Oreo trawl fishery. Total annual bycatch estimates (t) for individual species with at least 1 t of bycatch in at least one year, based on observer catch rates; blank cells are <1 t. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code (see <http://marlin.niwa.co.nz> for species code definitions).

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
ORH ⁽⁰⁾	704	63	126	85	116	155	355	413	1850	378	92	191	748	426	562	306	267	102	424	543	187	168
SHA ^(-0.1)	124	69	352	28	60	223	10	304	168	99	162	82	37	10	53	60	22	17	21	28	18	10
HOK ^(0.1)	54			31		291	82	46	15	60	327	143	91	22	16	145	52	12	16	78	13	58
COU ⁽⁰⁾							2	717	8	197	1	128	295	5	19	1	1					
RAT ^(0.1)	17	5		28	18	40	21	22	29	142	132	98	108	71	76	155	50	57	54	35	46	30
ETB ^(0.3)		17			38		90		47	25		22		58	14	58	56	101	145	212	57	91
BSH ⁽⁰⁾			2	14	11	5	80	9	33	39	40	151	66	42	3	4	6	5	3	3		11
ETM ^(0.1)						9	3			40	7	41	142		64	25	4	13				
SLK ^(0.2)	1			7	1	14	17	8	12	18	13	17	17	24	11	20	15	23	42	35	11	14
MCA ^(0.3)																33	55	89	33	34	27	12
BEE ^(0.1)	3	2			3	13	2	7	4	7	11	7	21	29	10	15	15	27	11	9	6	11
WSQ ^(0.2)	1				1	1	10	3	5	17	14	12	6	8	8	8	10	20	13	9	3	10
MOD ^(0.2)						42	3	12	3	7	6	3	7	5	7	9	5	7	13	6	3	9
JAV ^(0.1)	16					19	4		1	10	6	5	10	2	18	3	3	7	7	12	5	1
GSP ^(0.2)						1		1	1	7	10	16	17	3	4	6	6	3	4	3	2	2
HJO ^(0.1)	3	6			6				1	3	16		1	1		11	1	4	3	5	11	13
SPD ⁽⁰⁾				71														4				
HAK ⁽⁰⁾	2			1		2	2	1	2	19	6	5	3	7	1	3	3	1	1	1		
SVA ^(0.1)																		20	37	2		
CSQ ⁽⁰⁾						50				5						1				1	1	
SSI ⁽⁰⁾				1						49	7											
SQA ⁽⁰⁾															4	48						
LCH ⁽⁰⁾	6			1		2	8	2	2	2	2	4	2	3	2	3	2	3	3	2		1
GSH ^(-0.2)	26	2		6	1	1	4	2	1	5	1					1						
SND ^(0.1)	1						1	1	1	3	6	4	1	1	2	1	1		2	5		2
HTH ^(0.1)									21	2			1						4			2
GDU ^(0.1)																	5	17		3	5	
ETP ⁽⁰⁾										30												
GRC ^(0.1)													1	7	16						3	
VCO ^(0.1)										2						2		4	12	3		
RIB ⁽⁰⁾	3				1	10	1					1	1	1	1				1	1	1	
ASR ⁽⁰⁾									20	1												
SSK ^(0.1)													1							2		16
CDL ⁽⁰⁾							5							1	12							
LIN ^(-0.1)	7			6								1	2				1					
ETL ^(0.1)													11	1				1	4			
ECN ⁽⁰⁾									2	8		1	3									
MIQ ⁽⁰⁾	6	3																1	1	1	2	
CYP ^(0.1)										2						1	1	3	2	2		1
CHI ⁽⁰⁾	1			3		1				1	1	1			1	1	1				1	
BSL ^(0.1)				4								1						1			1	4
PAB ^(0.1)															2	2	2	1	1	2		
SKA ⁽⁰⁾						1			3	2	2	1										
PSE ⁽⁰⁾										8												
TAM ^(0.1)																1	1	2	1	2	1	
PLS ⁽⁰⁾										6										1		
MOC ⁽⁰⁾																		7				
CHP ^(0.1)										1				1		1		1	1	1		
CHG ^(0.1)										1		1			1				1	1		1
DWE ⁽⁰⁾				3							1					1		1				
ANT ⁽⁰⁾									6													

Table 4—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
CMU ⁽⁰⁾															6							
WWA ^(0.1)													1	1							4	
BBE ⁽⁰⁾																					5	
CBD ⁽⁰⁾																	5					
EPL ⁽⁰⁾	1				2															1		
SQU ⁽⁰⁾				1			1					1	1									
NOR ⁽⁰⁾															4							
RUD ⁽⁰⁾			3								1											
SMC ⁽⁰⁾											1	2										1
ONG ⁽⁰⁾									1				3									
AME ⁽⁰⁾									4													
APR ⁽⁰⁾									1							1				1		
CBI ⁽⁰⁾												3										
TOA ⁽⁰⁾										1	1					1						
COD ⁽⁰⁾										3												
ROC ⁽⁰⁾																1	2					
VIT ⁽⁰⁾										3												
CHR ⁽⁰⁾																		2		1		
OCT ⁽⁰⁾										1	2											
SNR ⁽⁰⁾																		1		1		
PSY ⁽⁰⁾										1							1					
SBI ⁽⁰⁾		1										1										
SCM ⁽⁰⁾							1															1
SBW ⁽⁰⁾																1		1				
LAE ⁽⁰⁾		1														1						
HYD ⁽⁰⁾											1							1				
DSK ⁽⁰⁾		1		1																		
SPI ⁽⁰⁾										2												
LAN ⁽⁰⁾																2						
RAG ⁽⁰⁾														1			1					
CON ⁽⁰⁾											1	1										
SQX ⁽⁰⁾				1		1																
EEL ⁽⁰⁾										1		1										
BJA ⁽⁰⁾																						2
KIC ⁽⁰⁾				1																		
PSK ⁽⁰⁾										1												
CAY ⁽⁰⁾																		1				
COR ⁽⁰⁾											1											
PSL ⁽⁰⁾																			1			
IBR ⁽⁰⁾																					1	
BTH ⁽⁰⁾																			1			
SIA ⁽⁰⁾																				1		
JFI ⁽⁰⁾																			1			
CSH ⁽⁰⁾							1															
PTO ⁽⁰⁾													1									
GOB ⁽⁰⁾							1															
OSP ⁽⁰⁾															1							
LPS ⁽⁰⁾								1														
GRM ⁽⁰⁾																					1	
MOR ⁽⁰⁾											1											
SSM ⁽⁰⁾																						1
SBR ⁽⁰⁾																1						
CUB ⁽⁰⁾										1												
BAT ⁽⁰⁾							1															

Table 4—continued

	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	
BNS ⁽⁰⁾															1								
DRE ⁽⁰⁾												1											
ISI ⁽⁰⁾																1							
ECH ⁽⁰⁾											1												
RAY ⁽⁰⁾				1																			
DDI ⁽⁰⁾																		1					
LDO ⁽⁰⁾													1										
CRB ⁽⁰⁾											1												

Table 5: Orange roughy trawl fishery. Total annual bycatch estimates (t) for individual species with at least 1 t of bycatch in at least one year, based on observer catch rates; blank cells are <1 t. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code (see <http://marlin.niwa.co.nz> for species code definitions).

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
SSO ^(-0.2)	12289	10916	2886	9432	11753	7480	7956	10142	3042	2133	4587	1813	2187	3631	3477	1485	892	1929	2005	1136	172	138
BOE ^(-0.2)	2476	8734	2134	4938	2055	1628	3879	3361	380	615	948	439	621	707	855	474	86	235	368	395	66	40
CDL ^(-0.2)	103	208	806	3203	322	2067	2400	845	340	1034	190	84	177	54	86	91	31	24	94	26	55	10
SHA ^(-0.1)	531	233	294	208	381	304	353	255	422	176	118	115	82	71	211	104	72	98	138	140	31	14
HOK ^(-0.1)	407	344	15	409	150	134	71	159	90	481	324	91	90	127	87	111	178	134	160	187	26	15
RAT ⁽⁰⁾	91	23	34	70	107	45	173	211	298	181	131	198	100	122	85	387	164	132	96	197	39	28
SOR ^(-0.1)	78	142	297	421	168	32	42	218	747	69	49	42	49	41	33	12	12	16	33	36	45	34
BSH ^(-0.1)	16	162	86	101	193	48	94	107	282	210	432	155	174	98	32	37	39	50	50	16	20	9
SLK ^(0.1)	10	2	7	115	48	29	152	75	90	151	397	411	50	64	78	106	54	93	79	155	15	24
COJ ⁽⁰⁾					2		11	431	340	265	501	58	52	334	107	24	1	2				1
RIB ^(-0.1)	164	129	484	79	60	60	49	73	115	40	43	62	33	22	42	95	53	26	38	54	78	28
SND ^(0.1)	73	31	32	28	34	4	22	26	82	63	89	106	111	79	80	234	175	145	66	127	32	32
ETB ^(0.1)	233	83		24	56		123	32	9	1		56		196	43	57	76	83	112	73	31	32
BYS ^(0.1)			2	297	101		19	3	91	118	97	4	164	35	22	5	6	7	16	35	10	70
MOD ^(0.2)				17	15	1	45	8	10	15	40	116	15	63	110	42	146	20	60	154	8	5
BYX ^(-0.3)		235	134	119	24	7	22	269	27	2			2	4		3		2				1
BEE ^(-0.1)	106	25	11	50	130	19	29	25	29	18	30	44	37	47	62	34	35	25	26	27	3	4
ETM ⁽⁰⁾		3		85	99	27	55			24	26	80	133	14	164	11	16	2	1		1	
HJO ^(0.1)	51	6	9	10	33	10	1	14		14	8	46	17	20	22	158	6	106	52	71	14	11
WSQ ^(0.1)	2	1	1	8	11	7	31	24	16	14	42	15	20	24	168	79	50	22	42	15	2	2
JAV ^(0.1)	8		1	11	3	61	4	49	54	16	23	96	39	5	56	23	33	31	9	8	2	13
LCH ⁽⁰⁾	21	2	6	8	6	8	13	32	9	36	62	108	17	25	14	56	14	32	25	39	7	4
HAK ⁽⁰⁾	113	2		20	2	18	22	44	19	27	143	25	15	25	7	10	9	8	9	8	4	2
OEO ^(-0.2)	82	12	4	215		5	1	8								1			8	36		
CYP ^(0.2)			1	13	5		5		2	2		6		4	16	85	53	57	30	12	4	4
BNS ^(-0.2)		144	26	4	2	1	34	6	1	10	3	4	2	9	5			1	1	1		
SPD ^(-0.2)		13	20	145		2	1			21	1			1								
CBB ^(0.1)													100	34			42	26				
WHX ^(0.1)			1	1		18		4		6		101	7		5	1	25		2		1	2
ETL ^(-0.1)	14	1		71				65	3	1			14	4						1		
PLS ⁽⁰⁾		6	21	45	8	4	11		2					7	2	5	1	8	17	7	2	8
GSP ^(0.1)	10		1	2	1				1	9	17	18	7	4	10	6	6	7	5	12	3	2
ASR ⁽⁰⁾								2	25	65	3	5	5				1			2		
BSL ^(-0.1)		3	1	28			1	8	42	13		2	5				2					
WHR ⁽⁰⁾	8			1		4					61	10		12					1	4		
GSH ^(-0.2)	8	5	6	8	7	5	4	31	6	5	1	1	2		3		1	1	2	1		1
CSQ ^(0.1)			4	4	25	6	5								2	8	13	1	6	7	6	6
WOE ⁽⁰⁾		5	1	14	10		7		7	11	4	10	2	1		1	4	2	2	3	1	
SBI ^(-0.1)	54		8	1		3		2	3	1	1	1	1	3								1
VCO ^(0.1)			4		2	2	4	5								2	1	30	20	3	2	
EPL ^(-0.1)	4	2		4	33	4	1						2	19					1	1		1
GDU ^(0.2)																1	28	16	11			5
CHI ^(0.1)						1	22		21	2	1	1	2	1	2	2	1	1	1	1	1	1
CYO ^(0.2)	1	3	2				1					2	3	1		12	6	5	5	9	5	4
SNR ⁽⁰⁾					2				5	2		15	24	4	2							
SIA ^(0.2)																		9	24	14	1	
DWE ⁽⁰⁾				20	1		8		1	1		8		4			2	1				
SOP ⁽⁰⁾				1	11		7	3					6			8		2	3	4		
SPE ^(-0.1)	2		1	4	1		4	1	12	3	2	6			1	1				2	2	
COR ⁽⁰⁾								1				25			14							
SCM ^(0.1)					1					12	7	1		4	7	1				2	3	

Table 5—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
LIN ^(-0.1)	4	2		5				2	2	2	11	2	2	1	1	1	1					1
SMC ^(-0.1)			1	1	6					1	25											1
BSK ⁽⁰⁾								1	21					8								
SKA ^(-0.1)	1						4	3	10	1	1	8	2									
MCA ^(0.2)															1	13	4	4	1	4	1	
EPR ^(0.1)													22	1	3					1		
MIQ ^(-0.1)	10		1	4	7													3			1	
SQX ⁽⁰⁾				1		2	4	2		1	4	2		2	2	3				1	1	
LEG ^(-0.1)	1	1		4	1			1	3	1	2	3	1	2	1	1				1		
RCH ⁽⁰⁾			1	2		2		1		6					1		5	1	1	2		1
APR ^(0.1)				1	3		1		1							7	3	2	1	3		
SQU ^(-0.1)		1		3	3	1	2	4		2	1	2	1	1			1					
RUD ⁽⁰⁾				1		1	4	4	5	3	1			1		1				1		
OPH ⁽⁰⁾									20													
SHE ⁽⁰⁾										6	12		1									
TOA ^(0.1)									4	1		1	1	1		3	1	1	1	4		
SSK ⁽⁰⁾				3	1	2	3					3		2	1	2	1					
CYL ^(0.1)										1		5		1				1	1	5		3
ONG ^(0.1)										5		1	1	1	1	1			3	1		1
HTH ^(0.1)									1							4	2	3	1	3		
MAK ^(-0.1)	13																					
PSK ^(0.1)												1			1		1	3	1	5		
ETP ⁽⁰⁾				6						5		1										
ECN ⁽⁰⁾									4	1		2	4		1							
RSQ ^(-0.1)	9	1		1																1		
CRB ⁽⁰⁾				1					2	1		6	1	1								
MOK ⁽⁰⁾								12														
SRH ⁽⁰⁾								10					1									
BRG ^(0.1)																5	1	1	1	1		1
NEB ^(0.1)																	4	2	2	2		
ROC ⁽⁰⁾									1					2		6	1					
JFI ⁽⁰⁾	1								1		1		1		1	1		3	1			
MDO ⁽⁰⁾						10																
SSM ^(-0.1)	5		1											4								
OFH ⁽⁰⁾					2				1	4		1		1								1
SSI ⁽⁰⁾												9				1						
BBE ⁽⁰⁾		1						1			7											
PDG ^(-0.1)			1	2		1				1			4									
SRI ⁽⁰⁾												8				1						
CHP ⁽⁰⁾				1	1							2		1	1					1	1	
CHG ⁽⁰⁾				1					2			1			2		2					
IBR ^(0.1)																2	2					4
CSH ⁽⁰⁾				1	2			3		1								1				
MOC ^(0.1)																			5	2	1	
SQA ⁽⁰⁾															1	7						
CON ⁽⁰⁾	1					3				1	2					1						
GRC ⁽⁰⁾															8							
RHY ⁽⁰⁾									1	2										4		
DSK ⁽⁰⁾				1								1	1		1		1			2		
CSU ⁽⁰⁾											1								6			
ANT ^(0.1)														1	1	4				1		
SLC ⁽⁰⁾							7															
DDI ⁽⁰⁾																		7				
EEL ⁽⁰⁾									2			4								1		

Table 5—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
PAB ^(0.1)														3		2		1				
GSQ ⁽⁰⁾			1							1		1			1					1		1
ACS ^(0.1)																2	1	1	1	1		
KIC ^(0.1)															1	2	1				2	
SYN ⁽⁰⁾		1			1								3		1							
CEN ⁽⁰⁾				4	1							1										
ERO ^(0.1)																			5		1	
BTH ^(0.1)																4	1				1	
LUC ⁽⁰⁾								5	1													
SVA ^(0.1)																		1	4	1		
SPI ⁽⁰⁾							1		1	1	2	1										
DSS ⁽⁰⁾												6										
WPS ⁽⁰⁾														6								
MUR ⁽⁰⁾						5																
TAM ^(0.1)																2	1	1		1		
SWO ⁽⁰⁾		5																				
COD ⁽⁰⁾				1						1							2			1		
SWR ⁽⁰⁾									2	3												
HYD ⁽⁰⁾										3	1					1						
RSC ⁽⁰⁾										2	1					1						
BEL ⁽⁰⁾									2	1			1									
WIT ^(0.1)																1		1			2	
COB ⁽⁰⁾													3		1							
SBO ⁽⁰⁾											1			3								
SAF ⁽⁰⁾														4								
SBR ⁽⁰⁾				1	2										1							
RAG ⁽⁰⁾														1	1	1		1				
LDO ^(-0.1)	1			1				1			1											
LAN ⁽⁰⁾				1												2	1					
CBO ⁽⁰⁾					1																	
GLS ⁽⁰⁾																			1	2		
OSK ^(0.1)																1			1	1		
SOM ⁽⁰⁾													1					2				
BWH ⁽⁰⁾													3									
STA ⁽⁰⁾	1								1			1										
FRO ⁽⁰⁾		3																				
SNA ⁽⁰⁾			2				1															
CBD ⁽⁰⁾																3						
MST ⁽⁰⁾																	2			1		
FRS ^(-0.1)		1	1							1												
SWA ⁽⁰⁾				2			1															
CAR ⁽⁰⁾		2													1							
OCT ⁽⁰⁾							1				1				1							
OPE ⁽⁰⁾									3													
SBK ⁽⁰⁾	2																					
TSQ ⁽⁰⁾																			1	1		
PSY ⁽⁰⁾																	1		1			
SCH ⁽⁰⁾																						2
HYP ⁽⁰⁾													2									
ZAS ⁽⁰⁾																						2
BSQ ⁽⁰⁾			1			1																
BAC ⁽⁰⁾				1	1																	
PSL ⁽⁰⁾							2															
JMD ⁽⁰⁾													2									

Table 5—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
LAE ⁽⁰⁾		1								1												
SUR ⁽⁰⁾											2											
CHX ⁽⁰⁾											1	1										
VSQ ⁽⁰⁾																				1	1	
HYA ⁽⁰⁾																	1	1				
HCO ⁽⁰⁾					1										1							
TOP ⁽⁰⁾											1					1						
MOR ⁽⁰⁾								1							1							
NSD ⁽⁰⁾													2									
WAR ⁽⁰⁾											2											
JMM ⁽⁰⁾		2																				
RBM ⁽⁰⁾								1			1											
WWA ⁽⁰⁾				1																	1	
SLR ⁽⁰⁾												2										
COL ⁽⁰⁾							2															
LPI ⁽⁰⁾										1					1							
SMI ⁽⁰⁾													2									
PSQ ⁽⁰⁾																					1	
LSK ⁽⁰⁾		1																				
SDL ⁽⁰⁾																1						
GSC ⁽⁰⁾											1											
DEQ ⁽⁰⁾					1																	
EUC ⁽⁰⁾				1																		
PIN ⁽⁰⁾										1												
EMO ⁽⁰⁾										1												
CRS ⁽⁰⁾								1														
HGB ⁽⁰⁾																	1					
SCO ⁽⁰⁾																	1					
DIS ⁽⁰⁾												1										
LMU ⁽⁰⁾																	1					
TRS ⁽⁰⁾					1																	
PHO ⁽⁰⁾						1																
SUN ⁽⁰⁾																	1					
BAT ⁽⁰⁾															1							
SNO ⁽⁰⁾																		1				
SAR ⁽⁰⁾															1							
SLG ⁽⁰⁾												1										
BOO ⁽⁰⁾																					1	
SDR ⁽⁰⁾									1													
GAO ⁽⁰⁾											1											
BFE ⁽⁰⁾												1										
DCS ⁽⁰⁾					1																	
RSK ⁽⁰⁾																		1				
BJA ⁽⁰⁾		1																				
MAN ⁽⁰⁾																					1	
ECH ⁽⁰⁾							1															
BRC ⁽⁰⁾			1																			
PMI ⁽⁰⁾				1																		
NOT ⁽⁰⁾													1									
BFI ⁽⁰⁾													1									

Table 6: Jack mackerel trawl fishery. Total annual bycatch estimates (t) for individual species with at least 1 t of bycatch in at least one year, based on observer catch rates; blank cells are <1 t. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code (see <http://marlin.niwa.co.nz> for species code definitions).

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
BAR ⁽⁰⁾	1363	2596	1732	3268	2988	3008	4208	7223	3420	6194	6031	10863	9174	7942	2826	8860	9446	4842	4447	7300	3978	4422
EMA ⁽⁰⁾	2234	1751	1143	1060	1842	300	2086	1809	9378	296	1141	2170	699	3820	1703	1446	2416	1850	1886	2838	1207	973
FRO ⁽⁰⁾	449	1252	2210	1157	1665	134	644	1160	244	140	279	764	818	1342	1857	1924	1411	1851	1335	1478	920	1573
RBT ^(0.1)	149	725	874	888	59	114	700	499	1031	1893	1175	1437	1574	170	990	1698	1574	2277	1380	548	375	742
SPD ^(-0.1)	143	966	968	1108	503	901	1308	1287	130	538	490	571	195	25	66	209	174	47	76	96	99	108
WAR ^(-0.1)	323	112	338	221		6	461	309	223	2511	500	386	638	10	43	7	6	15	60	18	20	21
SQU ^(-0.1)	154	527	110	174	581	401	618	362	51	244	221	1092	412	43	35	227	283	125	44	131	45	69
SWA ⁽⁰⁾	4	45	400	30	30	467	196	1097	255	341	109	271	248	6	2	458	62	30	6	148	61	125
TAR ^(-0.2)	50	244	248	301	231	153	293	498	17	52	6	17	34	5	6	16	40	29	16	25	12	19
RCO ^(-0.3)	15	111	100	338	354	669	237	23	24	22	2	6	8	6	4	5	1		1	1	6	6
SCH ^(-0.2)	66	268	63	212	61	219	164	170	6	16	21	26	34	6	14	16	15	15	10	11	7	11
JDO ⁽⁰⁾	26	144	139	84	75	66	98	174	3	1	7	7	40	11	30	33	50	28	28	42	21	36
SDO ^(0.2)		1	1	6	10	35	37	113	33	3	3	69	125	41	121	105	126	94	102	39	11	25
HOK ^(-0.1)	4	5	9	121	68	214	102	55	7	7		18	76	38		20	3	45	18	4		6
SNA ^(0.2)	13	18	8	25	1	1	3	8		1	1	57	13	86	96	43	28	87	51	73	54	103
RBM ⁽⁰⁾	5	45	41	7	5	52	12	1	4	15	257	14	39	6	43	34	46	12	75	10	13	4
STU ⁽⁰⁾	1	4	5	4		87	8	34	303	38	22	19	36		1	10	2	4	2	11	64	18
GUR ⁽⁰⁾	10	95	18	35	30	32	47	55	6	7	21	30	94	5	15	27	29	21	9	26	12	17
POP ⁽⁰⁾	9	66	59	28	39	19	21	93	1		2	13	41	8	8	31	32	33	18	51	18	37
KIN ^(0.2)	1	10	1	3		4	9	15	47	1	11	93	9	12	71	16	55	56	25	64	29	66
THR ⁽⁰⁾	69	26	6	3	28	11	38	43	33	39	24	18	21	15	33	5	11	16	11	12	22	9
TRE ⁽⁰⁾		46	11	1	1	2		2	1			164		101	4	9	1	1	2	3	1	8
GSH ^(-0.3)	22	54	10	71	16	20	107	15	5	19	1		1		2							1
SPE ^(-0.3)	7	18	15	42	37	59	60	42					1			1			1	1		
PIL ^(0.2)		1		1	1				8	3	1	7	33	34	15	31	9	53	11	17		53
NOS ⁽⁰⁾			5								262											
STA ^(-0.3)	8	38	5	23	5	8	28	41		37	3	1	4					1	1	1		
LEA ^(-0.1)	6	39	51	2	5	11	10	21			1		19		1	7	9	2		1	1	1
SUN ^(0.1)	2	4	3	1	19	1	2	1	5			1	2	6	13	18	15	31	8	10	14	14
SKA ^(-0.2)	1	33		5	1		70	47			1	1	4									
SSK ^(-0.2)	9	29	14	23	6	29	1	21	15	4	1		2		2	1	1	1		1	1	1
RAT ^(-0.1)	1			32	10	5	14	2	77	2	2	1			2				1	1	1	6
HAP ⁽⁰⁾		5	1	3	4		8	41	7	15	4	19	14	1	1	6	3	2	3	5	1	2
SKI ^(-0.1)	5	16	3	10	5	1	5	6	57	12		5	5	3		1		2	3	2	1	
CAR ^(-0.3)	5	22	25	6	12		26	45														
SPO ^(-0.3)	7	26	2	10	2	29	46	3	2										4			
KAH ^(0.1)	6	1	2			17	20						4		1	6	14			2	27	15
MAK ^(0.1)	1			2	5	11	6	4	8	3	2	3	2	8	8	7	3	11	12	4	5	9
POS ^(-0.1)	2	2	3	4	1	5	6	20	18	13	11	10	5	1	1	1	2	1	1	2	2	1
SNI ⁽⁰⁾									92													
RDO ^(0.1)							12		3	1		8							2	65		1
LIN ^(-0.2)	2	12	2	16	3	4	4	10	1	4	3	5	2	2	1			4	1	1		
JFI ⁽⁰⁾														72				1				
RSK ^(-0.1)	1	13	27	4	15											1	2		1	1	1	1
RHY ⁽⁰⁾		1		3	1	1		40				2		4		2	2	1		2	1	
BPE ^(-0.1)		2		1	18		4	33										1	1			
CDO ^(0.1)									1				7	22			23			1		
NSD ^(-0.1)	2	39		6																		
SCG ^(0.1)	1	1		2			5	1					3		9	3	5	2	3	4	2	5
ERA ⁽⁰⁾	1	8	2	2	6		4	3	1				1	2	2	2	2	2	3	1	1	2
BWS ⁽⁰⁾			3	2	4	3	1	5	3	2	1	3	1		2	3	1	4	2	1	1	3

Table 6—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
HAK ⁽⁰⁾				1		1	11	6	1			10		11			2					
HPB ^(-0.2)	1	9	6	5	6	7	1			1			1		1			21	1			1
LDO ^(0.1)									9			2		1	3	1			1			
RBY ⁽⁰⁾		15					1	4								3	1	1			12	
SWO ⁽⁰⁾		1	1		1		4	2	8		2				2	1	2	4	1	2	3	
BEN ^(0.1)							2			1			3	7	5			14	1			
JGU ^(-0.1)		1		2	7		3	17						1			1					1
OPE ⁽⁰⁾			1	3	4	1		15								4				3	2	
SSI ⁽⁰⁾				1	5	2	7	6		3					1	1	1	1				1
SQX ⁽⁰⁾															28							
CSH ^(-0.1)				12		14																
EGR ^(0.1)		4		1				3						1		3	1	5	2	3	1	1
STR ⁽⁰⁾	1	3	1	1		2	3					1	2	1	1	1	1	3	2	1	1	
NOG ⁽⁰⁾					23																	
ALB ^(0.1)						4								5		1	1		1		5	2
BRA ^(-0.1)	1	3	3					2	3		5											
BWH ^(0.1)					4								1		1	1			1	1		1
MOO ^(-0.1)					1		2	2	2			2										
ELE ⁽⁰⁾									2	1			4				1				1	
SHA ^(-0.1)	1			1		1	1		1	2										1		
SEV ⁽⁰⁾			1				1	1		1			1			1				1	1	
RSN ^(-0.1)		1			3	1	2	1														
STN ⁽⁰⁾									1			4	2									
RAY ⁽⁰⁾		1		1	1			2					1								1	
PRO ⁽⁰⁾								1														
ANC ⁽⁰⁾																6						
JAV ⁽⁰⁾												1			1				4			
FOR ⁽⁰⁾									1				4									
RUD ⁽⁰⁾						1		1						2	1							
CUC ⁽⁰⁾	2				1													1		1		
TRU ⁽⁰⁾												4										
BYX ⁽⁰⁾				1										3								
BNS ^(-0.1)	1		1				1		1													
WPS ⁽⁰⁾											3							1				
STG ⁽⁰⁾									4													
ODO ⁽⁰⁾		3								1												
POR ⁽⁰⁾									3													
YFN ⁽⁰⁾												3										
BCO ^(-0.1)		1		1			1															
DMA ⁽⁰⁾															3							
CDL ⁽⁰⁾									3													
CON ^(-0.1)		2		1																		
WRA ⁽⁰⁾					1											1						
BSK ⁽⁰⁾				1					1													
BNE ⁽⁰⁾															2							
LAN ⁽⁰⁾																						2
WSE ⁽⁰⁾								1														
BKM ⁽⁰⁾																						1
HAT ⁽⁰⁾					1																	
TOA ⁽⁰⁾								1														
SPP ⁽⁰⁾																		1				
SND ⁽⁰⁾									1													
CBE ⁽⁰⁾																1						
NEX ⁽⁰⁾														1								

Table 6—continued

	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
SMA ⁽⁰⁾																						
NTU ⁽⁰⁾											1											
AQU ⁽⁰⁾																	1					
HEX ⁽⁰⁾												1										
SPF ⁽⁰⁾										1												
TRA ⁽⁰⁾									1													
OCT ⁽⁰⁾					1																	
WWA ⁽⁰⁾											1											
HEP ⁽⁰⁾		1																				
RPI ⁽⁰⁾					1																	
DOF ⁽⁰⁾	1																					
SPT ⁽⁰⁾									1													

Table 7: Scampi trawl fishery. Total annual bycatch estimates (t) for individual species with at least 1 t of bycatch in at least one year, based on observer catch rates; blank cells are <1 t. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code (see <http://marlin.niwa.co.nz> for species code definitions).

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
JAV ⁽⁰⁾	253	884	1042	451	854	1048	320	723	664	636	489	654	456	445	673	220	461	453	369	548	234	224
RAT ⁽⁰⁾	73	316	565	1071	1296	1191	434	376	440	251	225	641	449	498	388	111	219	201	197	362	174	129
SPE ⁽⁰⁾	126	246	451	308	792	590	78	570	226	169	159	420	585	314	492	131	202	194	113	148	127	97
LIN ^(-0.1)	295	468	603	469	620	330	335	399	271	171	194	286	300	156	161	28	81	53	53	45	22	26
HOK ^(-0.1)	205	334	645	271	456	243	311	175	191	142	232	260	170	88	134	69	94	121	109	93	47	58
GSH ⁽⁰⁾	5	109	217	67	61	82	137	151	21	25	30	57	83	70	106	72	99	64	44	28	22	47
FHD ⁽⁰⁾	42	8	60	74	98	328	1	62	80	104	3	113	68	81	44	76	38	55	51	48	42	30
STA ^(-0.1)	34	116	168	177	174	89	65	81	49	30	27	85	135	80	14	20	21	28	33	5	9	27
RCO ^(-0.1)	15	148	90	166	126	67	37	54	59	18	42	88	101	139	13	9	27	12	9	10	22	20
SSK ⁽⁰⁾	54	19	77	19	73	38	30	102	19	75		6	33	79	81	43	65	49	42	25	27	28
SWA ^(-0.2)	24	33	96	55	160	61	11	67	35	38	30	129	153	25	2	2	7	1	4	7	1	1
SPD ^(0.1)		14	24	26	21	42	230	19	2	27	24	38	78	62	23	27	73	45	70	38	5	11
CRB ^(-0.1)	2	61	42	27	83	131	44	104	27	37	27	58	56	105	18	7	6	9	6	1	10	6
SKA ^(-0.4)	19	19	8	44	64	145	46	34	141	36	78	114	49	4								
ASR ^(0.1)			5	35	1	179	119	98	7	31	9	77	46	12	22	11	15	18	16	24	4	4
SRH ⁽⁰⁾	57	32	4	10	79	124		13	16	18	5	8	5	1	35	8	81	27	16	20	21	16
HAK ^(-0.1)		27	38	35	82	20	52	59	19	16	17	58	39	42	13	2	10	3	3	4	1	2
CDO ⁽⁰⁾	56	56	1	7	50	17		3	19	3	2	12		2		32	85	43	26	37	21	8
BBE ⁽⁰⁾	20	1	8	15	14	41	1	35	106	61	56	18	27	25	2	4	2	12	3	6	5	5
SKI ^(-0.1)	48	20	24	7	20	48	32	6	39	16	29	21	4	1	8	13	23	20	4	13	13	8
SSI ⁽⁰⁾	1	10	59	23	17	13	52	47	2	1	7	13	16	26		21	20	14	21	25	14	14
TOA ⁽⁰⁾	1	5	40	15	4	12	87	57	29	36	9	24	13	34	1	8	11	8	6	2	5	6
RHY ^(0.2)	21	2		1	3	1		5	16	20	9	5	4	4		65	31	96	29	33	18	10
LDO ^(-0.1)	5	11	24	16	56	42	30	20	8	17	24	16	14	18	15	9	12	13	9	4	2	6
WWA ^(-0.1)		18	12	9	34	16	58	18	13	4	11	9	76	7	34	1	14	3	4	2		1
SQU ⁽⁰⁾	5	30	14	13	24	15	6	26	8	6	18	32	17	9	5	20	19	14	9	18	14	17
HTH ⁽⁰⁾	1		6	5			98	112	1			17	12			9	9	7	8	3	1	1
ANT ^(-0.1)		34	14	14			72	65	1	28	1	5	17	1		1	21	6	6			
RSK ^(0.1)		36	11	3	1		70	13	1		3	4	13	11	30	22	14	14	7	9	11	12
BEL ⁽⁰⁾			4	2	25	22	1	1	63	37	13	13	8		28		2	10		1	1	14
PRK ^(0.2)					1	62		42	1					1		1	104	13	3	2	12	2
RIB ^(-0.2)		1	4	12	129	10			4	6	4	1	3	4	1							
DSK ^(-0.2)	1	3	31	8	34		48	33	7	3						3		1		2	1	1
BNS ^(-0.3)	18	7	32	5	15	18	4	3	14	9	16	26	1	1	6							
CSH ^(0.1)	1		4	1	2		41	39	2				3	4		8	27	8	3		7	9
MDO ⁽⁰⁾	15	5	1		2	22	2	13	17	4	1	8	1	8	7	11	8	16	4	5	6	3
SDO ⁽⁰⁾		1	10	4	3	63			1			10	6	1	40	2	3			1	2	1
BER ^(-0.1)		3	14	7	57	2		10	9	13		5	11	3	3				1	2		
HAG ⁽⁰⁾	12	9	3	10	4	8	7	2	16	10	10	8	6	2	5	3	4	4	3	3	4	3
ERA ⁽⁰⁾	7	3	4	3	7	10		2	6	3	7	34	2	4	4	7	4	3	1	4	4	2
SMK ^(0.2)																60	25	13	6	4	4	2
SPI ^(-0.1)			2	11		28	34	30	2			4								1		
SBW ⁽⁰⁾			3	4		2	80	3				5	1	5		2			4		1	1
CON ⁽⁰⁾	1		4	14	13	4		5	10	11	8	2	8	11		1	3	3	1	3	2	2
SCH ^(-0.1)	6	6	3	3	6	24	3	5	4	9	7	3	5	1	4	2	4	3	1	3	1	2
DCS ^(-0.1)	1	4	54	1	2			31				6				2			1		1	
CAR ^(0.1)		8			1	14			5	12	6	10	4	4	3	5	5	6	5	6	4	3
HSI ^(0.2)	5							1		1				5	19	8	6	21	16	2	12	3
COU ⁽⁰⁾									72	21								1	2			
WSQ ^(0.1)		1		5	4		22	3	1			5	10	14		3	2	2	2	2	1	2
BYX ^(-0.2)	3	2	2	4	26	4	2	5	17	3	6	1	2		2							

Table 7—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
ECN ⁽⁰⁾		5						2	1	3	7	37	2	2	6			7		1			
OCT ⁽⁰⁾	1	1	2	3	5	5	1	4	2	2	1	5	1	31				1	1	1	1	2	
GSC ^(0.1)		8		4			7						2		17	25		2	1		4	1	
FLA ⁽⁰⁾		7				5		12		1	23	10			11						1		
SHA ^(-0.1)		2		4	3	11	11	5	3	3	5	1	13	1				1	3	2			
CRU ^(-0.1)		10							1		28	28											
CDX ^(0.1)																		15		43	7		
EEL ^(-0.1)	1	10	10						9	5	12	8	3										
PSK ^(0.1)					3				19	14	2					2	3			1	5	7	
YSG ⁽⁰⁾								50								3							
HAP ^(-0.1)		3	3	1	1	1	2	2	10	4	4	15	2	1			2					1	
YBO ^(0.1)	6							1		2		8			3	9	7	1		11		1	
ETL ^(0.1)	1	1		1	2	2		6	2	1		1	1		1	1	8	7	1	6	3	1	
VOL ⁽⁰⁾							27	14									2	2					
BWH ^(0.1)		1														16	15				13		
GAS ^(0.2)											3	11		2					4	11	3	2	8
HPB ^(-0.2)	9	2	4	1	4	2	1		4			6	3		7								
BRZ ⁽⁰⁾	4	3			1	4	1	3	1	3						2	6	7		2	5	1	
SCO ⁽⁰⁾						14	15	1	1				4					1					
NSD ⁽⁰⁾	6	2						14	4						1	2		5				1	
SND ^(-0.1)	1	1		1	2	3		1	1	1	1	13		6		2	1			1			
SCG ^(-0.1)				1	24			9															
TOP ^(-0.1)		1			13	1			9	4	3	1									2		
BSH ^(-0.1)		1	4	1	1	6			2		4	13	1										
ECH ^(-0.1)		8						3	1			17	2										
MOL ⁽⁰⁾		1		12			5			2					1	1	4	3	1				
TAR ^(-0.1)		3		1	1	7		7				8				1						1	
TFA ^(0.2)																		10	8	3	3	5	
PRA ^(0.1)							2	4		3			1				1		1	17			
MIQ ^(-0.1)			25	2				1															
GSP ^(0.1)								8		2		5	1	3		2	2	2	1		2		
PDG ^(-0.1)			2	4	4	1		2	2	2		1	2	4	1		1	1	1				
PSI ^(0.2)																1	11	5		1	1	7	
SHL ⁽⁰⁾					8	2	1		5				1	1		6							
STR ⁽⁰⁾					8	2	1	2	1			1				7	1						
BAS ^(-0.2)	5	2	2	2	3	1	1	2		2	1	2											
JFI ⁽⁰⁾							9	12						1									
SPT ^(0.2)																	7	3	8	1	1	2	
ACS ^(0.2)																6	1	3		5	3	3	
BTH ^(0.1)							3	5								2	1	8		2			
OPI ^(0.1)										16							2			1	1	1	
PIG ⁽⁰⁾			7	1			1	2									4	5	1				
BYS ⁽⁰⁾			2			1		1	1	2	7	2	1		1			1				1	
WIT ⁽⁰⁾		2	1	1	5		1						1	1			2	1	2	1	1	1	
GMC ^(0.2)																5		4	1	2	1	6	
OFH ⁽⁰⁾					18				1														
SUR ^(-0.1)	18																						
SNI ⁽⁰⁾					1		11			3							1		1				
CUC ^(-0.1)				1	2	2	4	3	1	1		1		1		1							
ZOR ^(0.1)																6		1			4	5	
HCO ⁽⁰⁾		1					4					3			2		5					1	
SLG ⁽⁰⁾							11	4					1										
TAY ^(0.1)																2	4	6	1	2			
FMA ^(0.1)																9		2		1	1	2	

Table 7—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
SBR ^(-0.1)			1		2			1	1			10											
LSK ⁽⁰⁾		1			1								5			1	1		4		1		
OSK ^(0.1)																	6			1	2	5	
SSH ⁽⁰⁾	3	1						3	2							1	2	1			1		
DWE ^(-0.1)			13			1																	
JMA ^(-0.1)	9	1			2	2																	
HMT ^(0.1)																6		1		2	3	2	
HEX ^(-0.1)			2	1	3			1	1	1	1		1				3						
HYM ^(0.1)																				9	4		
BRC ^(-0.1)		1		1	3	6				1	1												
AST ⁽⁰⁾								12															
NOS ^(-0.1)				8	3																		
BOA ⁽⁰⁾					1	1		1	1							1					3	3	
RAY ^(-0.1)				3		7				1													
FRO ^(-0.1)	1		2	1	2	1					2	1											
API ⁽⁰⁾		1				1		5						1			1	1					
SEE ⁽⁰⁾	2		1		3											1	1			1			
DMG ^(0.1)																5	3						1
ODO ⁽⁰⁾															9								
LHO ⁽⁰⁾																				8			
PNE ^(0.1)																				1	2	5	
SYN ⁽⁰⁾						6													2				
RPE ⁽⁰⁾					8																		
JGU ^(-0.1)		1	1		5					1													
ROC ⁽⁰⁾								7		1													
SPK ⁽⁰⁾										7	1												
ONG ⁽⁰⁾							5					1										1	
SPO ^(-0.1)	3		1		2	2																	
OPE ^(-0.1)		6				2																	
SQX ^(-0.1)					2	4	1	1															
PMU ^(0.1)																	3				1	3	
DAP ^(0.1)																3					1	1	2
NUD ⁽⁰⁾																6	1						
LCH ⁽⁰⁾				1	1	2		1										1	1				
SSC ⁽⁰⁾		7																					
NOG ⁽⁰⁾				7																			
WHE ⁽⁰⁾			3									3											
RCK ⁽⁰⁾													6										
MSL ⁽⁰⁾									1	1							1	2		1			
HYA ^(0.1)																		3				3	
COL ⁽⁰⁾																		6					
LAN ⁽⁰⁾												6											
GVO ⁽⁰⁾																4		1					
APR ^(0.1)												1						1		1			2
COR ⁽⁰⁾								5															
GIZ ⁽⁰⁾									5														
RBV ^(-0.1)		1	1	1		2																	
PLZ ⁽⁰⁾	5																						
CPA ^(0.1)																3					1	1	
TTA ⁽⁰⁾																				5			
BTS ^(-0.1)		2	3																				
SPZ ⁽⁰⁾						1						3						1					
LAG ^(0.1)																		1			1	2	
ALL ^(0.1)																					1	3	

Table 7—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
SBK ⁽⁰⁾					3												1					
CHI ⁽⁰⁾					4																	
EMO ⁽⁰⁾					1					3												
PCO ⁽⁰⁾	4																					
SMC ⁽⁰⁾																	4					
ETM ⁽⁰⁾		1					1			1							1					
SLR ⁽⁰⁾		2								2												
SDM ⁽⁰⁾																						3
HTR ⁽⁰⁾																2						1
CBB ⁽⁰⁾																	3					
LMI ⁽⁰⁾																					3	
PSY ⁽⁰⁾		3																				
SBO ^(0.1)												1								1		1
RUD ^(0.1)			1	1	1																	
BPE ⁽⁰⁾					3																	
MOD ⁽⁰⁾				2						1												
RDO ⁽⁰⁾							2						1									
DIR ^(0.1)																		1	1	1		
AFO ^(0.1)																	1	1			1	
OCP ⁽⁰⁾														3								
BEE ⁽⁰⁾												3										
HEP ⁽⁰⁾									1		1			1								
PAG ^(0.1)																					1	1
GDU ⁽⁰⁾																	2					
CSQ ⁽⁰⁾		1																	1			
EZE ⁽⁰⁾																1						1
SOL ⁽⁰⁾												2										
CBE ⁽⁰⁾				2																		
LUC ⁽⁰⁾	2																					
SNA ⁽⁰⁾							1	1														
CAM ⁽⁰⁾																1				1		
CJA ^(0.1)																					1	1
MNI ⁽⁰⁾																				1		1
CHX ⁽⁰⁾				1	1																	
PRU ⁽⁰⁾																		2				
BOC ⁽⁰⁾																1				1		
CAL ^(0.1)																					1	1
PNO ⁽⁰⁾																						2
CTU ⁽⁰⁾										2												
HJO ⁽⁰⁾												2										
EPR ⁽⁰⁾																		1				
EPL ⁽⁰⁾																		1				
SMT ⁽⁰⁾																		1				
ETB ⁽⁰⁾																					1	
JMD ⁽⁰⁾									1													
CDY ⁽⁰⁾																1						
ORH ⁽⁰⁾					1																	
KIC ⁽⁰⁾				1																		
PSE ⁽⁰⁾													1									
DAS ⁽⁰⁾																1						
CYP ⁽⁰⁾																1						
PED ⁽⁰⁾	1																					
CCO ⁽⁰⁾																		1				
SEV ⁽⁰⁾													1									

Table 7—continued

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
AIR ⁽⁰⁾										1												
BCO ⁽⁰⁾										1												
SCM ⁽⁰⁾											1											
KSP ⁽⁰⁾										1												
DWO ⁽⁰⁾							1															
PAM ⁽⁰⁾																						1
SUN ⁽⁰⁾																		1				
STG ⁽⁰⁾																					1	
PLS ⁽⁰⁾					1																	
BCD ⁽⁰⁾							1															
JMM ⁽⁰⁾				1																		
BCR ⁽⁰⁾							1															
APE ⁽⁰⁾																1						
MAK ⁽⁰⁾										1												
RBT ⁽⁰⁾																				1		
CVI ⁽⁰⁾																					1	
CBO ⁽⁰⁾				1																		
DHO ⁽⁰⁾																					1	
RSN ⁽⁰⁾									1													
EPO ⁽⁰⁾					1																	
NOT ⁽⁰⁾			1																			
DSU ⁽⁰⁾								1														

Table 8: Ling longline fishery. Total annual bycatch estimates (t) (with estimated CVs in parentheses) for individual species with at least 0.1 t of bycatch in at least one year, based on observer catch rates. Species are ordered by decreasing total catch. The slope of a regression through the data points is shown in parentheses alongside each species code. See <http://marlin.niwa.co.nz> for species code definitions).

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
SPD ⁽⁰⁾	480(11)	723(9)	1285(7)	938(16)	1030(20)	1808(12)	855(25)	978(26)	1446(14)	1783(15)	1178(14)	923(12)	1117(9)	1125(8)	714(12)	1204(7)	983(6)	947(18)	526(11)	436(14)
RIB ⁽⁰⁾	466(9)	409(7)	383(8)	520(8)	935(7)	205(10)	416(9)	578(10)	397(13)	373(13)	181(11)	354(10)	216(11)	313(8)	90(13)	247(10)	222(12)	422(16)	636(7)	589(6)
SND ⁽⁰⁾	97(14)	142(14)	152(14)	132(17)	148(16)	201(14)	156(15)	183(16)	350(13)	306(12)	190(13)	317(13)	267(13)	307(11)	106(23)	122(21)	97(23)	134(24)	270(12)	224(11)
SSK ⁽⁰⁾	54(6)	173(30)	171(6)	530(8)	272(16)	132(6)	240(29)	227(6)	355(6)	113(10)	70(16)	130(23)	92(11)	73(7)	72(11)	133(9)	132(13)	126(16)	108(18)	89(16)
SPE ⁽⁰⁾	76(7)	144(5)	202(5)	117(7)	137(10)	124(10)	132(11)	159(12)	156(7)	180(7)	76(18)	111(7)	161(9)	149(6)	104(11)	80(7)	81(7)	98(11)	119(7)	90(6)
BNS ^(-0.1)	755(17)	328(17)	66(26)	64(23)	105(25)	99(23)	63(24)	64(30)	64(33)	41(33)	39(29)	36(32)	53(22)	49(22)	55(20)	60(20)	60(24)	60(22)	66(20)	51(20)
RCO ⁽⁰⁾	20(15)	38(18)	30(13)	106(33)	74(7)	137(8)	113(9)	108(8)	182(11)	299(7)	95(18)	91(22)	66(18)	96(13)	57(20)	104(20)	65(11)	37(15)	17(13)	20(11)
SCH ⁽⁰⁾	44(18)	112(16)	151(17)	94(14)	133(16)	155(11)	68(14)	61(22)	111(13)	93(12)	72(12)	79(12)	70(12)	67(12)	41(15)	115(11)	89(10)	79(14)	48(12)	47(11)
RSK ^(0.2)	0.7(0)	0.8(0)	1.2(0)	1.7(61)	61(51)	130(18)	45(53)	45(71)	2.8(36)	98(5)	145(4)	314(9)	41(24)	52(10)	118(6)	149(6)	55(10)	8.7(50)	23(26)	12(29)
CON ^(-0.1)	299(6)	161(7)	85(10)	118(10)	70(11)	8.5(17)	30(14)	25(17)	68(12)	97(11)	36(17)	20(18)	15(23)	9.2(11)	45(15)	43(10)	22(8)	16(47)	4.8(72)	3.7(47)
HAK ^(0.2)	3.4(30)	3.7(27)	4.4(32)	5.9(38)	7(35)	6(37)	5.8(35)	4.1(34)	5.2(27)	5(28)	3.7(27)	3.9(36)	4(36)	3.8(38)	6.7(26)	112(34)	199(25)	246(25)	283(24)	251(23)
SKA ^(-0.4)	196(13)	187(45)	131(14)	82(16)	51(34)	202(10)	38(49)	49(52)	34(20)	65(10)	32(14)	21(31)	5.7(93)	0.4(0)	0.3(0)	0.5(0)	0.3(0)	0.4(0)	0.6(0)	0.4(0)
BCD ^(0.1)	0(-)	32(75)	12(20)	120(9)	78(10)	49(7)	42(7)	74(7)	44(11)	60(5)	82(5)	103(6)	8.2(17)	5.1(20)	35(9)	69(10)	189(12)	4.1(0)	40(12)	4.7(0)
BSH ⁽⁰⁾	25(20)	41(16)	51(16)	65(20)	54(26)	53(21)	48(20)	45(18)	76(16)	73(13)	96(12)	51(16)	58(15)	76(12)	50(18)	36(23)	27(18)	48(13)	36(17)	32(15)
NOT ^(-0.5)	518(13)	446(32)	53(7)	3(101)	2.5(143)	0(-)	0(-)	0(-)	2.9(34)	7.6(32)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
GSH ^(-0.1)	47(12)	87(11)	124(14)	125(13)	47(10)	64(8)	16(17)	23(19)	39(9)	55(10)	31(30)	14(10)	80(9)	36(15)	62(18)	30(11)	33(13)	29(19)	9.5(21)	5.5(18)
HCO ^(0.2)	3.9(0)	5.5(18)	5.6(18)	6.2(16)	5.2(19)	7.2(14)	5.3(19)	6.1(16)	25(19)	16(11)	7(14)	28(20)	19(26)	42(9)	44(21)	74(14)	36(25)	75(30)	179(9)	160(8)
BAS ⁽⁰⁾	41(20)	58(21)	51(20)	43(20)	78(20)	75(19)	38(17)	29(17)	34(17)	15(16)	18(18)	17(16)	26(18)	19(14)	18(19)	26(17)	21(24)	30(26)	46(30)	32(27)
DWD ^(-0.3)	20(52)	24(54)	28(56)	37(77)	58(49)	65(44)	66(37)	52(34)	112(32)	48(31)	34(42)	20(78)	68(25)	33(48)	23(67)	16(90)	0.2(0)	0.4(0)	0(-)	0.4(0)
ETM ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	373(53)	155(18)	59(15)	34(27)	5.7(49)	0.4(0)	6.3(71)	17(50)	22(54)	0(0)	0(0)	0(-)	0(-)	0(-)
GSP ^(0.2)	13(49)	7.8(97)	0.4(0)	0.3(0)	0.3(0)	0.5(0)	28(76)	30(9)	48(14)	63(9)	46(13)	26(9)	32(11)	19(5)	55(8)	124(6)	83(16)	18(14)	39(9)	34(6)
NSD ^(0.1)	12(23)	16(23)	14(23)	11(22)	28(21)	17(23)	5.6(25)	3.9(25)	14(37)	12(62)	8(33)	27(50)	52(15)	24(26)	26(37)	63(30)	64(23)	69(25)	83(24)	73(25)
OSD ^(0.1)	31(10)	33(9)	35(11)	50(11)	2.3(0)	0(-)	1.1(89)	0.2(0)	2.6(39)	23(23)	5.7(18)	24(30)	6.8(64)	23(22)	26(25)	53(15)	69(14)	38(21)	60(23)	55(17)
DWE ^(-0.1)	9.7(51)	13(53)	16(49)	27(49)	37(41)	107(14)	30(42)	27(39)	17(49)	13(51)	14(48)	15(49)	16(50)	16(48)	29(35)	21(52)	8.3(75)	7.1(76)	8.1(76)	5(80)
CSQ ^(0.4)	0(-)	0(-)	0(-)	0.1(0)	6.2(23)	13(26)	11(25)	9.7(25)	0(-)	0(-)	0(-)	7(53)	0(-)	0(-)	58(18)	21(31)	16(42)	40(43)	100(20)	89(18)
CAR ⁽⁰⁾	6.2(49)	8.7(46)	9.9(50)	16(51)	18(49)	19(43)	15(49)	10(44)	21(27)	19(23)	17(26)	16(29)	29(21)	35(26)	42(27)	15(17)	7(32)	15(41)	25(26)	15(25)
HAP ⁽⁰⁾	40(24)	25(19)	13(20)	14(36)	27(24)	30(13)	12(16)	11(20)	18(16)	14(12)	14(27)	11(19)	12(19)	16(16)	16(18)	16(18)	13(15)	11(20)	12(21)	10(20)
HAG ^(0.1)	7.4(14)	10(14)	8.2(12)	4.4(0)	12(20)	7(20)	4.7(30)	5.7(30)	21(13)	21(9)	17(28)	14(12)	30(12)	7.9(13)	26(12)	20(11)	15(13)	20(24)	27(12)	17(12)
SCO ^(0.2)	0(-)	27(15)	47(14)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	8.9(91)	0(-)	0(0)	0(0)	0(-)	11(40)	23(24)	23(26)	20(30)	21(29)
RAT ⁽⁰⁾	4.8(59)	7.5(35)	3.1(45)	5.6(47)	4.6(54)	6.1(40)	9.8(23)	8.9(16)	16(12)	16(13)	13(17)	12(11)	6.2(28)	7.9(22)	11(19)	7.2(20)	16(12)	2.7(0)	5(0)	2.9(0)
PLS ^(0.4)	0(-)	0(-)	0(-)	0(-)	4.6(22)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	9.9(44)	2.3(88)	5.9(61)	8.1(63)	0.4(0)	0.8(0)	18(73)	53(37)	26(38)
ETL ⁽⁰⁾	0(0)	6.5(15)	12(12)	52(43)	6.1(16)	8.7(11)	2.9(0)	2.3(0)	2.1(0)	3.5(29)	3.3(31)	1.1(0)	4.2(0)	1.4(0)	1.8(0)	1.8(0)	1.9(0)	2.5(0)	5.6(0)	3.7(0)
SFI ^(0.1)	0.1(0)	0.1(0)	0.2(0)	0.1(0)	0.3(0)	0.7(0)	5.5(26)	3.5(29)	14(52)	22(44)	25(29)	18(21)	0.2(0)	2.5(0)	1.8(56)	0.1(0)	1(0)	0.7(0)	1.6(0)	1.6(0)
RBM ^(-0.2)	35(16)	14(18)	1.6(0)	2.5(40)	8.7(16)	1.6(0)	7.4(19)	6.7(15)	2.9(0)	3.2(0)	1.5(0)	1.4(0)	1(0)	2.1(0)	0.4(0)	0.2(0)	0.5(0)	0.6(0)	0.6(0)	0.4(0)

Table 8—continued

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
ETB ^(0.3)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0.2(0)	48(19)	1.2(115)	15(42)	0(0)	0(–)	0(–)	4.4(68)	0.7(0)	0.8(0)	1.7(0)	4.3(33)
POS ^(-0.1)	3(68)	4.3(70)	3.6(67)	4(56)	6.3(58)	6(53)	3.4(42)	5.5(41)	4.6(38)	2.9(35)	3.6(28)	1.7(0)	1.5(66)	0.4(0)	1.3(0)	1.1(0)	2(51)	1.3(76)	1.5(0)	0.7(0)
CHI ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	19(60)	0(–)	0.6(0)	9.6(39)	12(39)	1.5(66)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	2.3(99)	0(–)
SKI ⁽⁰⁾	2.1(0)	2.9(34)	2.9(34)	3.2(31)	4.6(31)	4(36)	2.3(43)	1.6(0)	2.3(44)	1.4(0)	1.5(0)	1.5(0)	2(0)	1.7(0)	1.7(0)	1.6(0)	1.6(0)	1.7(0)	2(0)	1.8(0)
BWS ^(-0.1)	2.4(60)	1.5(66)	1(140)	2.7(91)	4.2(63)	3.2(76)	5.1(44)	4.2(41)	3.4(42)	2.2(46)	1.6(90)	1.3(76)	2.2(64)	1.7(85)	1.8(80)	2(71)	0.9(0)	0.9(0)	1.1(0)	0.8(0)
HPB ^(-0.1)	1.8(0)	5.7(25)	6.3(22)	4.9(54)	4.1(24)	3(34)	0.1(0)	0.2(0)	0.2(0)	0.6(0)	0(0)	0.2(0)	0.9(108)	2.5(69)	5.7(43)	4.8(36)	0.4(0)	0.2(0)	0.3(0)	0.2(0)
SSH ^(0.2)	0.2(0)	0.2(0)	0.2(0)	0.2(0)	0.2(0)	0.3(0)	0.2(0)	0.2(0)	0.4(0)	0.3(0)	0.6(0)	0.2(0)	0.3(0)	0.2(0)	0.3(0)	3.2(55)	5.4(56)	5.7(56)	5.7(58)	5.7(58)
HEX ^(0.2)	0(–)	0(–)	0(–)	0(–)	0(0)	0.1(0)	0(–)	0(–)	1.7(0)	2.5(40)	0.7(0)	0.5(0)	15(16)	0.2(0)	0(–)	1.5(0)	3.7(38)	2.7(52)	0.1(0)	0.1(0)
CHP ^(0.1)	6.7(74)	3(121)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(0)	0(–)	0(–)	0(–)	0(–)	0(–)	14(77)	0.3(0)	3.1(73)	0.3(0)
CSH ^(0.4)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0.6(182)	0.7(0)	0.5(0)	0.6(0)	0.1(0)	0(–)	1.5(115)	3.4(66)	4.8(55)	4.8(55)	4.9(57)	4.8(72)
HOK ^(0.2)	0.5(0)	0.2(0)	0(0)	0(0)	0.1(0)	0.2(0)	0.2(0)	0.2(0)	0.2(0)	0.2(0)	0.1(0)	0.8(0)	0.5(0)	0.5(0)	0.6(0)	1.2(0)	3.5(41)	5.3(54)	7.4(48)	4.6(44)
SCM ^(-0.1)	0(–)	0(–)	0(–)	0(–)	0.1(0)	0(–)	0.5(0)	20(22)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)
MAK ^(-0.1)	1.3(78)	1.1(92)	1.1(95)	1.7(118)	1.9(108)	1.7(118)	1.5(117)	1(101)	1.1(124)	1(105)	1.4(74)	1.2(87)	1.2(85)	1.1(92)	1(98)	0(–)	0(–)	0.2(0)	0.7(143)	0.4(0)
CYO ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	16(77)	0(–)	0(–)	0(–)	0(–)	0(0)	0(–)	0(0)	0(–)	0(–)	0(–)	0(0)	0(0)	0.1(0)
SEV ^(-0.1)	0.4(0)	0.5(0)	0.7(0)	1.1(93)	1.3(108)	1.1(88)	1(99)	0.8(127)	1.5(66)	1.6(65)	1.1(92)	1.2(82)	0.9(118)	0.6(0)	0.7(152)	0.2(0)	0.2(0)	0.2(0)	0.2(0)	0.2(0)
BYS ^(0.2)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.2(0)	0.2(0)	0.1(0)	0.1(0)	0.1(0)	1.1(0)	1.5(0)	2.2(47)	1.5(0)	1.7(0)	2.4(42)	1.7(0)
ANT ^(-0.1)	0(–)	0(–)	0(–)	0(–)	0.3(0)	0.5(0)	0.5(0)	0.4(0)	0.5(0)	2.5(0)	3.8(0)	4(25)	0(0)	0.2(0)	0(0)	0(–)	0(0)	0(–)	0(0)	0(–)
UNI ^(0.2)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0.1(0)	0.8(0)	1.5(0)	0.2(0)	1.4(74)	0.9(0)	1.6(0)	0(–)	3.5(41)	2(72)	0(–)	0(–)
CHG ^(0.2)	0(0)	0(0)	0(0)	0(0)	0(0)	0.1(0)	0.3(0)	0(0)	0.1(0)	0.9(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	1.2(0)	2.4(43)	4.7(70)	0.1(0)	1(0)	0.1(0)
DSK ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0.2(0)	3(0)	4.1(0)	3.7(27)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)
TAR ⁽⁰⁾	0.6(0)	0.7(0)	0.6(0)	0.5(0)	0.9(0)	0.7(0)	0.3(0)	0.2(0)	0.4(0)	0.1(0)	0.2(0)	0.1(0)	0.2(0)	0.3(0)	0.5(0)	0.7(0)	0.5(0)	0.5(0)	0.8(0)	0.6(0)
CYP ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0.3(0)	0.6(0)	0.5(0)	0.4(0)	0.1(0)	0(–)	0(–)	0.3(0)	0(–)	0(–)	0(–)	5.9(61)	1.1(0)	0(–)	0(–)	0(–)
JAV ^(0.2)	0(0)	0(0)	0(0)	0(0)	0.2(0)	0.3(0)	0.3(0)	0.4(0)	0.7(0)	1(0)	0.3(0)	0.2(0)	0.8(0)	0.4(0)	0.4(0)	0.2(0)	0.3(0)	0.4(0)	0.8(0)	0.7(0)
ASR ^(0.1)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	1(144)	1.1(130)	1.6(86)	0(–)	0(–)	0.1(0)	0.4(0)	0.5(0)	0(–)	1.2(0)	0.8(0)	0(–)	0(0)
OFH ^(0.2)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.3(0)	0.3(0)	0.2(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.5(0)	0.5(0)	0.8(122)	0.6(0)	0.6(0)	0.9(108)	0.7(0)
SQA ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	5.4(19)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)
SPO ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	4.2(106)	0(0)	0(0)	0(0)	0.2(0)	0.4(0)	0(–)	0.2(0)	0(0)	0.1(0)	0.1(0)	0(0)	0(–)	0(–)	0(–)	0(–)
BCO ⁽⁰⁾	0(–)	0(0)	0(0)	1.3(113)	0.8(122)	0.3(0)	0(–)	0.1(0)	0(–)	0(–)	0.5(204)	0(0)	0.1(0)	0.1(0)	0.4(0)	0.5(0)	0(0)	0(0)	0(0)	0(0)
STA ^(-0.1)	0(0)	0.1(0)	0(0)	0.1(0)	0.1(0)	0.2(0)	0.2(0)	0.1(0)	0.2(0)	1.2(0)	0.4(0)	0.6(0)	0.2(0)	0.5(0)	0(0)	0.1(0)	0(0)	0(0)	0(–)	0(–)
EEL ^(-0.2)	0.2(0)	0.3(0)	0.2(0)	0.2(0)	0.3(0)	0.3(0)	0.1(0)	0.1(0)	1.7(0)	0.1(0)	0.1(0)	0.3(0)	0.2(0)	0(0)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)
CEN ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	1.4(69)	2.4(60)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)
COU ^(-0.2)	0.2(0)	0.3(0)	0.3(0)	0.2(0)	0.2(0)	0.3(0)	0.2(0)	0.3(0)	0.5(0)	0.4(0)	0.3(0)	0.3(0)	0(0)	0(0)	0(0)	0(–)	0(–)	0(–)	0(–)	0(–)
BRC ^(0.2)	0(–)	0(–)	0(–)	0(–)	0(0)	0.1(0)	0.1(0)	0.1(0)	0(–)	0(–)	0(–)	0(–)	0(–)	0.1(0)	0.9(0)	0.7(0)	0.5(0)	0.3(0)	0.5(0)	0.3(0)
WWA ⁽⁰⁾	1.8(56)	0.7(0)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(0)	0(–)	0.1(0)	0.2(0)	0.3(0)	0.3(0)	0.2(0)
HEP ^(0.2)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(0)	0(0)	0.2(0)	0(–)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.7(154)	1.3(107)	0.7(0)
TOA ^(0.1)	0(–)	0(–)	0(–)	0(0)	0(–)	0(–)	0.6(0)	0.4(0)	0.5(0)	0.4(0)	0.2(0)	0.2(0)	0.1(0)	0.1(0)	0(–)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)
PTO ⁽⁰⁾	0(–)	0(–)	0(–)	0(–)	0(0)	0(0)	0.8(132)	0(–)	0(–)	0(–)	0(0)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	0(–)	2(101)	0(0)

Table 8—continued

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
DCS ^(0.1)	0(-)	0.1(0)	0.1(0)	0(-)	0(0)	0(-)	0(-)	0(-)	0(0)	0(0)	0(0)	0(-)	1(0)	0(0)	0(-)	0.3(0)	0.1(0)	0(0)	0.8(0)	0.2(0)
CRB ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(0)	0(0)	0(0)	0(0)	0.2(0)	0.4(0)	0.6(0)	1.2(0)	0(0)	0.1(0)	0(0)	0(-)	0(-)	0(-)	0(-)	0(0)
AST ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1.1(0)	0.9(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.2(0)	0.1(0)	0(0)	0(0)	0(0)	0(0)
THR ^(-0.1)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.1(0)	0.2(0)	0.2(0)	0.1(0)	0.2(0)	0.2(0)	0.2(0)	0(-)	0.3(0)	0(-)	0(-)	0(-)	0(-)
SHA ^(0.2)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.2(0)	0.2(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0.3(0)	0.3(0)	0.1(0)	0.8(0)
HYD ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0.5(0)	0.7(0)	0.2(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
SOT ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	1.5(0)	0(-)	0(-)	0(-)	0(0)	0(-)
SBR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0(-)	0(-)	0(-)	0(0)	0.3(0)	0.5(0)	0.5(0)	0(0)	0(0)	0(-)	0(-)	0(-)	0(-)	0(-)
APR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.4(0)	0.6(0)	0.1(0)	0.1(0)	0(0)	0(-)	0.1(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
BYX ^(-0.1)	0.8(0)	0.3(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0(0)	0(-)	0(-)
ONG ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0(0)	0.3(0)	0.4(0)	0.3(0)	0(-)	0(-)	0(-)	0(-)	0(0)	0(0)	0(0)	0(0)
FHD ⁽⁰⁾	0(-)	0(0)	0(0)	0(-)	0(0)	0(0)	0(0)	0(0)	0.2(0)	0.2(0)	0.1(0)	0(0)	0.2(0)	0(0)	0.1(0)	0(-)	0(-)	0(-)	0(0)	0(0)
HYB ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.3(0)	0.4(0)	0(-)	0.2(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
ELT ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0.1(0)	0(0)	0(-)	0(-)	0(-)	0(-)	0.7(0)	0(-)	0(-)	0(-)	0(-)
OCT ⁽⁰⁾	0.1(0)	0(0)	0(-)	0(0)	0(0)	0(-)	0(-)	0(0)	0.1(0)	0.1(0)	0(0)	0.1(0)	0(0)	0.1(0)	0.2(0)	0(0)	0(-)	0(-)	0(-)	0(-)
PSK ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0.2(0)	0.1(0)	0.1(0)	0(0)	0(-)	0.1(0)	0(0)	0(0)	0.1(0)	0.1(0)
ETP ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.4(0)	0.3(0)	0(-)	0(-)
GSC ⁽⁰⁾	0(-)	0(-)	0(-)	0.2(0)	0.1(0)	0(0)	0(-)	0(-)	0(0)	0(0)	0(0)	0(-)	0(-)	0(-)	0(0)	0.1(0)	0.1(0)	0(-)	0(0)	0(-)
SPI ⁽⁰⁾	0(-)	0(0)	0(0)	0(-)	0(-)	0(-)	0(0)	0(-)	0(0)	0.6(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
TOP ⁽⁰⁾	0(-)	0(-)	0(-)	0(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0.4(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0.1(0)
BTH ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.3(0)	0.2(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
PNE ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.5(0)	0(0)	0(0)	0(-)	0(-)
PSI ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.5(0)	0(-)	0(-)	0(-)	0(-)
PKN ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.5(0)	0(-)	0(-)	0(-)	0(-)
BSP ^(-0.1)	0(-)	0(-)	0(-)	0.1(0)	0.2(0)	0(-)	0.1(0)	0.1(0)	0(-)	0(-)	0(-)	0(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
SNR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(0)	0.4(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
GAS ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0(0)	0.2(0)	0(-)	0.1(0)	0(-)	0(-)	0(0)	0(0)	0(0)	0(0)
TRU ⁽⁰⁾	0.1(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0(0)	0(-)	0.2(707)	0(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
MOL ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.2(0)	0(-)	0(-)	0(-)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
ODO ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.3(0)	0(-)	0(-)	0(-)	0(-)
ECN ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.2(0)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)
HMT ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.2(0)	0(-)	0.1(0)	0(0)
ACS ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0.1(0)	0.1(0)
ECH ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.2(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
ROC ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(0)	0(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)
TOD ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
LCH ⁽⁰⁾	0(0)	0(0)	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0.1(0)	0(0)	0(0)	0(-)	0(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)

Table 8—continued

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
MOD ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0(-)	0.1(0)	0(-)
DMG ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(-)	0(-)	0(0)	0(0)
QSC ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0.1(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0(-)	0(-)
CPA ^(0.1)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0.1(0)
MSL ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(0)	0(0)	0(-)	0(-)
WHE ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0.1(0)	0(-)	0(-)	0(0)	0(0)	0(0)
WIT ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0(-)	0(-)	0(0)	0(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)
MOR ⁽⁰⁾	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(0)	0.1(0)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)

Table 9: Regression slopes for each species/species group and fishery, from Tables 1–8. Slopes indicating a decline in bycatch over time are highlighted in red, and slopes indicating an increase in bycatch over time are highlighted in green. Species/species groups are ordered alphabetically; blank cells = not estimated; LLL = ling longline fishery; HHL = hoki/hake/ling trawl fishery.

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
ABO						0.00		0.00	<i>Sarda australis</i>
ABR						0.00	0.00		<i>Alepisaurus brevirostris</i>
ACA			0.00			0.00	0.00	0.00	<i>Acanthephyra</i> spp.
ACN						0.00	0.00		<i>Acanella</i> spp.
ACS	0.00	0.00	0.17	0.08		0.09	0.00	0.17	Actinostolidae
ACT			0.00			0.00	0.00	0.00	<i>Achiropsetta tricholepis</i>
ADT			0.00						<i>Aphrodita</i> spp.
AER			0.00			0.00	0.00	0.00	<i>Aeneator recens</i>
AFO			0.06			0.00	0.00	0.00	<i>Aristaeomorpha foliacea</i>
AGR	0.00		0.00		0.00	0.00	0.00	-0.21	<i>Agrostichthys parkeri</i>
AIR			0.00				0.00		<i>Argyripnus iridescens</i>
ALB		0.00	0.00		0.11			0.00	<i>Thunnus alalunga</i>
ALL			0.06			0.00		0.00	<i>Alcithoe larochei</i>
ALS						0.00		0.00	<i>Carcharhinus albimarginatus</i>
AMA			0.00				0.00	0.00	<i>Acesta maui</i>
AME							-0.01		<i>Antipodocottus megalops</i>
AMO									<i>Aega monophthalma</i>
ANC					0.02	0.00			<i>Engraulis australis</i>
ANO						0.00	0.00	0.00	<i>Anoplogaster cornuta</i>
ANP						0.00	0.00	0.00	<i>Anotopterus pharao</i>
ANT	0.00	0.00	-0.10	-0.06		0.06	-0.01	0.11	Anthozoa
ANZ		0.00	0.00					0.00	<i>Ecionemia novaezelandiae</i>
APD			0.00						Aphroditidae
APE			0.01						<i>Acanthephyra pelagica</i>
APG						0.00		0.00	Epigonidae
API	-0.02	0.00	-0.02					0.00	<i>Alertichthys blacki</i>
APR	0.00	0.00	0.08	-0.02	0.00	0.05	0.03	0.12	<i>Apristurus</i> spp.
APT			0.00						<i>Argobuccinum pustulosum tumidum</i>
APU			0.00			0.00			<i>Aciculites pulchra</i>
AQU					0.01			0.00	<i>Acanthephyra quadrispinosa</i>
ARE			0.00					0.00	<i>Apatopygus recens</i>
ARG								-0.02	<i>Artedidraco glareobarbatus</i>
ARN					0.00	0.00			<i>Argonauta nodosa</i>
ASG						0.00	0.00		<i>Acesta saginata</i>
ASR	0.01	0.03	0.08	0.14	0.00	0.01	-0.02	0.20	
AST			-0.02	0.03		0.00	0.00	0.00	Astronesthinae (Subfamily)
ATR			0.00			0.00	0.00	0.00	Actiniaria (Order)
AWA	0.00		0.00			0.00	0.00	0.00	<i>Astrothorax waitei</i>
AWI			0.00					0.00	<i>Alcithoe wilsonae</i>
BAC						-0.04		0.00	<i>Bathygadus cottoides</i>
BAF	0.00					0.00	0.00	0.00	
BAM			0.00				0.00	0.00	<i>Bathyploetes</i> spp.
BAR	0.00	-0.02	0.00		0.05	0.00	0.00	-0.09	<i>Thyrsites atun</i>
BAS		0.01	-0.20	-0.04	0.00	0.00		0.07	<i>Polyprion americanus</i>
BAT		0.00	0.00			0.01	-0.01	0.00	<i>Rouleina</i> spp.

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
BBA					0.00	0.00		0.00	<i>Nesiarchus nasutus</i>
BBE	-0.05	-0.01	-0.05		0.00	-0.04	0.04	0.03	<i>Centriscops humerosus</i>
BCA	0.00	0.00				0.00	0.00	-0.11	<i>Magnisudis prionosa</i>
BCD	0.00	0.20	-0.01	0.06		0.00		0.00	<i>Paranotothenia magellanica</i>
BCO	-0.03	0.08	0.00	-0.03	-0.06	0.00	0.00	-0.02	<i>Parapercis colias</i>
BCR			-0.01			0.00	0.00	-0.02	<i>Brotulotaenia crassa</i>
BDA								0.00	<i>Sphyræna novaehollandiae</i>
BEE			0.00		0.00	-0.06	0.15	0.03	<i>Diastobranchnus capensis</i>
BEL	0.00	0.05	0.00		0.00	-0.01	0.00	0.17	<i>Centriscops</i> spp.
BEN	0.00		0.00		0.07	0.00	0.00	0.23	<i>Benthodesmus</i> spp.
BER			-0.14		0.00	0.00	0.00	-0.04	<i>Typhlonarke</i> spp.
BES			0.00			0.00	0.00	0.04	<i>Benthopecten</i> spp.
BET			0.00						<i>Alopias superciliosus</i>
BFE						0.00	0.00		<i>Bathysaurus ferox</i>
BFI						0.00	0.00	0.00	<i>Bathophilus filifer</i>
BFL		0.00						0.00	<i>Rhombosolea retiardia</i>
BGR						0.00			<i>Bathysauropsis gracilis</i>
BGZ		0.00						0.00	<i>Kathetostoma binigrasella</i>
BHE			0.00			0.00	0.00	0.00	<i>Bathypectinura heros</i>
BIG		0.00			0.00			-0.02	<i>Thunnus obesus</i>
BIV			0.00			0.00	0.00	0.00	Bivalvia
BJA						-0.02	0.04	-0.02	<i>Mesobius antipodum</i>
BKM					0.02			-0.05	<i>Makaira indica</i>
BLO						0.00		0.00	<i>Bathypterois longifilis</i>
BNE	0.00		0.00		0.01	0.00	0.00	0.02	<i>Benthodesmus elongatus</i>
BNO			0.00			0.00	0.00	0.00	<i>Benthoctopus</i> spp.
BNS	0.00	0.00	-0.29	-0.07	-0.07	-0.17	0.01	-0.10	<i>Hyperoglyphe antarctica</i>
BNT			0.00		0.00			-0.01	<i>Benthodesmus tenuis</i>
BOA	-0.04		0.04		0.00	0.00		-0.01	<i>Paristiopterus labiosus</i>
BOC		0.00	0.03			0.00		0.00	<i>Bolocera</i> spp.
BOE	0.00		0.00			-0.19	0.01	0.03	<i>Allocyttus niger</i>
BOO			0.00			0.02	0.00	0.00	<i>Keratoisis</i> spp.
BOT	0.00	0.00	0.00		0.00	0.00	0.00	0.00	Bothidae
BPE			-0.02		-0.10			-0.01	<i>Caesioperca lepidoptera</i>
BPF								0.00	<i>Notolabrus fucicola</i>
BPI			0.00			0.00	0.00	0.03	<i>Benthopecten pikei</i>
BRA		0.00			-0.11		0.00	0.02	<i>Dasyatis brevicaudata</i>
BRC	0.00		-0.10	0.21	0.00	-0.02	0.00	0.01	<i>Pseudophycis breviuscula</i>
BRE			0.00		0.00	0.00		0.00	<i>Bregmaceros macclellandi</i>
BRG			0.00			0.12	0.00	0.00	Brisingida
BRI	0.00		0.00					0.00	<i>Colistium guntheri</i>
BRN	0.00		0.00			0.00	0.00	0.00	Cirripedia (Class)
BRS	-0.01							-0.01	<i>Echinorhinus brucus</i>
BRU						0.00			<i>Barbourisia rufa</i>
BRZ			0.01		0.00			0.00	<i>Xenocephalus armatus</i>
BSH	-0.03	-0.01	-0.13	-0.01	0.00	-0.08	0.02	0.00	<i>Dalatias licha</i>
BSK		0.18	0.00		-0.03	-0.01	0.00	-0.14	<i>Cetorhinus maximus</i>
BSL						-0.13	0.06	0.07	<i>Xenodermichthys</i> spp.
BSP	0.00		0.00	-0.06	0.00	0.00	0.00	-0.02	<i>Taractichthys longipinnis</i>

Species	Fishery							Scientific name		
	SBW	SQU	SCI	LLL	JMA	ORH	OEO		HHL	
BSQ	-0.02		0.00		0.00	-0.04	0.00	-0.09	<i>Sepioteuthis australis</i>	
BSU						0.00	0.00		<i>Benthoosema suborbitale</i>	
BTA			0.00		0.00	0.00		0.00	<i>Brochiraja asperula</i>	
BTD							0.00		<i>Benthodytes</i> sp.	
BTE						0.00	0.00	0.00	<i>Benthoctopus tegginmathae</i>	
BTH	-0.06	0.03	0.06	0.03		0.06	0.02	0.08	<i>Notoraja</i> spp.	
BTM						0.00			<i>Bathymodiolus</i> spp.	
BTP						0.00	0.00		<i>Bathypathes</i> spp.	
BTS			-0.06			0.00		0.04	<i>Brochiraja spinifera</i>	
BTU					0.00	0.00		0.00	<i>Gasterochisma melampus</i>	
BUT						0.00		0.00	<i>Odax pullus</i>	
BWH			0.08		0.07	0.01			<i>Carcharhinus brachyurus</i>	
BWS		0.02	0.00	-0.05	0.04	0.00	0.00	-0.07	<i>Prionace glauca</i>	
BYD			0.00		0.00	0.00	0.00	0.08	<i>Beryx decadactylus</i>	
BYS	0.00	0.00	-0.01	0.20	0.00	0.13	0.00	0.22	<i>Beryx splendens</i>	
BYT						0.00	0.00		Bythitidae	
BYX	0.00	0.03	-0.23	-0.11	-0.01	-0.28	0.00	-0.13	<i>Beryx splendens</i> & <i>B. decadactylus</i>	
CAC								0.00	<i>Cancer novaezelandiae</i>	
CAF			0.00						<i>Carcharhinus falciformis</i>	
CAL			0.05			0.00	0.00	0.00	<i>Caenopedina porphyrogigas</i>	
CAM			0.03			0.00	0.00	0.00	<i>Camplyonotus rathbunae</i>	
CAN						0.00	0.00		<i>Cataetyx niki</i>	
CAR	0.00	0.29	0.14	0.04	-0.28	-0.02	0.00	0.14	<i>Cephaloscyllium isabellum</i>	
CAS	0.00							-0.04	<i>Coelorinchus aspercephalus</i>	
CAX						0.00	0.00		<i>Cataetyx</i> sp.	
CAY			0.00			0.00	0.02	0.00	<i>Caryophyllia</i> spp.	
CBA						0.00		0.00	<i>Coryphaenoides dossenus</i>	
CBB		0.00	0.02			0.11	0.00			
CBD		0.00			0.00	0.02	0.02	0.00		
CBE		0.01	-0.02		0.01	0.00		0.05	<i>Notopogon lilliei</i>	
CBG								0.00	<i>Cubiceps gracilis</i>	
CBI						0.00	0.00	-0.02	<i>Coelorinchus biclinozonalis</i>	
CBO	-0.05	0.00	-0.02			0.01	0.00	-0.14	<i>Coelorinchus bollonsi</i>	
CBR			0.00			0.00	0.00		Dendrophylliidae, Oculinidae, Caryophyllidae	
CBX								0.00	<i>Cubiceps baxteri</i>	
CCA								0.01	<i>Cubiceps caeruleus</i>	
CCO			0.02			0.00	0.00	0.03	<i>Coelorinchus cookianus</i>	
CCR		0.00	0.00			0.00			<i>Cetonurus crassiceps</i>	
CCX						0.00		0.06	<i>Coelorinchus parvifasciatus</i>	
CDG			0.00					0.00	Carangidae	
CDL			0.00			-0.01	-0.18	0.01	-0.02	Epigonidae
CDO	0.00	0.03	0.03		0.07	0.00	0.00	0.19	<i>Capromimus abbreviatus</i>	
CDX			0.14			0.00		0.00	<i>Coelorinchus maurofasciatus</i>	
CDY			0.01			0.00		0.00	<i>Cosmasterias dyscrita</i>	
CEN				-0.02		-0.05		0.00	Squalidae	
CEP					0.00	0.00		0.00	<i>Cepola haastii</i>	
CER						0.00	0.00	0.00	<i>Ceratias</i> spp.	
CFA						0.00		0.00	<i>Coelorinchus fasciatus</i>	
CFU						0.00		0.00	<i>Corallistes fulvodesmus</i>	

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
CHA						0.00	0.00	0.01	<i>Chauliodus sloani</i>
CHC		0.00				0.00		0.00	<i>Chaceon bicolor</i>
CHG				0.17		0.01	0.08	-0.01	<i>Chimaera lignaria</i>
CHI	0.00		-0.03	0.03		0.10	-0.02	-0.05	<i>Chimaera</i> spp.
CHM								0.00	<i>Chiasmodontidae</i>
CHP				0.07		0.03	0.07	-0.02	<i>Chimaera</i> sp.
CHQ						0.00	0.00	0.02	Cranchiidae
CHR						0.00	0.04		<i>Chrysogorgia</i> spp.
CHT			0.00						Chitonidae
CHX			-0.04			0.00	0.00	0.02	<i>Chaunax pictus</i>
CHY						0.00		0.00	<i>Coelorinchus trachycarus</i>
CIC			0.00			0.00	0.00	0.00	<i>Crella incrustans</i>
CID			0.00			0.00	0.00	0.00	Cidaridae
CIN						0.00			<i>Coelorinchus innotabilis</i>
CJA	0.00		0.05			0.00	0.00	0.11	<i>Crossaster multispinus</i>
CJX						0.00		0.00	<i>Coelorinchus mycterismus</i>
CKA						0.00	0.00	0.00	<i>Coelorinchus kaiyomaru</i>
CKX						0.00	0.00		<i>Coelorinchus trachycarus</i> & <i>C. acanthiger</i>
CLL						0.00	0.00		<i>Corallium</i> spp.
CMA						0.00			<i>Coelorinchus matamua</i>
CMO					0.00			0.00	<i>Latridopsis forsteri</i>
CMP						0.00		0.00	<i>Cheiraster monopedicellaris</i>
CMR			0.00					0.00	<i>Coluzea mariae</i>
CMT			0.00			0.00		0.00	Comatulida
CMU						0.00	0.02	-0.02	<i>Coryphaenoides murrayi</i>
CMX						0.00			<i>Coryphaenoides mcmillani</i>
COB			0.00		0.00	0.02	0.00	0.00	Antipatharia (Order)
COC			0.00					0.00	<i>Austrovenus stutchburyi</i>
COD			0.00			0.02	-0.01	-0.02	
COE						0.00	0.00	0.00	Coelenterata
COF		0.04	0.00			0.00	0.00	0.02	<i>Flabellum</i> spp.
COL			0.03			-0.02		0.07	<i>Coelorinchus oliverianus</i>
CON	-0.02	0.05	0.00	-0.15	-0.05	-0.04	0.00	0.11	<i>Conger</i> spp.
COR			-0.02	0.00		0.01	0.00	0.00	Stylasteridae (Family)
COT						0.00	0.00	0.00	<i>Cottunculus nudus</i>
COU		0.00	0.01	-0.22		0.04	0.00	-0.01	Corals (all)
COV			0.00					0.00	<i>Comitas onokeana vivens</i>
CPA	0.00		0.07	0.06		0.00	0.00	0.08	<i>Ceramaster patagonicus</i>
CPD					0.00	0.00		-0.03	Centrolophidae
CPH			0.00		0.00		0.00	0.00	Cephalopoda
CRA		-0.01	0.00		0.00	0.00	0.00	-0.02	<i>Jasus edwardsii</i>
CRB	0.00	-0.18	-0.10	0.02	0.00	-0.02	0.00	0.03	
CRD						0.00		0.00	<i>Coryphaenoides rudis</i>
CRE						0.00	0.00	0.00	<i>Calyptopora reticulata</i>
CRI			0.00			0.00	0.00	0.00	Crinoidea
CRM		0.00	0.00		0.00	0.00	0.00	0.00	<i>Callyspongia cf ramosa</i>
CRN		0.00				0.00	0.00	0.00	
CRO			0.00					0.00	<i>Centrostephanus rodgersii</i>
CRS						-0.01		0.00	<i>Callyspongia ramosa</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
CRU		-0.01	-0.06		0.00	0.00	0.00	-0.01	
CSE						0.00	0.00		<i>Coryphaenoides serrulatus</i>
CSH	0.00	0.00	0.07	0.39	-0.07	-0.04	-0.01	0.12	
CSP		0.00						0.00	<i>Coelorinchus spathulatus</i>
CSQ	-0.03	0.00	0.00	0.37		0.10	0.01	0.06	<i>Centrophorus squamosus</i>
CSS			0.00						<i>Calliostoma selectum</i>
CST						0.00	0.00	-0.02	<i>Caristius</i> sp.
CSU						0.03		0.00	<i>Coryphaenoides subserrulatus</i>
CTN			0.00						<i>Calliostoma turnerarum</i>
CTO						0.00		0.00	<i>Canthigaster callisterna</i>
CTP						0.00	0.00		<i>Calyptrophora</i> spp.
CTU			0.00					-0.01	<i>Cookia sulcata</i>
CUB	0.00		0.00			0.00	0.00	-0.03	<i>Cubiceps</i> spp.
CUC	0.00	0.00	-0.08		-0.02	0.00	0.00	0.00	<i>Paraulopus nigripinnis</i>
CUP						0.00	0.00	0.00	Flabellidae, Fungiacyathidae, Caryophyllidae
CVI			0.02					0.00	<i>Pycnoplax victoriensis</i>
CYL	0.00		0.00			0.12	0.00	0.20	<i>Centroscymnus coelolepis</i>
CYO	0.00			0.00		0.15	0.00	0.10	<i>Centroscymnus owstoni</i>
CYP	0.00		0.01	0.01		0.20	0.13	0.09	<i>Centroscymnus crepidater</i>
DAP			0.10			0.00		0.00	<i>Daganaudus petterdi</i>
DAS			0.01		0.00	0.00			<i>Pteroplatytrygon violacea</i>
DCO	0.00		0.00			0.00	0.00	0.00	<i>Notophycis marginata</i>
DCS	0.00		-0.13	0.11	0.00	-0.02		-0.04	<i>Bythaelurus dawsoni</i>
DDI			0.00			0.03	0.02	0.00	<i>Desmophyllum dianthus</i>
DEA	0.00		0.00		0.00	0.00	0.00	-0.12	<i>Trachipterus trachipterus</i>
DEQ						-0.02		-0.02	<i>Deania quadrispinosum</i>
DGT			0.00		0.00				Callionymidae
DHO			0.02			0.00	0.00	0.02	<i>Dermechinus horridus</i>
DIL					0.00				<i>Diloma subrostrata</i>
DIR			0.06		0.00	0.00	0.00	0.00	<i>Diacanthurus rubricatus</i>
DIS					0.00	0.00	0.00	0.00	<i>Diretmus argenteus</i>
DMA					0.01		0.00	0.00	<i>Diaphus malayanus</i>
DMG			0.07	0.05		0.00	0.00	0.06	<i>Dipsacaster magnificus</i>
DOF					-0.03				<i>Coryphaena hippurus</i>
DOS								-0.02	<i>Tiostrea chilensis</i>
DPE			0.00					-0.01	<i>Diaphus perspicillatus</i>
DPO						0.00		-0.02	<i>Desmodema polystictum</i>
DPP			0.00			0.00	0.00	0.00	<i>Diplopteraster</i> sp.
DPX						0.00	0.00		<i>Diplacanthopoma</i> sp.
DRE					0.00		0.00	0.00	<i>Diaphus regani</i>
DSE						0.00	0.00	0.00	<i>Derichthys serpentinus</i>
DSH								0.00	<i>Carcharhinus obscurus</i>
DSK	0.00	0.03	-0.16	0.01		0.03	-0.04	0.10	<i>Amblyraja hyperborea</i>
DSO						0.00	0.00	0.00	Demospongiae (Class)
DSP	-0.02	0.01	0.00			0.00		0.00	<i>Congiopodus coriaceus</i>
DSS					0.00	0.00	0.00	-0.01	<i>Bathylagus</i> spp.
DSU			-0.01						<i>Dosinia subrosea</i>
DWD				-0.28					
DWE	0.00		-0.06	-0.06	0.00	-0.05	0.00	0.20	

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
DWO	0.00		-0.01		0.00	0.00	0.00	0.15	<i>Graneledone</i> spp.
EBI								0.00	<i>Euprotomicrus bispinatus</i>
ECH			-0.06	-0.02		-0.01	0.00	-0.03	Echinodermata (Phylum)
ECN			0.02	-0.01		0.00	-0.01	-0.02	
ECO			0.00			0.00		0.00	<i>Echinorhinus cookei</i>
EEL	0.00		-0.14	-0.20	0.00	0.02	0.00	-0.06	
EEX	0.00	0.05	0.00			0.00		0.00	<i>Eynyniastes eximia</i>
EGA			0.00		0.00	0.00		0.00	<i>Euciroa galatheae</i>
EGR					0.10			0.00	<i>Myliobatis tenuicaudatus</i>
ELE			0.00		0.03	0.00	0.00	0.00	<i>Callorhinchus milii</i>
ELP			0.00		0.00	0.00	0.00	0.00	<i>Elthusa propinqua</i>
ELT				0.03		0.00	0.00	0.00	<i>Electrona</i> spp.
EMA	0.00		0.00		0.01			-0.20	<i>Scomber australasicus</i>
EMO			-0.02			0.00		0.04	<i>Etmopterus mollerii</i>
ENE			0.00		0.00	0.00	0.00		<i>Elthusa neocyttia</i>
EPD			0.00					0.03	<i>Epigonus denticulatus</i>
EPL			0.02		0.00	-0.10	-0.03	0.20	<i>Epigonus lenimen</i>
EPO			-0.02			0.00	0.00	0.00	<i>Melanostigma gelatinosum</i>
EPR			0.02			0.05	0.00	0.16	<i>Epigonus robustus</i>
EPZ						0.00	0.00	0.00	<i>Epizoanthus</i> spp.
ERA	0.00	0.00	-0.01		-0.01	0.00	0.00	0.02	<i>Torpedo fairchildi</i>
ERE						0.00	0.00	0.00	<i>Euplectella regalis</i>
ERO						0.06	0.00		<i>Enallopsammia rostrata</i>
ERR						0.00	0.00		<i>Errina</i> spp.
ESO			0.00			0.00		0.00	<i>Peltorhamphus novaezeelandiae</i>
ESZ						0.00			<i>Leptoscopus macropygus</i>
ETB	-0.05	0.00	0.02	0.30	0.00	0.09	0.29	0.20	<i>Etmopterus baxteri</i>
ETL	0.00	0.00	0.07	-0.01	0.00	-0.14	0.06	0.05	<i>Etmopterus lucifer</i>
ETM	0.00	0.00	-0.03	0.01		-0.04	0.07	-0.29	<i>Etmopterus</i> sp.
ETP				0.08		-0.04	-0.01	-0.01	<i>Etmopterus pusillus</i>
EUC			0.00			-0.02	0.00	0.13	<i>Euclichthys polynemus</i>
EZE		0.00	0.04			0.00	0.00	0.00	<i>Enteroctopus zealandicus</i>
FAN						0.00		0.00	<i>Pterycombus petersii</i>
FAR						0.00	0.00	0.00	<i>Farrea</i> spp.
FBA									<i>Neolatus tripes</i>
FHD	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.09	<i>Hoplichthys haswelli</i>
FLA	0.00	0.06	-0.04		0.00	0.00		0.00	
FLO		0.00	0.00			0.00	0.00	-0.01	
FLY			0.00			0.00			Exocoetidae
FMA	0.00	0.00	0.13	0.03		0.00	0.00	0.18	<i>Fusitriton magellanicus</i>
FOR					0.00		0.00	-0.01	<i>Forsterygion</i> spp.
FOX					0.00				<i>Bodianus flavipinnis</i>
FRO	0.00	0.09	-0.11		0.04	-0.04	0.00	-0.11	<i>Lepidopus caudatus</i>
FRS						-0.05	0.00	-0.02	<i>Chlamydoselachus anguineus</i>
FRX			0.00					-0.02	Trichiuridae
FTU	0.00	0.00			0.00			0.00	<i>Auxis thazard</i>
GAD						0.00			Gadidae
GAO						0.00	0.00	0.00	<i>Gadomus aoteanus</i>
GAR			0.00					0.00	<i>Hyporhamphus ihi</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
GAS			0.19	0.03	0.00	0.00	0.00	0.03	Gastropoda
GAT			0.00			0.00	0.00	0.00	<i>Gastroptychus</i> spp.
GBI									Gobiidae (Family)
GBR						0.00			<i>Bidenichthys consobrinus</i>
GDU			0.02			0.17	0.14	0.00	<i>Goniocorella dumosa</i>
GFL		0.07	0.00		0.00				<i>Rhombosolea tapirina</i>
GGL						0.00	0.00		<i>Guttigadus globosus</i>
GIZ			-0.01						<i>Kathetostoma giganteum</i>
GLB			0.00			0.00	0.00	0.00	<i>Contusus richiei</i>
GLO						0.00			<i>Glyphocrangon lowryi</i>
GLS	0.01		0.00		0.00	0.04	0.00	0.15	Hexactinellida (Class)
GMC	0.00	0.00	0.17					0.00	<i>Leptomithrax garricki</i>
GMU		0.00			0.00			0.00	<i>Mugil cephalus</i>
GOB						0.00	-0.01	0.00	<i>Mitsukurina owstoni</i>
GOC	0.00				0.00	0.00	0.00	0.00	Gorgonacea (Order)
GON		0.29	0.00		0.00	0.00		0.04	<i>Gonorynchus forsteri</i> & <i>G. greyi</i>
GOR			0.00			0.00	0.00	0.07	<i>Gorgonocephalus</i> spp.
GPF									<i>Notolabrus cinctus</i>
GRC		0.41				0.02	0.07	-0.01	<i>Tripteroptychus gilchristi</i>
GRG						0.00			<i>Tripteroptychus svetovidovi</i>
GRM			0.00			0.00	0.02	0.06	<i>Gracilechinus multidentatus</i>
GSA			0.00					-0.01	<i>Hoplostethus gigas</i>
GSC	0.00		0.07	0.00		0.00	0.00	0.04	<i>Jacquiniotia edwardsii</i>
GSE			0.00			0.00		0.00	<i>Gempylus serpens</i>
GSH	-0.10	0.14	-0.01	-0.09	-0.30	-0.16	-0.20	-0.10	<i>Hydrolagus novaezealandiae</i>
GSP	0.12	0.01	0.10	0.21	0.00	0.13	0.20	0.16	<i>Hydrolagus bemisi</i>
GSQ	0.01	0.00				0.03	0.00	0.02	<i>Architeuthis</i> spp.
GST	0.00					0.00	0.00	0.00	Gonostomatidae
GUL						0.00	0.00	0.00	<i>Eurypharynx pelecanoides</i>
GUR	0.00	0.01	0.00		-0.03	0.00		0.02	<i>Chelidonichthys kumu</i>
GVE							0.00	0.00	<i>Geodia vestigifera</i>
GVO			0.04			0.00	0.00	0.02	<i>Provocator mirabilis</i>
GYS						0.00		0.00	<i>Gyrophyllum sibogae</i>
HAG	0.00		-0.05	0.07	0.00	0.00	0.00	0.21	<i>Eptatretus cirrhatus</i>
HAK	-0.06	-0.01	-0.09	0.22	-0.05	-0.01	0.01	-0.03	<i>Merluccius australis</i>
HAL						0.00		0.02	<i>Halosauropsis macrochir</i>
HAP	0.00	0.12	-0.11	-0.04	0.03	0.00		-0.04	<i>Polyprion oxygeneios</i>
HAT			0.00		-0.02	0.00	0.00	0.00	Sternoptychidae
HCO	-0.04	0.00	0.02	0.19		-0.01	0.00	-0.04	<i>Bassanago hirsutus</i>
HDF					0.00	0.00	0.00	0.00	Leptomeduseae (Order), Anthoathecatae (Orders)
HDR					0.00	0.00	0.00	0.00	Hydrozoa (Class)
HEC			0.00			0.00	0.00	0.00	<i>Henricia compacta</i>
HEP			0.00	0.25	-0.02	0.00	0.00	0.03	<i>Heptranchias perlo</i>
HEX		0.03	-0.07	0.23	0.00			0.13	<i>Hexanchus griseus</i>
HGB						0.01	0.00	0.00	<i>Hydrolagus</i> sp. d
HIA	0.00					0.00	0.00	0.00	<i>Himantolophus appellii</i>
HJO	0.00		0.00			0.07	0.12	-0.01	<i>Halargyreus johnsonii</i>
HMT	0.00		0.14	0.05	0.00	0.00	0.00	0.07	Hormathiidae
HOK	-0.16	0.03	-0.09	0.23	-0.11	-0.05	0.14	-0.07	<i>Macruronus novaezealandiae</i>

Species	Fishery									Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL		
HOL	0.00					0.00	0.00	0.01		<i>Holtbyrnia</i> sp.
HOR								0.00		<i>Atrina zelandica</i>
HOW								0.00		<i>Howella brodiei</i>
HPB	0.00	-0.13	-0.18	-0.11	-0.18	0.00		-0.20		<i>Polyprion oxygeneios & P americanus</i>
HPE						0.00		0.00		<i>Halosaurus pectoralis</i>
HSI			0.22			0.00	0.00	0.00		<i>Haliporoides sibogae</i>
HTH	0.00	0.00	0.05	0.00	0.00	0.11	0.05	0.09		Holothurian unidentified
HTR	0.00		0.04			0.00	0.00	0.09		<i>Hippasteria phrygiana</i>
HYA	0.04	0.00	0.06		0.00	0.03	0.00	0.28		<i>Hyalascus</i> sp.
HYB				0.02		0.00		0.00		<i>Hydrolagus homonycteris</i>
HYD				0.01	0.00	0.00	0.02	0.02		<i>Hydrolagus</i> sp.
HYM			0.08							<i>Hymenocephalus</i> spp.
HYP	0.00					0.00	0.00	0.00		<i>Hydrolagus trolli</i>
IBR			0.00			0.07	0.02	0.00		<i>Isistius brasiliensis</i>
ICH						0.00				<i>Ichthyococcus</i> spp.
ICQ	0.00					0.00				<i>Idioteuthis cordiformis</i>
IDI						0.00	0.00			<i>Idiacanthus</i> spp.
ISI						0.00	0.01	0.00		Isididae
ISO			0.00				0.00	0.00		
JAV	0.08	0.29	-0.04	0.19	0.04	0.07	0.13	0.05		<i>Lepidorhynchus denticulatus</i>
JDO		0.00			-0.05			-0.02		<i>Zeus faber</i>
JFI	0.00	-0.06	-0.04		0.04	0.03	0.02	0.03		
JGU		-0.01	-0.08		-0.07			0.01		<i>Pterygotrigla picta</i>
JMA	0.00	-0.15	-0.12		-0.01	0.00	0.00	-0.26		<i>Trachurus declivis, T. murphyi, T. novaezelandiae</i>
JMD	0.01	-0.19	-0.01		0.23	0.00		-0.08		<i>Trachurus declivis</i>
JMM	0.00	-0.28	-0.02		-0.05	-0.03		-0.30		<i>Trachurus murphyi</i>
JMN		-0.04	0.00		0.53	0.00		-0.06		<i>Trachurus novaezelandiae</i>
KAH					0.05			0.00		<i>Arripis trutta, A. xylabion</i>
KIC	0.00		-0.02	0.01		0.07	-0.02	0.07		<i>Lithodes murrayi, Neolithodes brodiei</i>
KIN	0.00		0.00		0.19	0.00	0.00	0.01		<i>Seriola lalandi</i>
KSP			0.00				0.00			<i>Evechinus chloroticus</i>
KWH			0.00		0.00	0.00		0.02		<i>Austrofucus glans</i>
LAE			0.00			-0.03	-0.01	0.00		<i>Laemonema</i> spp.
LAG	0.00		0.08			0.00		0.00		<i>Laetmogone</i> spp.
LAM			0.00		0.00			0.00		<i>Geotria australis</i>
LAN	0.00	0.15	0.00		0.03	0.01	0.02	0.09		Myctophidae
LAT					0.00	0.00	0.00	0.00		<i>Alepisaurus ferox</i>
LCA						0.00		0.00		<i>Lophotus capellei</i>
LCH	-0.02		-0.03	-0.02	0.00	0.04	0.04	0.02		<i>Harriotta raleighana</i>
LCO						0.00				<i>Liocarcinus corrugatus</i>
LDO	-0.01	0.09	-0.06		0.08	-0.06	0.00	-0.01		<i>Cyttus traversi</i>
LEA		0.00			-0.14			0.00		<i>Meuschenia scaber</i>
LEG						-0.07	0.00	0.01		<i>Lepidion schmidti & Lepidion inosimae</i>
LEI						0.00				<i>Leiopathes</i> spp.
LEP						0.00	0.00			<i>Lepidocybium flavobrunneum</i>
LFB					0.00					<i>Zanclistius elevatus</i>
LFI						0.00				<i>Lissocampus filum</i>
LHC			0.00			0.00		0.00		<i>Leptomithrax longimanus</i>
LHE							0.00	-0.02		<i>Lampanyctodes hectoris</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
LHO			0.04			0.00	0.00	0.04	<i>Lipkius holthuisi</i>
LIN	-0.06	0.09	-0.15		-0.16	-0.06	-0.06	-0.01	<i>Genypterus blacodes</i>
LIP			0.00			0.00			<i>Liponema</i> spp.
LIZ			0.00		0.00	0.00			<i>Synodus</i> spp.
LLC		0.00	0.00					0.00	<i>Leptomithrax longipes</i>
LLE						0.00	0.00	0.00	<i>Lepidisis</i> spp.
LLL						0.00		0.00	<i>Lophotus lacepede</i>
LMI			0.04						<i>Leptomithrax</i> spp.
LMU						0.01	0.00	0.04	<i>Lithodes murrayi</i>
LNV			0.00			0.00	0.00	0.07	<i>Lithosoma novaezelandiae</i>
LPD								0.00	<i>Lampadena</i> spp.
LPI						0.00			<i>Lepidion inosimae</i>
LPS						0.00	-0.01	0.00	<i>Lepidion schmidtii</i>
LPT						0.00	0.00		<i>Lepidotheca</i> spp.
LSE						0.00	0.00		<i>Leiopathes secunda</i>
LSK	0.00	0.03	0.05		0.00	-0.02	0.00	0.11	<i>Arhynchobatis asperrimus</i>
LSO	0.00	0.00	0.00		0.00			0.01	<i>Pelotretis flavilatus</i>
LSQ	0.00					0.00			<i>Lycoteuthis lorigera</i>
LUC	0.00		-0.04			-0.02	0.00	-0.02	<i>Luciosudus</i> sp.
LUN								0.00	<i>Turbo smaragdus</i>
LYC						0.00	0.00	0.00	<i>Lyconus</i> sp.
MAK	0.02	-0.06	0.00	-0.14	0.12	-0.06		-0.06	<i>Isurus oxyrinchus</i>
MAL						0.00	0.00	0.00	Malacosteidae
MAN	-0.06	0.00	0.00		0.00	0.02	0.00	-0.13	<i>Neoachirosetta milfordi</i>
MCA						0.16	0.34	-0.04	<i>Macrourus carinatus</i>
MCC								0.00	<i>Malluvium calcareum</i>
MCH	0.00		0.00				0.00	0.00	<i>Notothenia angustata</i>
MCN						0.00	0.00	0.00	<i>Malacosteus niger</i>
MDO	0.00	0.03	0.04		0.00	-0.03	0.00	0.01	<i>Zenopsis nebulosa</i>
MEJ						0.00	0.00	0.00	<i>Melanocetus johnsonii</i>
MEN						0.00	0.00	0.00	<i>Melanostomias</i> spp.
MET						0.00		0.00	<i>Metelectrona</i> spp.
MGA			0.00					0.00	<i>Munida gracilis</i>
MIC	-0.02					0.00		0.00	<i>Microstoma microstoma</i>
MIN						0.00			<i>Minuisis</i> spp.
MIQ	-0.05		-0.09			-0.09	0.01	0.06	<i>Onykia ingens</i>
MMU									<i>Maurolicus australis</i>
MNI			0.05			0.00	0.00	0.00	<i>Munida</i> spp.
MOC						0.09	0.03		<i>Madrepora oculata</i>
MOD	0.00		-0.03	0.01	0.00	0.22	0.19	0.17	Moridae
MOK		0.00	0.00		0.00	-0.02		-0.10	<i>Latridopsis ciliaris</i>
MOL			0.00	-0.01		0.00	0.00	-0.01	
MOO	-0.14	0.00			-0.05	0.00	0.00	-0.18	<i>Lampris guttatus</i>
MOQ						0.00		0.00	<i>Onykia</i> sp.
MOR			0.00	0.01		0.00	0.00	-0.01	Muraenidae (Family)
MPH						0.00	0.00		Melamphaidae
MRL							0.00	0.00	Muraenolepididae
MRQ						0.00	0.00	-0.01	<i>Onykia robsoni</i>
MSL			0.05	0.04		0.00	0.00	0.00	<i>Mediaster sladeni</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
MST						0.04	0.00	0.00	Melanostomiidae
MTL						0.00			<i>Metallogorgia</i> spp.
MTP						0.00		0.00	<i>Myctophum</i> spp.
MUR						-0.02	0.00		<i>Muraenolepis marmoratus</i>
MUS			0.00					0.00	
MUU		0.00	0.00					0.00	
MYC								0.00	<i>Mycale</i> spp.
NAN									<i>Nansenia</i> spp.
NAT	0.00		0.00		0.00	0.00	0.00	0.00	
NAU						0.00	0.00		<i>Notostomus auriculatus</i>
NBI			0.00						<i>Neomyxine biniplicata</i>
NBU						0.00			<i>Kuronezumia bubonis</i>
NCA		0.04	0.00		0.00	0.00	0.00	0.00	<i>Nectocarcinus antarcticus</i>
NCB		0.51	0.00		0.00			0.02	<i>Nectocarcinus bennetti</i>
NCR									<i>Cyclograpsus insularum</i>
NEB	0.00		0.00			0.10	0.00	0.02	<i>Neolithodes brodiei</i>
NEC			0.00			0.00	0.00	0.00	<i>Nematocarcinus</i> spp.
NEI						0.00	0.00		<i>Gnathophausia ingens</i>
NET			0.00			0.00		0.00	<i>Nettastoma parviceps</i>
NEX					0.01	0.00	0.00	0.01	Nemichthyidae
NMA			0.00						<i>Notopandalus magnoculus</i>
NOC			0.00			0.00	0.00	0.02	<i>Notacanthus chemnitzi</i>
NOG	0.00	-0.09	-0.04		-0.04	0.00		-0.02	<i>Nototodarus gouldi</i>
NOK			0.00						<i>Lepidonotothen kempii</i>
NOM								-0.02	<i>Notoplax mariae</i>
NOR						0.00	0.02	0.00	<i>Normichthys yahganorum</i>
NOS	0.00	0.13	-0.06		-0.04	0.00		0.07	<i>Nototodarus sloanii</i>
NOT	0.00	0.00	-0.02	-0.51		0.00		0.00	Nototheniidae
NSD	0.00	0.00	-0.02	0.11	-0.13	0.00		0.21	<i>Squalus griffini</i>
NSO								0.00	<i>Neocyttus psilorhynchus</i>
NTO		0.00	0.00			0.00		0.00	<i>Notomithrax</i> spp.
NTU					0.00			-0.01	<i>Thunnus thynnus</i>
NUD			0.04			0.00		0.00	Nudibranchia (Order)
OAB						0.00	0.00		<i>Ophiactis abyssicola</i>
OAP						0.00			<i>Ocosia apia</i>
OAR	0.00					0.00		-0.12	<i>Regalecus glesne</i>
OBS									<i>Ranzania laevis</i>
OCP			0.01		0.00	0.00	0.00	0.00	
OCT	0.01	0.07	-0.03	-0.03	-0.02	0.00	-0.01	-0.09	<i>Pinnoctopus cordiformis</i>
ODO	0.00	0.00	0.02	0.03	-0.04	0.00		-0.01	<i>Odontaspis ferox</i>
ODT			0.00			0.00	0.00	0.00	<i>Odontaster</i> spp.
OEO						-0.18	0.08	-0.10	<i>P. maculatus</i> , <i>A. niger</i> , & <i>N. rhomboidalis</i>
OFH			-0.04	0.15	0.00	0.00	0.00	-0.02	<i>Ruvettus pretiosus</i>
OMM	0.00					0.00		0.00	<i>Ommastrephes</i> spp.
OMU						0.00			<i>Odontomacrus murrayi</i>
ONG	-0.05	0.08	0.02	0.05	0.00	0.10	0.00	0.09	Porifera (Phylum)
OPA	-0.02	0.00	0.00		0.00			0.03	<i>Hemerocoetes</i> spp.
OPC						0.00	0.00		<i>Ophiocreas</i> spp.
OPE		0.09	-0.06		-0.03	-0.01		0.00	<i>Lepidoperca aurantia</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
OPH	0.00		0.00			-0.02	0.00	0.00	
OPI	0.00		0.08		0.00	0.00	0.00	0.25	<i>Opisthoteuthis</i> spp.
OPL		0.00	0.00		0.00				Opheliidae
OPP						0.00	0.00	0.00	<i>Oplophorus</i> spp.
ORH			-0.02		0.00	-0.07	0.02	-0.09	<i>Hoplostethus atlanticus</i>
ORO							0.00	0.00	<i>Ophiacantha rosen</i>
OSD				0.13					Selachii
OSE						0.00	0.00	0.00	<i>Ophisurus serpens</i>
OSI			0.00			0.00	0.00	0.00	<i>Ophiocreas sibogae</i>
OSK	0.00		0.13		0.00	0.05	0.00	0.15	Rajidae (Family)
OSP	0.00		0.00			0.00	0.01	0.00	<i>Crassostrea gigas</i>
OSQ			0.00			0.00		0.00	<i>Octopoteuthidae</i>
OVM								0.00	<i>Ovalipes mollerii</i>
OXO						0.00		0.00	<i>Oreosoma atlanticum</i>
PAB	0.00					0.05	0.11	0.00	<i>Paragorgia arborea</i>
PAD		-0.34	0.00		0.00			0.00	<i>Ovalipes catharus</i>
PAG		0.00	0.05			0.00	0.00	0.00	Paguroidea
PAH	0.23				0.00			0.00	<i>Lampris immaculatus</i>
PAL	0.00					0.00	0.00	0.00	Paralepididae
PAM			0.02			0.00	0.00	0.00	<i>Pannychia moseleyi</i>
PAO						0.00	0.00	0.02	<i>Pillsburiaster aoteanus</i>
PAQ			0.00						<i>Polyipnus aquavitus</i>
PAZ							0.00	0.00	<i>Pachymatisma</i> spp.
PBA						0.00	0.00	0.00	<i>Pasiphaea barnardi</i>
PCH			0.00				0.00	0.00	<i>Penion chathamensis</i>
PCO			-0.04						<i>Auchenoceros punctatus</i>
PCS								-0.01	<i>Parmaturus macmillani</i>
PDA						0.00		0.00	<i>Paralomis dawsoni</i>
PDG	0.00		-0.05			-0.06	0.00	0.05	<i>Oxynotus bruniensis</i>
PDO			0.00			0.00		0.00	<i>Paphies donacina</i>
PDS	0.00		0.00		0.00	0.00	0.00	0.05	<i>Paradiplospinus gracilis</i>
PED			-0.03			0.00	0.00	0.00	<i>Aristaeopsis edwardsiana</i>
PFL			0.00			0.00		0.00	<i>Pseudechinus flemingi</i>
PHB						0.00	0.00	0.00	<i>Phorbas</i> spp.
PHO	0.00	0.00	0.00		0.00	-0.01	0.00	0.06	<i>Phosichthys argenteus</i>
PHS						0.00			<i>Paralomis hystrix</i>
PHW	0.00	0.00	0.00		0.00	0.00	0.00	0.00	<i>Psammocinia cf hawere</i>
PIG	-0.09	0.29	-0.01		0.00	0.00		0.06	<i>Congiopodus leucopaecilus</i>
PIL			0.00		0.24				<i>Sardinops sagax</i>
PIN						0.00	0.00	0.02	<i>Idiolphorhynchus andriashevi</i>
PIP					0.00			0.00	Syngnathidae
PJS						0.00			<i>Heterodontus portusjacksoni</i>
PKI			0.00						<i>Polyipnus kiviensis</i>
PKN			0.00	0.03		0.00	0.00	0.06	<i>Plutonaster knoxi</i>
PLE						0.00	0.00		Plexauridae (Family)
PLM			0.00					0.00	<i>Plesionika martia</i>
PLN						0.00	0.00	0.00	<i>Poecillastra laminaris</i>
PLS	0.00	0.00	-0.02	0.45		0.02	0.02	0.00	<i>Proscymnodon plunketi</i>
PLT			0.00			0.00	0.00	0.04	<i>Plutonaster</i> spp.

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
PLY			0.00			0.00	0.00	0.00	<i>Polychaetes spp.</i>
PLZ			-0.05			0.00			<i>Pleuroscopus pseudodorsalis</i>
PMA			0.00		0.00			0.00	<i>Caprodon longimanus</i>
PMI						-0.02	0.00	0.00	<i>Pseudotriakis microdon</i>
PMN						0.00	0.00		<i>Primnoa spp.</i>
PMO	0.00		0.00			0.00	0.00	0.02	<i>Pseudostichopus mollis</i>
PMU			0.08			0.00		0.00	<i>Paramaretia peloria</i>
PNE	0.00		0.10	0.06		0.00	0.00	0.00	<i>Proserpinaster neozelanicus</i>
PNN			0.00		0.00	0.00	0.00	0.00	<i>Pennatula spp.</i>
PNO			0.04						<i>Pteropeltarion novaezealandiae</i>
POL			0.00		0.00	0.00		0.00	Polychaeta
POM	0.01				0.00	0.00		0.00	Bramidae
POP					0.01			0.00	<i>Allomycterus jaculiferus</i>
POR	-0.02	0.00			-0.01	0.00		-0.25	<i>Nemadactylus douglasii</i>
POS	0.01	0.03	0.00	-0.10	-0.06	0.00	0.00	-0.08	<i>Lamna nasus</i>
POT					0.00				
PPA						0.00		0.00	<i>Projasus parkeri</i>
PRA	0.00		0.05			0.00	0.00	0.00	
PRI						0.00	0.00		Primnoidae
PRK	0.00		0.15		0.00	0.00		0.00	<i>Ibacus alticrenatus</i>
PRO					0.01			0.00	<i>Protomyctophum spp.</i>
PRU			0.02			0.00	0.00	0.02	<i>Pseudechinaster rubens</i>
PSE	0.00		0.00			0.00	-0.01	0.00	<i>Pseudechinus spp.</i>
PSI	0.00		0.17	0.03	0.00	0.00	0.00	0.14	<i>Psilaster acuminatus</i>
PSK		0.00	0.10	0.11	0.00	0.11	0.00	0.16	<i>Bathyraja shuntovi</i>
PSL						-0.02	0.02		<i>Paralomis dosleini</i>
PSN	0.00								<i>Pseudechinus novaezealandiae</i>
PSO							0.00	-0.03	<i>Psolus spp.</i>
PSP						0.00		0.03	<i>Psenes pellucidus</i>
PSQ	0.00		0.00			0.02	0.00	0.08	<i>Pholidoteuthis massyae</i>
PSY	0.00		-0.04		0.00	0.03	0.01	-0.02	<i>Psychrolutes microporos</i>
PTA						0.00	0.00	0.00	<i>Pasiphaea aff. tarda</i>
PTM			0.00			0.00		0.00	<i>Platymaia maoria</i>
PTO			0.00	0.04				0.00	<i>Dissostichus eleginoides</i>
PTP						0.00	0.00		<i>Parantipathes spp.</i>
PTU			0.00		0.00	0.00	0.00	0.00	Pennatulacea (Order)
PUF					0.00	0.00		0.00	<i>Sphoeroides pachygaster</i>
PVE						0.00	0.00	0.00	<i>Pyramodon ventralis</i>
PZE	0.00		0.00				0.00	0.02	<i>Paralomis zealandica</i>
QSC		0.04		0.00	0.00			0.00	<i>Zygochlamys delicatula</i>
RAG	0.00		0.00		0.00	0.04	0.02	-0.12	<i>Pseudoicichthys australis</i>
RAT	-0.06	0.07	-0.05	0.00	-0.07	0.02	0.12	0.02	Macrouridae
RAY			-0.06		-0.05	0.00	-0.02	0.01	Torpedinidae, Dasyatidae, Myliobatidae, Mobulidae
RBM	0.14	-0.18	0.00	-0.19	0.02	-0.01	0.00	-0.05	<i>Brama brama</i>
RBP					0.00			0.00	<i>Hypoplectrodes huntii</i>
RBT	0.00	0.07	0.02		0.06	0.00		0.05	<i>Emmelichthys nitidus</i>
RBV		0.00	-0.08		0.01	0.00		-0.22	<i>Plagiogeneion rubiginosum</i>
RCH	0.00					0.04	0.00	0.00	<i>Rhinochimaera pacifica</i>
RCK			0.01			0.00			Acanthoclinidae

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
RCO	-0.01	0.04	-0.09	-0.02	-0.27	0.00	0.00	-0.09	<i>Pseudophycis bachus</i>
RDO		0.12	-0.01		0.07			0.14	<i>Cyttopsis roseus</i>
REM					0.00			0.00	Echeneididae
RGR			0.00		0.00	0.00	0.00	0.00	<i>Radiaster gracilis</i>
RHY	0.00		0.16		0.01	0.02	0.00	0.21	<i>Paratrachichthys trilli</i>
RIB	0.00	0.00	-0.18	-0.02	0.00	-0.06	-0.01	-0.02	<i>Mora moro</i>
RIS						0.00	0.00	0.07	<i>Bathyraja richardsoni</i>
RMB						0.00			<i>Manta birostris</i>
RMU	0.00							-0.02	<i>Upeneichthys lineatus</i>
ROC		0.00	-0.02	0.02		0.04	0.03	0.00	<i>Lotella rhacinus</i>
ROS						0.00		-0.01	<i>Rosenblattia robusta</i>
RPE			-0.03		0.00			0.00	
RPI					-0.02				<i>Bodianus vulpinus</i>
RRC						0.00			<i>Scorpaena cardinalis</i> & <i>S. papillosus</i>
RSC						0.01			<i>Scorpaena papillosa</i>
RSH								0.01	Carcharhinidae (Family)
RSK	0.04	0.28	0.11	0.16	-0.08	0.01	0.00	0.11	<i>Zearaja nasuta</i>
RSN			-0.01		-0.09			-0.02	<i>Centroberyx affinis</i>
RSQ	0.00	0.00	0.00			-0.08	0.00	0.03	<i>Ommastrephes bartrami</i>
RUD	0.00		-0.06		-0.01	-0.04	-0.03	-0.03	<i>Centrolophus niger</i>
SAB						0.00	0.00	0.00	<i>Evermannella indica</i>
SAF			0.00			0.01		0.00	<i>Synaphobranchus affinis</i>
SAI					0.00			0.02	<i>Istiophorus platypterus</i>
SAR						0.01			<i>Squilla armata</i>
SAU			0.00			0.00		0.00	<i>Scomberesox saurus</i>
SAW					0.00	0.00	0.00	-0.02	<i>Serrivomer</i> spp.
SBI	0.03		0.00			-0.13	-0.02	-0.03	<i>Alepocephalus australis</i>
SBK			-0.01		0.00	-0.04	0.00	0.04	<i>Notacanthus sexspinis</i>
SBN			0.00			0.00	0.00	0.00	Scalpellidae (Family)
SBO	-0.04	0.00	0.05		0.00	0.01	0.00	0.04	<i>Pseudopentaceros richardsoni</i>
SBR	0.00		-0.06	0.01	0.00	-0.03	0.01	0.00	<i>Pseudophycis barbata</i>
SBW	-0.01	0.13	-0.01		0.00	0.00	0.03	0.22	<i>Micromesistius australis</i>
SCA		0.00	0.00					0.00	<i>Pecten novaezelandiae</i>
SCC				0.03					<i>Stichopus mollis</i>
SCD	0.00	0.04	0.00					0.02	<i>Notothenia microlepidota</i>
SCG			-0.08		0.12		0.00	0.02	<i>Lepidotrigla brachyoptera</i>
SCH		0.27	-0.07	-0.03	-0.15	0.04		0.02	<i>Galeorhinus galeus</i>
SCI	0.00		-0.04		0.00	0.00	0.00	0.11	<i>Metanephrops challengerii</i>
SCM	0.00	0.00	0.00	-0.07	0.00	0.08	0.02	0.18	<i>Centroscymnus macracanthus</i>
SCO	0.00		-0.05	0.24	0.00	0.01	0.00	0.08	<i>Bassanago bulbiceps</i>
SCY						0.00		0.00	Scyphozoa (Class)
SDE						0.00	0.00	-0.02	<i>Cryptosaras couesii</i>
SDF	0.00		0.00					0.00	<i>Azygopus pinnifasciatus</i>
SDL			0.00			0.01			<i>Scorpaena cardinalis</i>
SDM			0.04			0.00	0.00	0.02	<i>Sympagurus dimorphus</i>
SDO	0.00	0.43	-0.01		0.19	0.00	0.00	0.12	<i>Cyttus novaezealandiae</i>
SDR					0.00	-0.01		0.02	<i>Solegnathus spinosissimus</i>
SEE	0.00		-0.03	0.29	0.00	0.00	0.00	0.11	<i>Gnathophis habenatus</i>
SEN						0.00	0.00		<i>Actinia</i> spp.

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
SEP								0.00	<i>Sergia potens</i>
SEQ									Sepiolidae
SER			0.00					0.00	<i>Sergestes</i> spp.
SEV		0.00	0.00	-0.07	0.02	0.00		0.09	<i>Notorynchus cepedianus</i>
SFI				0.10					Asteroidea & Ophiuroidea
SFL		0.00	0.00					0.00	<i>Rhombosolea plebeia</i>
SNF						0.00	0.00	0.00	<i>Diretmichthys parini</i>
SHA	0.01	0.00	-0.08	0.16	-0.06	-0.11	-0.10	-0.02	
SHE	0.00		0.00			-0.01		-0.04	<i>Scymnodalatias sherwoodi</i>
SHL			-0.04		0.00				<i>Scyllarus</i> sp.
SHO					0.00				<i>Hippocampus abdominalis</i>
SHR			0.00						Aplysiomorpha (Order)
SIA			0.00			0.15	0.02	0.00	Scleractinia
SID			0.00			0.00	0.00	0.00	Platyroctidae
SKA	-0.08	-0.01	-0.37	-0.40	-0.19	-0.07	-0.03	-0.34	Rajidae Arhynchobatidae (Families)
SKI		-0.17	-0.06	-0.04	-0.14	0.00	0.00	-0.04	<i>Rexea</i> spp.
SKJ		0.00	0.00		0.00			0.00	<i>Katsuwonus pelamis</i>
SLB						0.00	0.00	0.04	<i>Scymnodalatias albicauda</i>
SLC						-0.02			<i>Slosarczykovia circumantarctica</i>
SLG			-0.04		0.00	0.00	0.00	0.00	<i>Scutus breviculus</i>
SLK			0.00			0.06	0.18	0.19	Alepocephalidae
SLL			0.00		0.00	0.00	0.00	0.00	Scyllaridae
SLO			0.00		0.00			0.00	<i>Arctides antipodarum</i>
SLR			-0.04			0.00		0.00	<i>Optivus elongatus</i>
SLS		0.00						0.00	<i>Peltorhamphus tenuis</i>
SMA		0.00			0.01			0.00	<i>Stigmatophora macropterygia</i>
SMC			0.02			-0.05	0.03	-0.07	<i>Lepidion microcephalus</i>
SMI	0.00	0.00				0.00	0.00		<i>Somniosus microcephalus</i>
SMK			0.25			0.00		0.00	<i>Teratomaia richardsoni</i>
SMO	0.00	0.00	0.00		0.00	0.00	0.00	0.00	<i>Sclerasterias mollis</i>
SMT			0.02					0.00	<i>Spatangus mathesoni</i>
SNA		-0.02	-0.02		0.17	-0.04		-0.08	<i>Pagrus auratus</i>
SND	0.00	0.00	-0.07	0.01	-0.01	0.06	0.09	-0.01	<i>Deania calcea</i>
SNE			0.00			0.00	0.00	0.04	<i>Simenchelys parasitica</i>
SNI	0.00	-0.02	-0.01		-0.02	0.00		0.02	<i>Macroramphosus scolopax</i>
SNO			0.00			0.02		0.03	<i>Sio nordenskjoeldii</i>
SNR				0.03		0.00	0.04	-0.01	<i>Deania histricosa</i>
SNS			0.00					0.00	Psammobiidae
SOB						0.00			<i>Sternoptyx obscura</i>
SOC					0.00	0.00	0.00	0.00	Alcyonacea (Order)
SOL	0.00		0.00		0.00	0.00	0.00	0.00	
SOM	0.00					0.03	0.00	0.00	<i>Somniosus rostratus</i>
SON									<i>Solenocera novaezealandiae</i>
SOP	0.03					0.03	0.00	-0.02	<i>Somniosus pacificus</i>
SOR			0.00			-0.11	0.02	-0.01	<i>Neocyttus rhomboidalis</i>
SOT			0.00	0.03		0.00	0.00	0.04	<i>Solaster torulatus</i>
SPA								0.00	<i>Sprattus antipodum</i>
SPD	0.00	0.04	0.07	-0.01	-0.13	-0.20	-0.03	-0.01	<i>Squalus acanthias</i>
SPE	0.00	0.06	-0.04	-0.02	-0.29	-0.07	0.00	0.00	<i>Helicolenus</i> spp.

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
SPF					0.00			-0.01	<i>Pseudolabrus miles</i>
SPI	0.01	-0.01	-0.14	-0.01	0.00	-0.02	0.00	-0.06	
SPK			-0.01		0.00	0.00		-0.01	<i>Macrorhamphosodes uradoi</i>
SPL							0.00	0.00	<i>Scopelosaurus</i> sp.
SPN					0.00	0.00		0.00	
SPO		0.01	-0.10	-0.03	-0.26	0.00		-0.06	<i>Mustelus lenticulatus</i>
SPP			0.00		0.01			0.00	<i>Callanthias</i> spp.
SPQ								0.00	<i>Spirula spirula</i>
SPR					0.00	0.00		0.00	<i>Sprattus antipodum</i> , <i>S. muelleri</i>
SPS								-0.01	<i>Peltorhamphus latus</i>
SPT			0.17		-0.01	0.00	0.00	0.02	<i>Spatangus multispinus</i>
SPZ	0.00		0.00		0.00	0.00		-0.07	<i>Genyagnus monoptyerygius</i>
SQA			0.00	0.03		0.03	0.05	0.06	<i>Squalus</i> spp.
SQI		-0.01			0.00		0.00	0.00	<i>Pristilepis oligolepis</i>
SQU	-0.02		0.00		-0.07	-0.10	-0.03	-0.01	<i>Nototodarus sloanii</i> & <i>N. gouldi</i>
SQX	0.02		-0.07		0.02	0.01	-0.03	0.13	
SRB	0.03							0.03	<i>Brama australis</i>
SRH			0.01		0.00	-0.01	0.00	0.11	<i>Hoplostethus mediterraneus</i>
SRI	0.00					0.01	0.00	0.06	<i>Scymnodon ringens</i>
SSC		-0.11	-0.05				0.00	0.02	<i>Leptomithrax australis</i>
SSH	0.00	0.00	-0.02	0.19	0.00	0.00	0.00	0.16	<i>Gollum attenuatus</i>
SSI	0.02	0.23	0.01		-0.03	0.01	-0.03	0.05	<i>Argentina elongata</i>
SSK	0.00	-0.04	0.00	-0.04	-0.19	-0.02	0.09	0.03	<i>Dipturus innominatus</i>
SSM						-0.06	0.03	-0.01	<i>Alepocephalus antipodianus</i>
SSO	0.00					-0.16	0.03	-0.03	<i>Pseudocyttus maculatus</i>
SSP			0.00					0.00	<i>Pecten novaezelandiae</i>
STA	0.00	0.07	-0.11	-0.07	-0.26	-0.03	0.00	-0.01	<i>Kathetostoma</i> spp.
STG		0.00	0.02		-0.01	0.00	0.00	-0.12	
STI							0.00	0.00	<i>Stichopathes</i> spp.
STN	0.00	-0.06	0.00		0.00			0.04	<i>Thunnus maccoyii</i>
STO						0.00	0.00	0.02	<i>Stomias</i> spp.
STP						0.00	0.00	0.00	<i>Stephanocyathus platypus</i>
STR		0.00	-0.04		0.00	0.00		-0.01	
STS								0.00	<i>Stephanocyathus spiniger</i>
STU	-0.03	-0.07			0.03			-0.12	<i>Allothunnus fallai</i>
SUA								0.00	<i>Suberites affinis</i>
SUH					0.00	0.00		-0.01	<i>Schedophilus huttoni</i>
SUM	0.00					0.00	0.00	0.00	<i>Schedophilus maculatus</i>
SUN	0.00	0.03	0.02		0.11	0.01		-0.03	<i>Mola mola</i>
SUR			-0.06			0.00	0.00	-0.02	<i>Evechinus chloroticus</i>
SUS						0.00	0.00	0.00	<i>Schedophilus</i> sp.
SVA						0.07	0.12	0.00	<i>Solenosmilia variabilis</i>
SWA	-0.02	0.07	-0.19		-0.02	-0.04	0.00	-0.05	<i>Seriolella punctata</i>
SWE								0.00	<i>Scorpius lineolatus</i>
SWO					0.05	-0.04		-0.01	<i>Xiphias gladius</i>
SWR						-0.01	0.00	0.00	<i>Coris sandageri</i>
SYD			0.00					0.02	<i>Systellaspis debilis</i>
SYM						0.00			<i>Symbolophorus</i> spp.
SYN			0.00		0.00	-0.03	0.00	0.02	<i>Synaphobranchidae</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
SYP			0.00					0.00	<i>Systellaspis pellucida</i>
TAL						0.00		0.00	<i>Talismania longifilis</i>
TAM			0.00			0.07	0.12	0.22	Echinothuriidae & Phormosomatidae
TAR	0.00	0.09	-0.08	-0.01	-0.15	0.00	0.00	-0.08	<i>Nemadactylus macropterus</i> & <i>N. sp.</i> (King tarakihi)
TAS	0.00					0.00		0.00	<i>Taractes asper</i>
TAY			0.12		0.00	0.00		0.06	<i>Typhlonarke aysoni</i>
TDQ						0.00		0.03	<i>Taningia danae</i>
TET			0.00			0.00		0.00	<i>Tetragonurus cuvieri</i>
TEW			0.00					0.00	<i>Tewara cranwellae</i>
TFA			0.19			0.00		0.00	<i>Trichopeltarion fantasticum</i>
THO			0.00			0.00	0.00	0.00	<i>Thouarella</i> spp.
THR		0.02		-0.10	-0.03			-0.16	<i>Alopias vulpinus</i>
TJA								0.00	<i>Trachipterus jacksonensis</i>
TLA					0.00				<i>Telestula</i> spp.
TLD			0.00			0.00	0.00	0.00	<i>Tetilla leptoderma</i>
TLO			0.00			0.00	0.00	0.00	<i>Telesto</i> spp.
TOA	0.00	0.18	-0.04	0.09	-0.01	0.10	0.01	0.10	<i>Neophrynichthys</i> sp.
TOD	0.00	0.00	0.00	-0.01	0.00	0.00		0.06	<i>Neophrynichthys latus</i>
TOP	-0.04		-0.07	0.05	0.00	0.01	0.00	0.06	<i>Ambopthalmos angustus</i>
TOR		0.00			0.00			0.17	<i>Thunnus orientalis</i>
TRA					-0.01	0.00		-0.01	Trachichthyidae (Family)
TRE					0.04			0.00	<i>Pseudocaranx georgianus</i>
TRI						0.00			<i>Bathypterois</i> spp.
TRP								0.00	Tripterygiidae
TRS						-0.02		0.00	<i>Trachyscorpia eschmeyeri</i>
TRU		0.00	0.00	-0.05	0.00			-0.02	<i>Latris lineata</i>
TRX						0.00	0.00		<i>Trachonurus gagates</i>
TSQ	0.00		0.00			0.04	0.00	0.07	<i>Todarodes filippovae</i>
TTA			0.04					0.00	<i>Typhlonarke tarakea</i>
TTL						0.00			<i>Tetilla australe</i>
TUB	0.00		0.00		0.00	0.00	0.00	0.00	<i>Tubbia tasmanica</i>
TUR		0.00			0.00			0.00	<i>Colistium nudipinnis</i>
TVI						0.00		0.04	<i>Trachonurus villosus</i>
UNI				0.20					
URO				0.00					
URP		0.00	0.00			0.00	0.00	0.00	<i>Uroptychus</i> spp.
VCO						0.07	0.11	-0.04	<i>Antimora rostrata</i>
VIT						0.00	-0.01	0.00	<i>Vitjazmaia latidactyla</i>
VKI								0.00	<i>Veprichlamys kiwaensis</i>
VNI			0.00					0.00	<i>Lucigadus nigromaculatus</i>
VOL			-0.01	0.00		0.00	0.00	0.02	Volutidae (Family)
VSQ	0.00		0.00		0.00	0.05	0.00	0.19	<i>Histioteuthis</i> spp.
WAR	0.00		0.00		-0.09	0.00	0.00	-0.16	<i>Seriolella brama</i>
WGR		-0.01				0.00			<i>Macrourus whitsoni</i>
WHE	0.00		-0.03	0.01		0.00	0.00	0.04	
WHR			0.00			-0.03	0.00	-0.06	<i>Trachyrincus longirostris</i>
WHX			0.00			0.06	0.00	0.17	<i>Trachyrincus aphyodes</i>
WIN					0.00			0.00	<i>Pteraclis velifera</i>
WIT	0.00	0.20	0.03	0.01	0.00	0.06	0.00	0.17	<i>Arnoglossus scapha</i>

Species	Fishery								Scientific name
	SBW	SQU	SCI	LLL	JMA	ORH	OEO	HHL	
WMA				0.04				0.02	<i>Tetrapturus albidus</i>
WOE					0.00	-0.03	-0.02	0.00	<i>Allocyttus verrucosus</i>
WPS		0.02			0.01	0.01		0.02	<i>Carcharodon carcharias</i>
WRA	0.00		0.00		0.00		0.00	0.05	<i>Dasyatis thetidis</i>
WSE					-0.01	0.00		0.00	Labridae (Family)
WSH								0.00	<i>Rhincodon typus</i>
WSQ	-0.01	0.03	0.06		0.00	0.08	0.19	-0.05	<i>Onykia</i> spp.
WWA	0.00	0.14	-0.09		0.00	0.00	0.05	0.07	<i>Seriolella caerulea</i>
YBF			0.00		0.00			0.02	<i>Rhombosolea leporina</i>
YBO	0.00		0.09		0.00	0.00		0.11	<i>Pentaceros decacanthus</i>
YBP									<i>Acanthistius cinctus</i>
YCO	0.00	0.05	0.00		0.00	0.00		0.00	<i>Parapercis gilliesi</i>
YEM		0.00			0.00				<i>Aldrichetta forsteri</i>
YFN		0.00			0.00			0.02	<i>Thunnus albacares</i>
YSG			-0.01		0.00			0.00	<i>Pterygotrigla pauli</i>
YSP			0.00			0.00			<i>Yaldwynopsis spinimana</i>
ZAS						0.04	0.00	0.00	<i>Zameus squamulosus</i>
ZDO			0.00					0.00	<i>Zenion leptolepis</i>
ZEL			0.00			0.00		0.00	<i>Zu elongatus</i>
ZOR			0.12	0.03	0.00	0.00	0.00	0.10	<i>Zoroaster</i> spp.