

# **INTERNAL REPORT**

## **TASMANIAN ABALONE FISHERY CATCH AND EFFORT DATA SUMMARY: 2007**

*Abalone Research Group,  
Tasmanian Aquaculture and Fisheries Institute*

*February 2008*



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The opinions expressed in this report are those of the author/s and are not necessarily those of the Tasmanian Aquaculture and Fisheries Institute.

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## 1. Interpreting trends in catch and catch rate.

There are two fundamental problems associated with the use and interpretation of long-term catch and effort data from the Tasmanian abalone fishery. The first stems from errors and omissions of reported catch and effort in earlier versions of the catch reporting system, and the second from improved efficiency by divers in the way they catch and handle abalone. When trends in catch and catch rates are used to infer changes in abundance, the two problems above can create uncertainty of the relative status of current abalone stocks, by skewing the magnitude of trends.

### *Catch reporting*

Since the early 1960's, several different catch reporting systems have been used by the Tasmanian government and none of these have been specifically designed to produce accurate catch and effort information. Until 1985, abalone catches and effort were reported at the end of each month by the vessel skipper (who may not have been a diver). The monthly catch totals were often rough estimates and not consistently prepared from daily records. Consequently, up to 1985, catch and effort data cannot be considered as an accurate record of fishing activity, and are indicative only, of fishing activity.

Following the introduction of a quota system, a new reporting system was introduced in 1985, with catch docketts completed by the diver for each landing. This greatly improved the reliability of catch reporting, but effort remained imprecisely reported, and there was often confusion about the reported location of catches. In 1992, a quota-compliance database was introduced. However, there were no provisions for summarising catch and effort by block, and only estimated (not actual) catches and effort could be reported. The nature of the database meant that many of the fishing details were duplicated, and administrative policies meant that approximately 10% of the catches from 1992-93 were not properly recorded.

The current database was introduced in 1998. Like its predecessor, it is a compliance database with minimal provision for obtaining catch and effort information by block. However, the integrity of data collected is high, with DPIW staff following up errors and omissions on catch docketts. Many divers have started reporting effort according to time logged on their dive computers, and the finer detail of block boundary maps introduced in 2000 has meant that catch and effort are now reported more accurately than at any previous stage of the fishery.

### *Changes in fishing efficiency*

A feature common to many commercial fisheries is that fishers usually try to make their operations more efficient (*i.e.* catch more fish per unit of effort), and the abalone fishery is no exception. Early in the history of the Tasmanian abalone fishery, divers anchored their boats, and often worked without a deckhand. Later, during the 1970's, the boats carried a deckhand who drove the boat and followed the diver, thus eliminating time spent swimming the catch from the reef to the anchored boat. A large increase in efficiency occurred during the late 1980's when divers adopted the practise of attaching their nets to ropes periodically lowered to them by their deckhands, and they no longer had to surface to the boat every time the net was full. Diving efficiency

again increased substantially during the 1990's, when increased capitalisation of the fishery and the transition of divers from quota-owners to contractors working on small margins drove the need for greater levels of efficiency to make fishing profitable. More recent improvements in efficiency stem from the increased use of GPS navigation systems, improved weather forecasting and the use of Nitrox gas mixing plants. This increase in efficiency is often termed effort creep and it implies that one unit of effort now is more effective than one unit of effort in the past.

In 1983, it was estimated that the catching efficiency of divers doubled between the start of the fishery in the 1960's and 1982. Assuming catch rates are directly related to available stock size, this means that for the same catch rate, there would have been more abalone available in the 1960's than there would have been in the 1980's. A more recent study into the effects of improvements in efficiency on abalone catch rates was made using catch-effort data collected between 1975 and 2000. Extrapolation of the 1983 estimate of effort creep (approximately 5% p.a.) caused an overall reduction in relative catch rates over the study period *i.e.* by removing the confounding effect caused by improvements in diver efficiency, effective catch rates were higher in 1975 than they were in 2000.

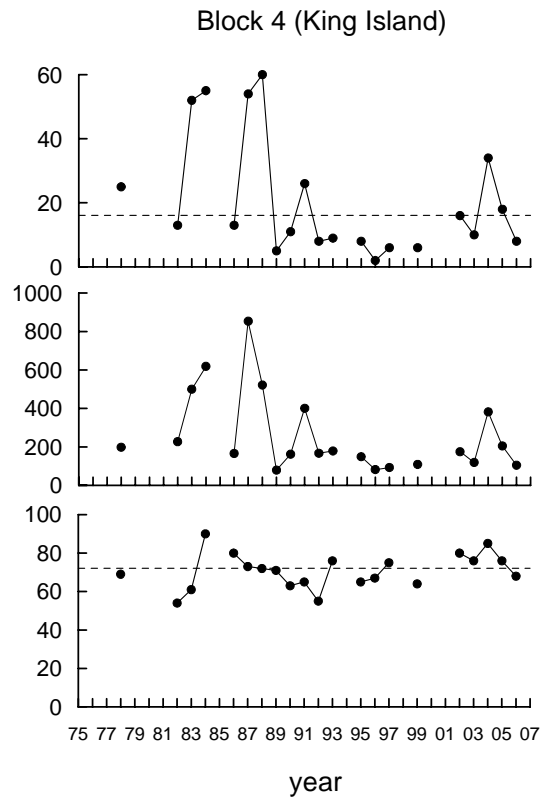
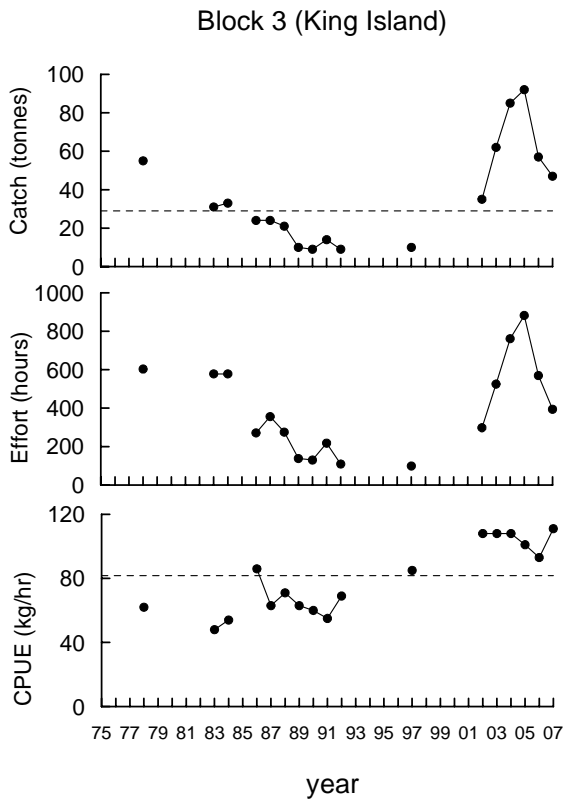
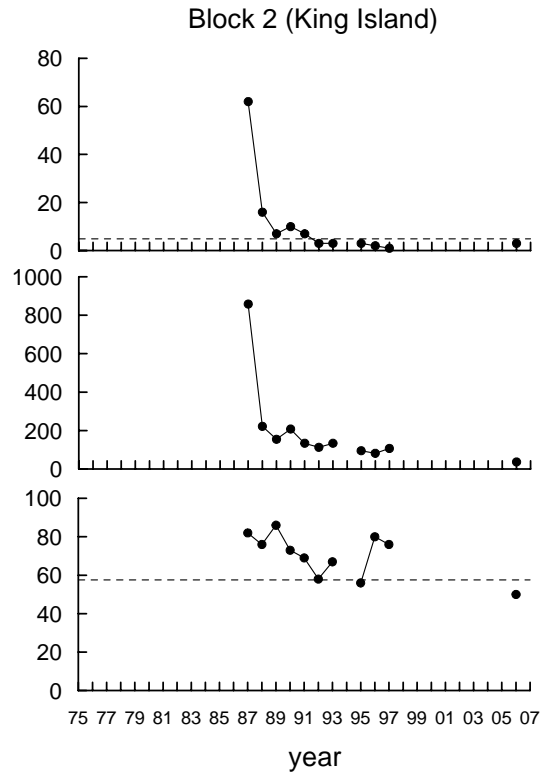
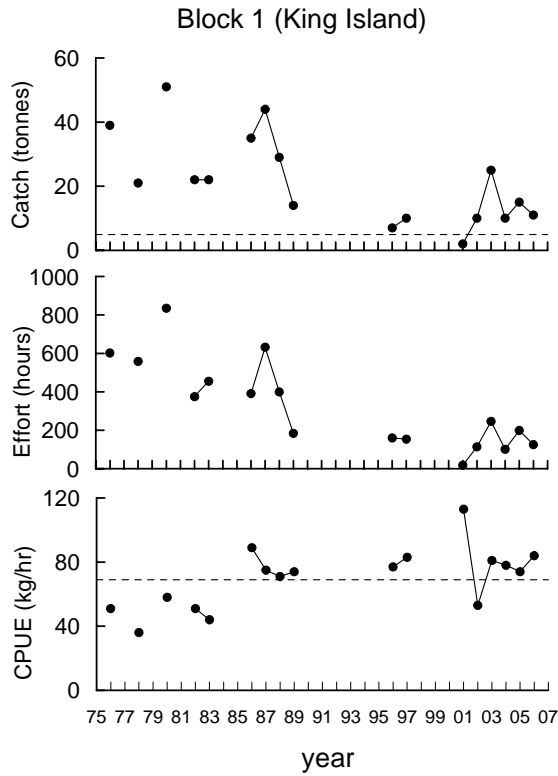
The increase in fishing efficiency means that if stock levels are unchanged, more abalone can now be collected per unit of time than in the past because of improved efficiency *i.e.* catchability increases. An increase in reported catch rates through time cannot therefore be used to infer an associated increase in abalone abundance. Alternatively, effort creep can lead to catch rates appearing to remain stable while in fact stock abundance is declining.

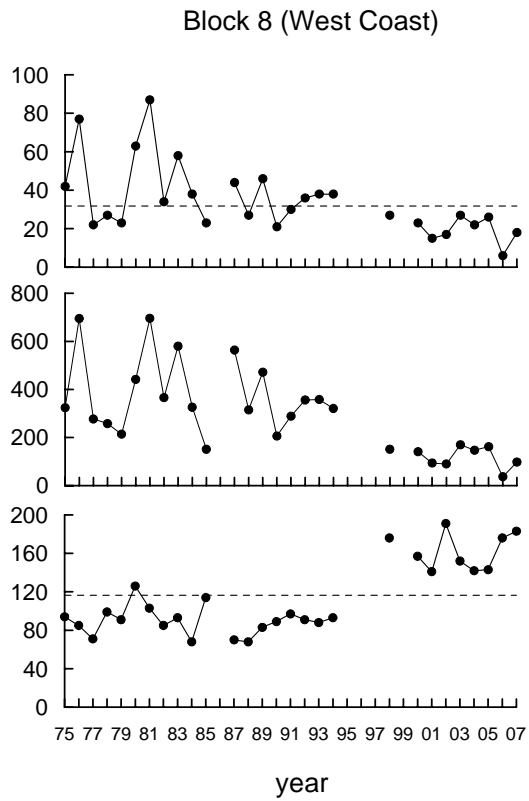
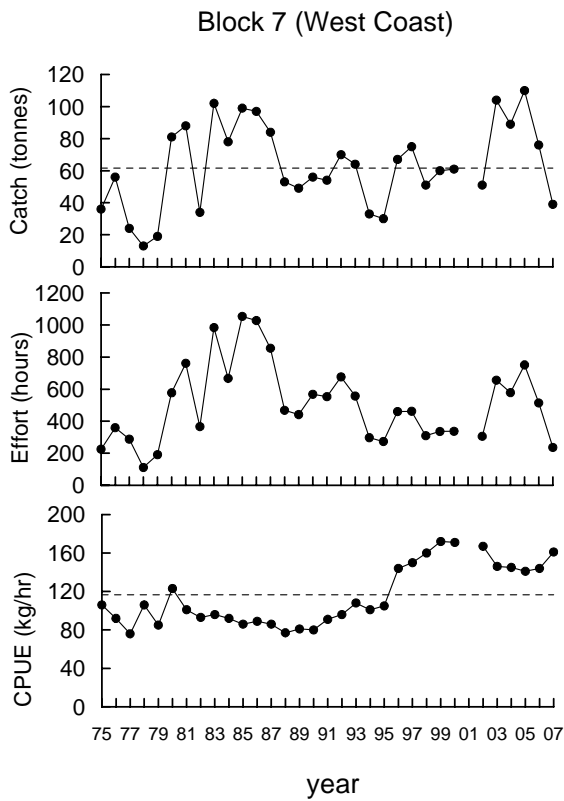
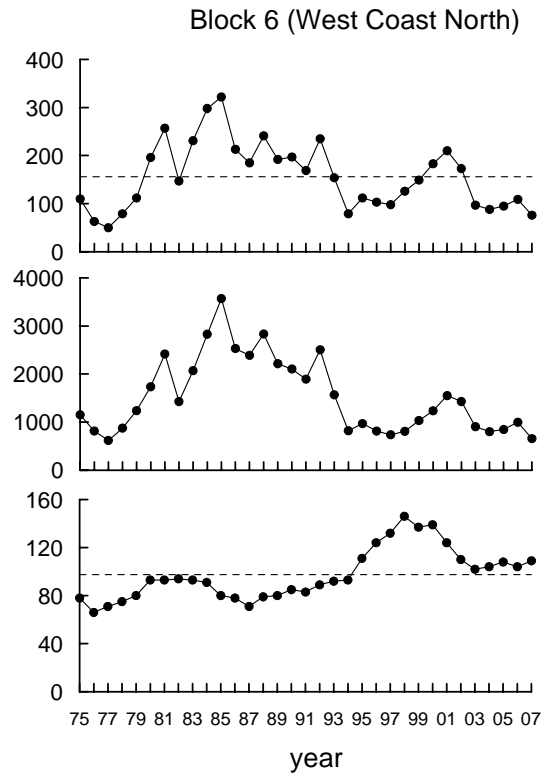
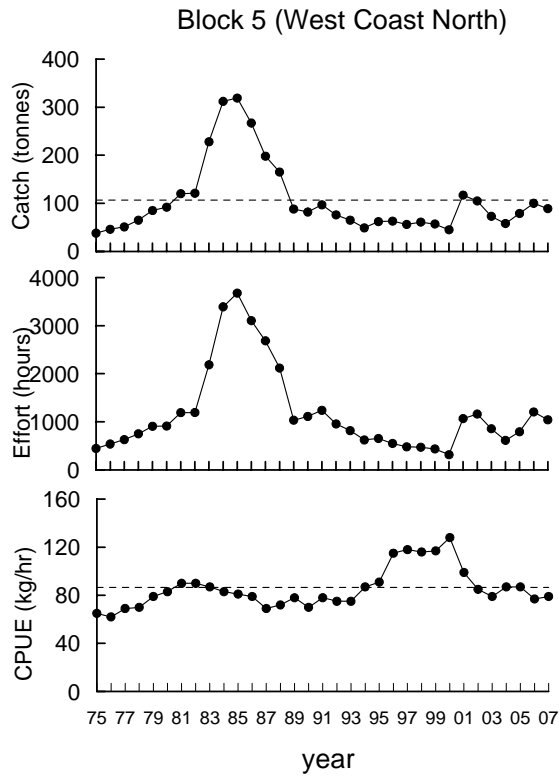
#### *Reporting of catch and effort in this document*

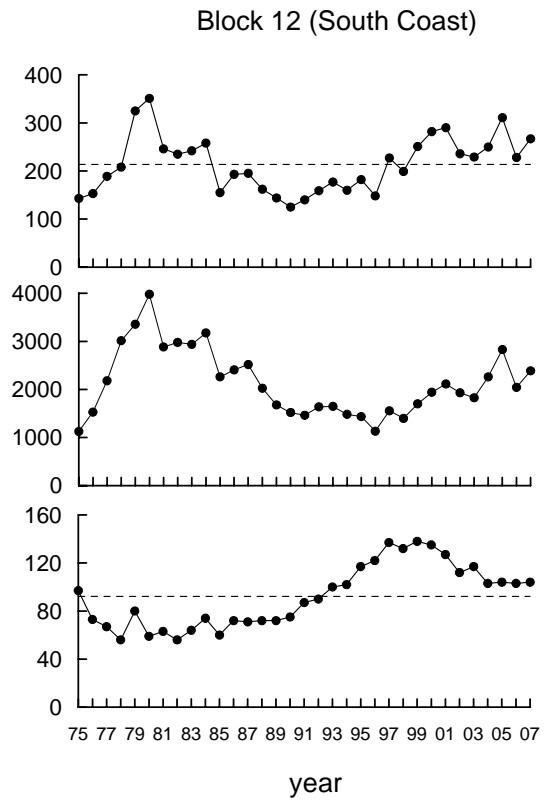
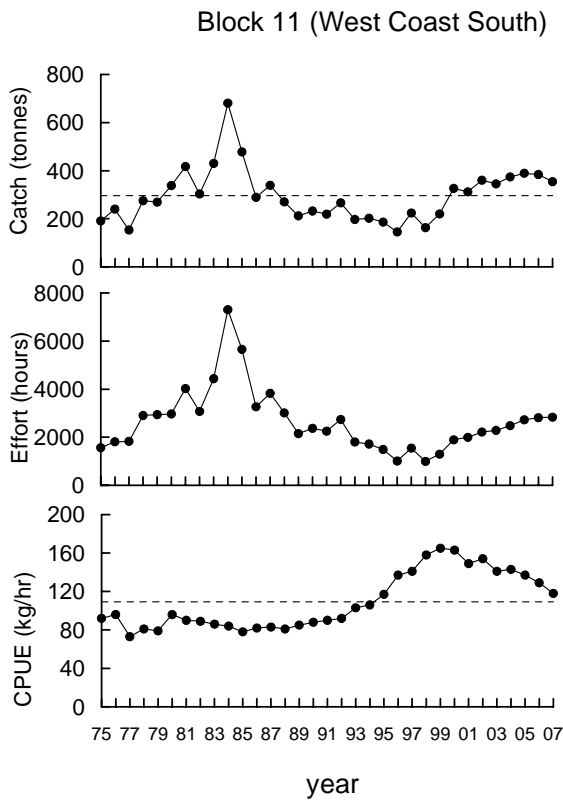
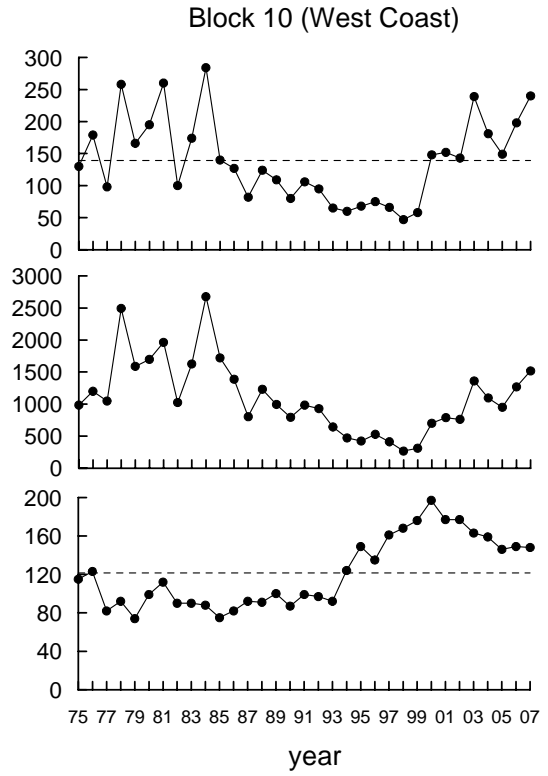
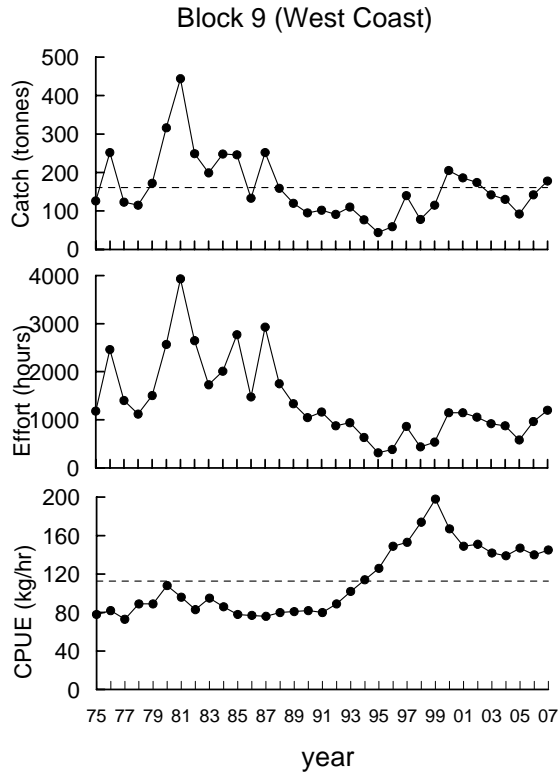
- Annual catch rates by block are presented as geometric mean catch rates, not arithmetic means (averages). Because catch rates tend to be distributed log-normally, the geometric mean is a more appropriate measure of central tendency than the arithmetic mean. It is less affected by the low number of high catch rates which commonly skew catch rate distributions in this fishery, and which can often make the arithmetic mean up to 10% greater than the geometric mean.
- In accordance with DPIW's requirements that divers' catch and catch rates remain confidential, catch and catch rates are not shown where **five or less divers** have landed catch of either blacklip or greenlip from a block or sub-block.
- Catch and catch rate charts show average catch and catch rates (indicated by a horizontal dashed line in the figures of blacklip and greenlip catch, effort and catch rate). Catch and catch rate tables list average catch and catch rates at the bottom of each table.

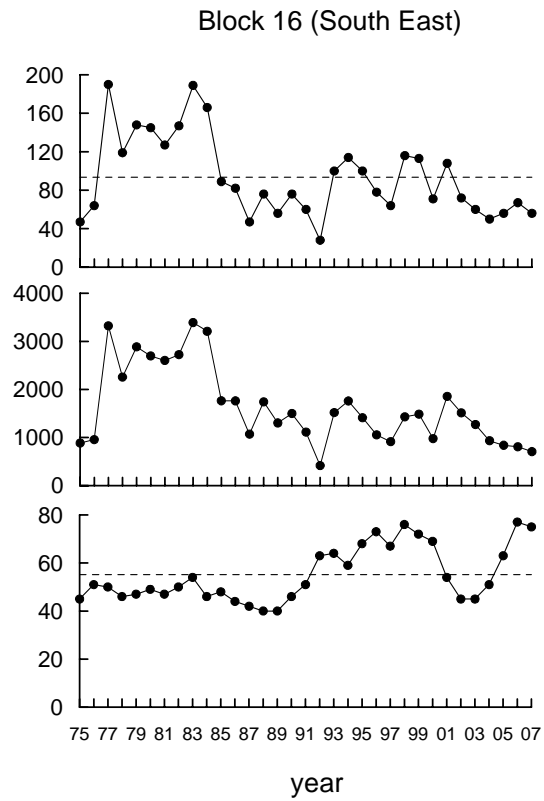
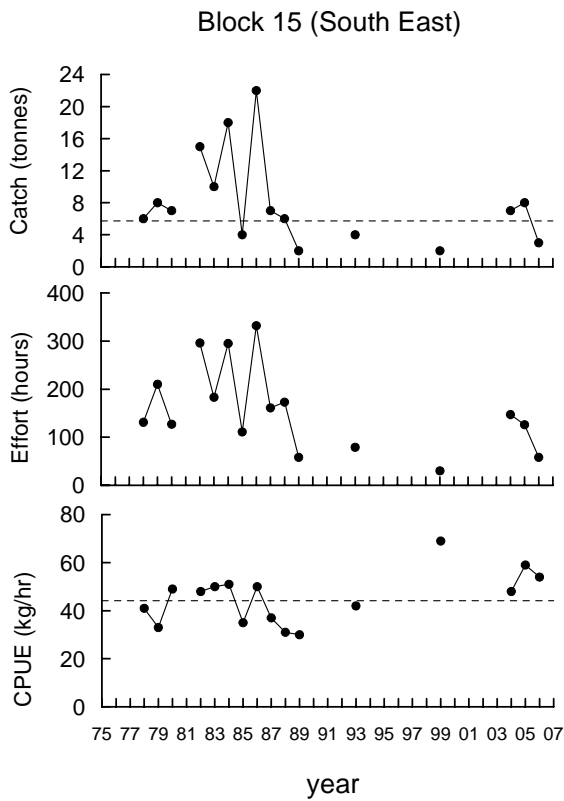
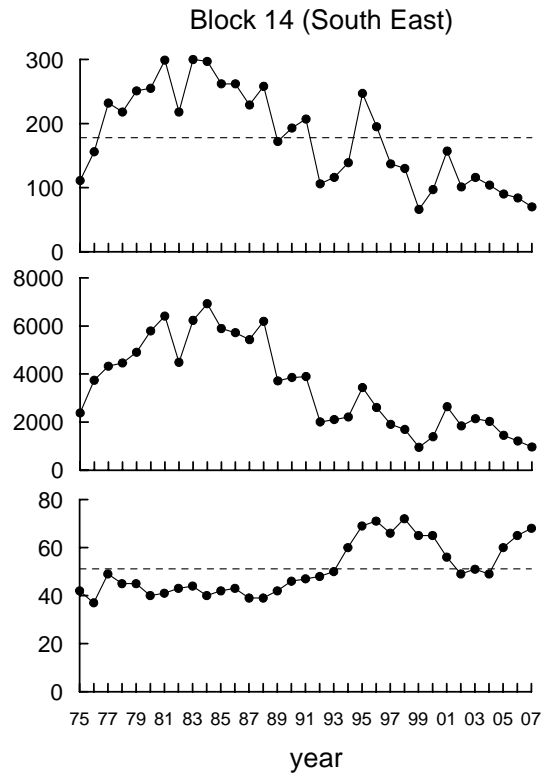
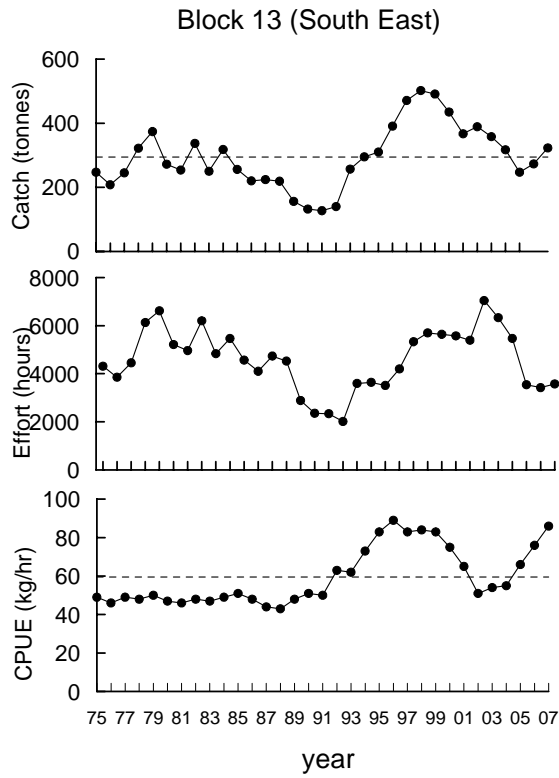
## 2. Catch, Effort and Catch Rate Charts 1975-2007

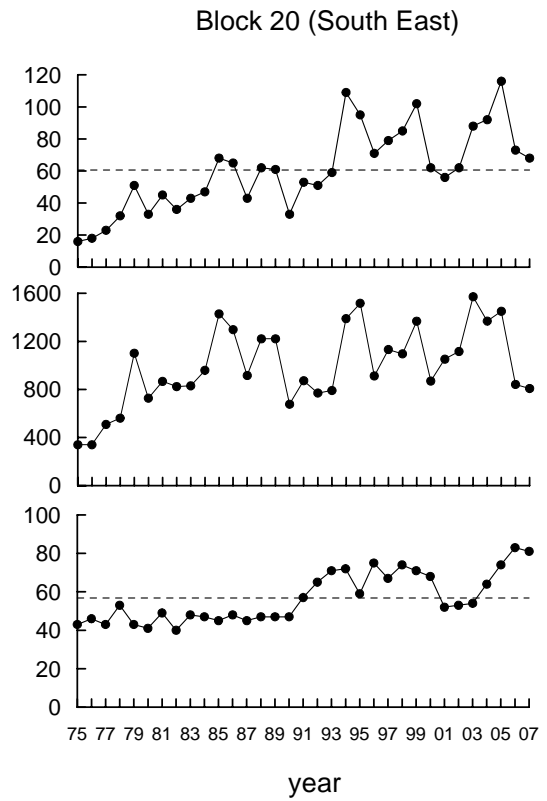
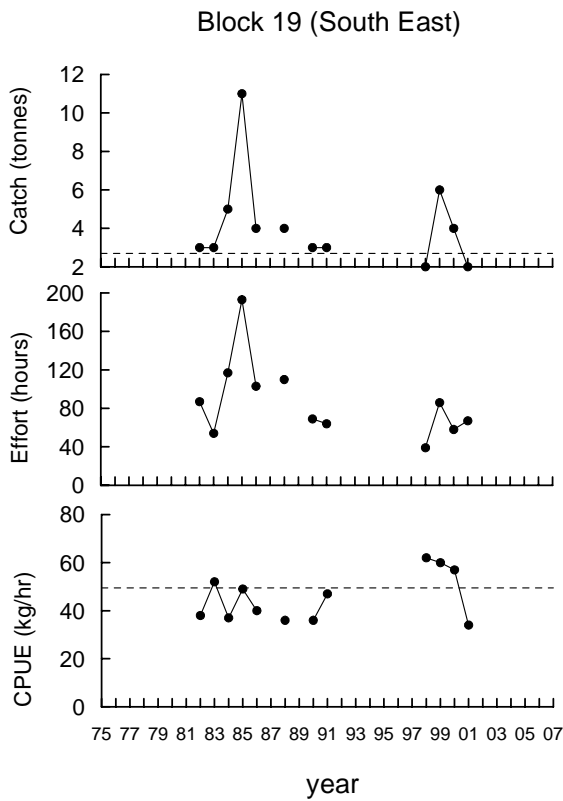
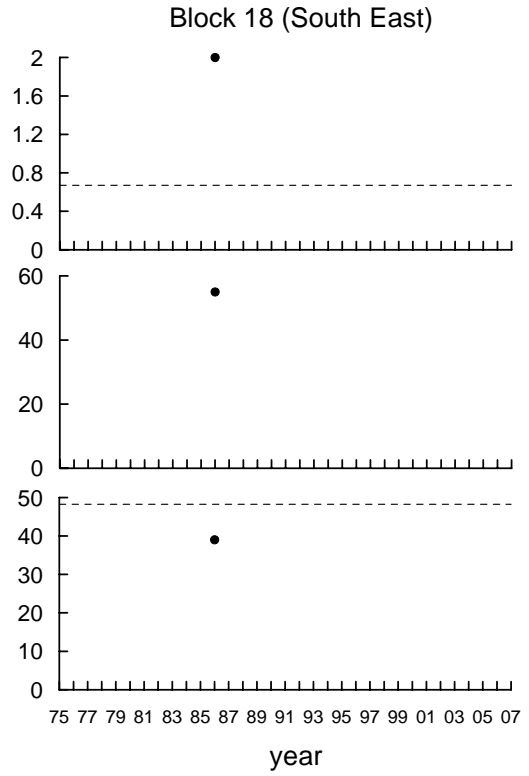
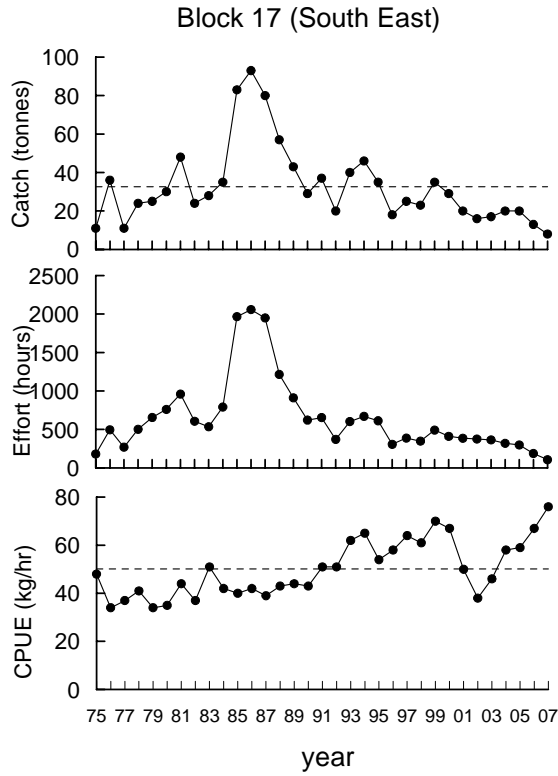
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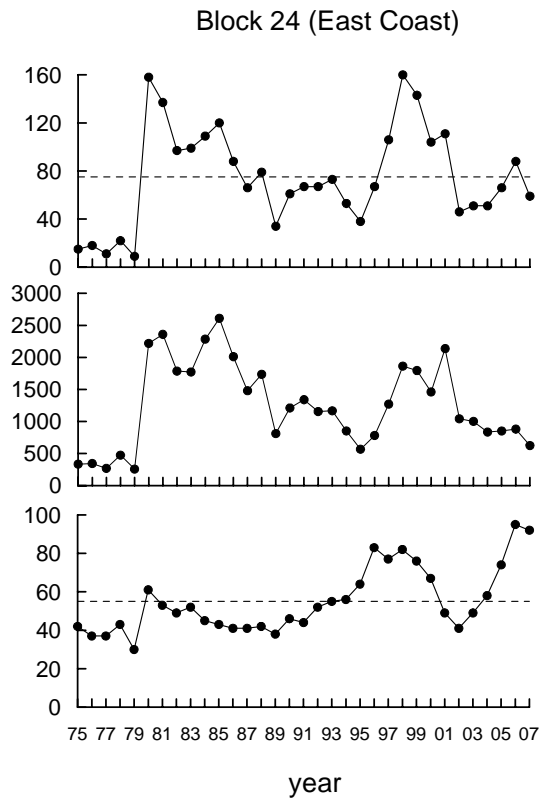
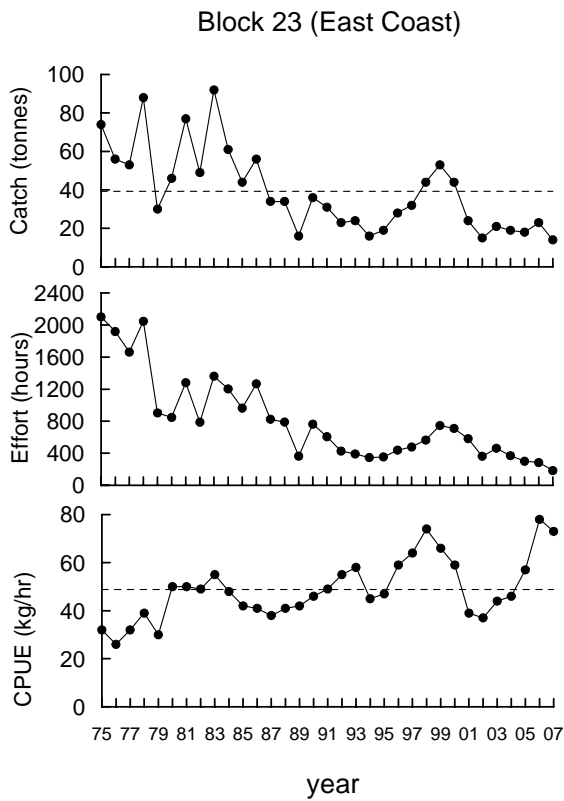
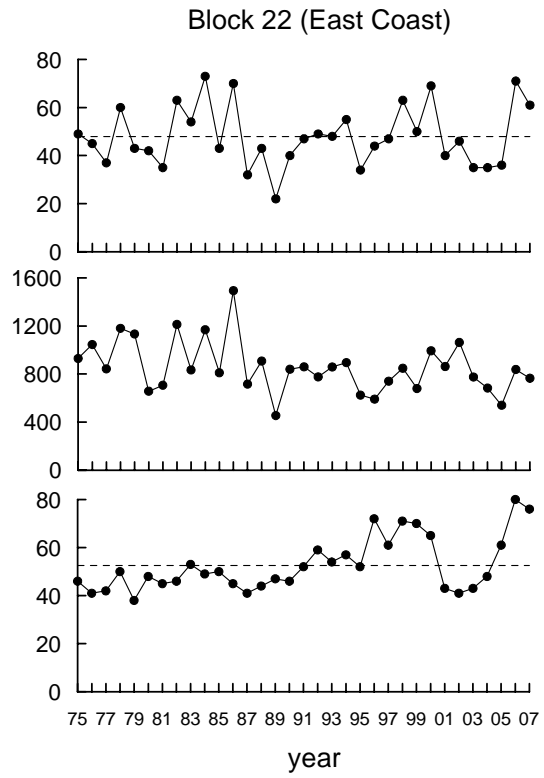
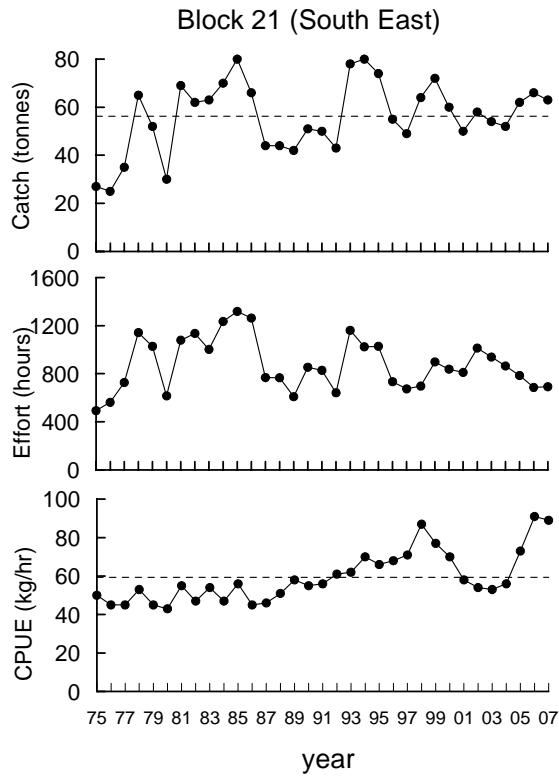


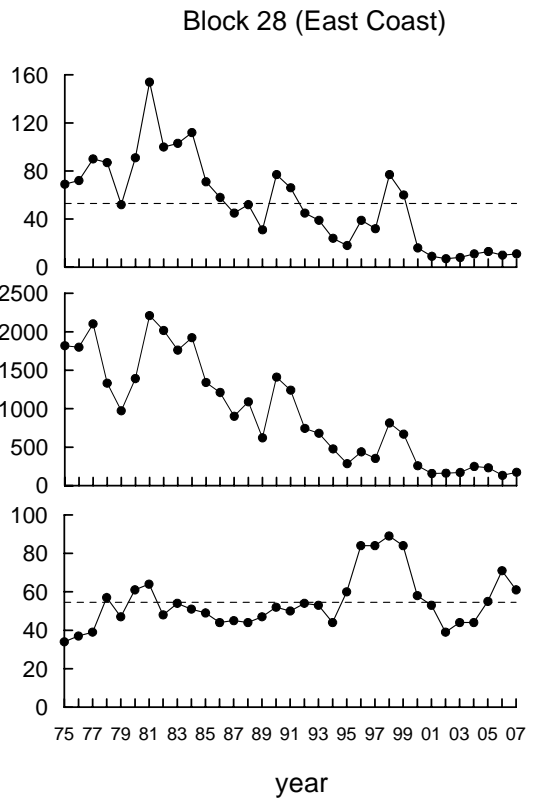
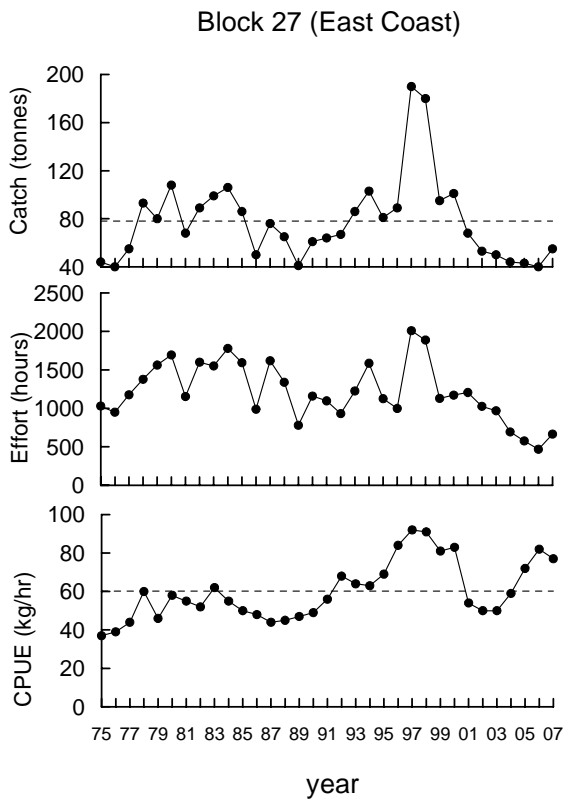
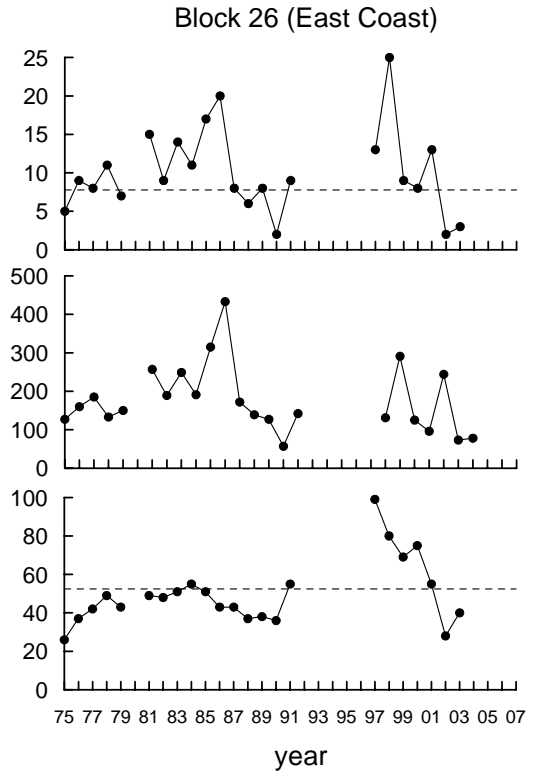
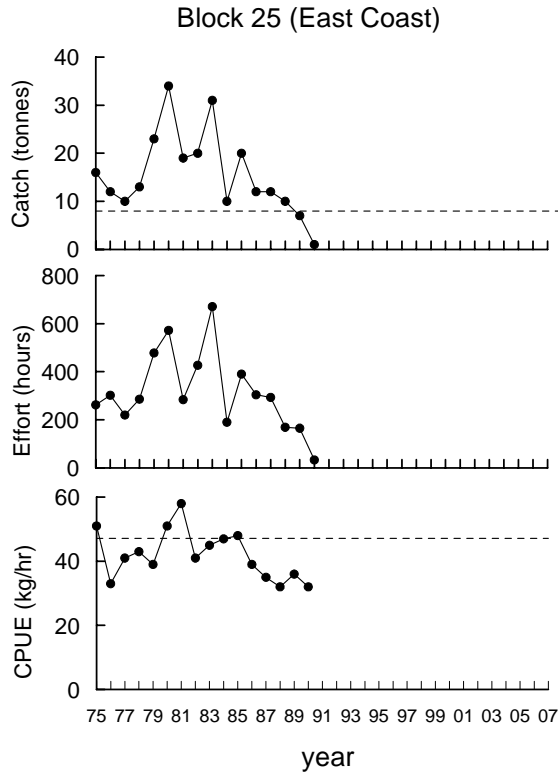


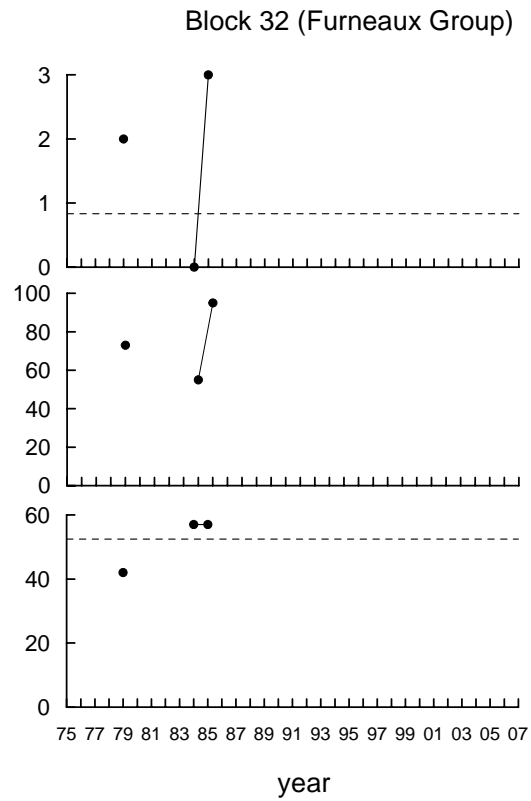
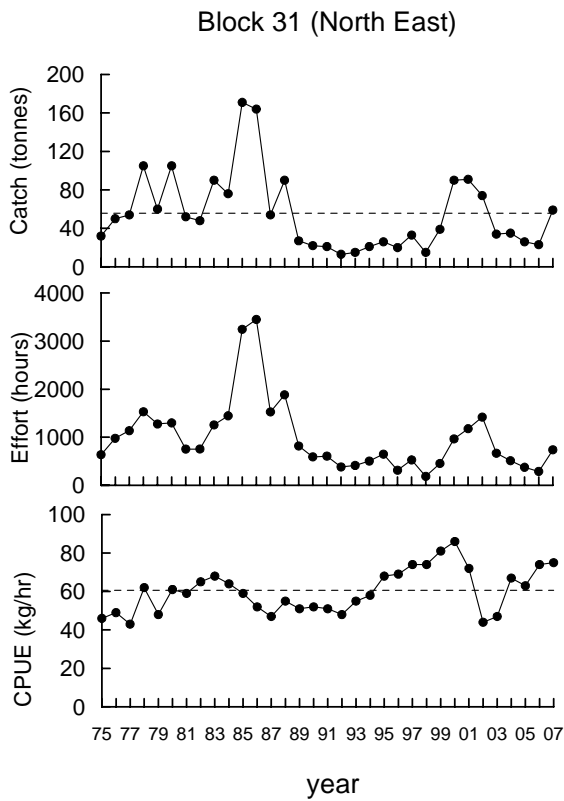
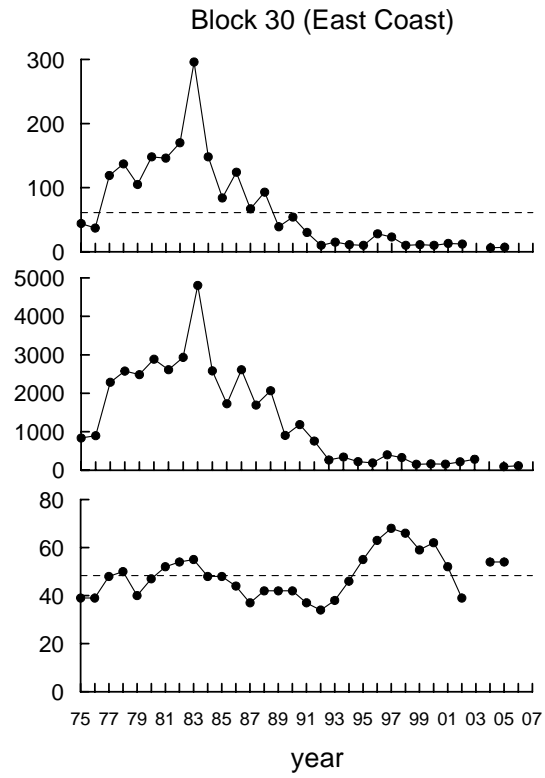
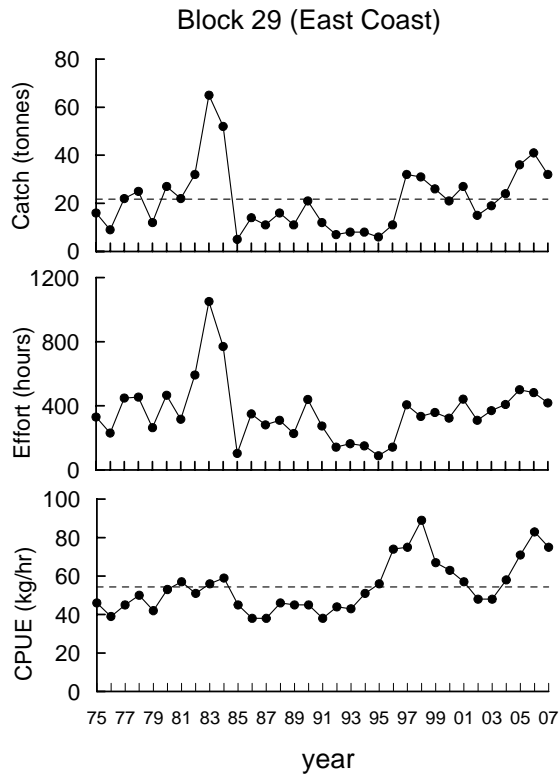


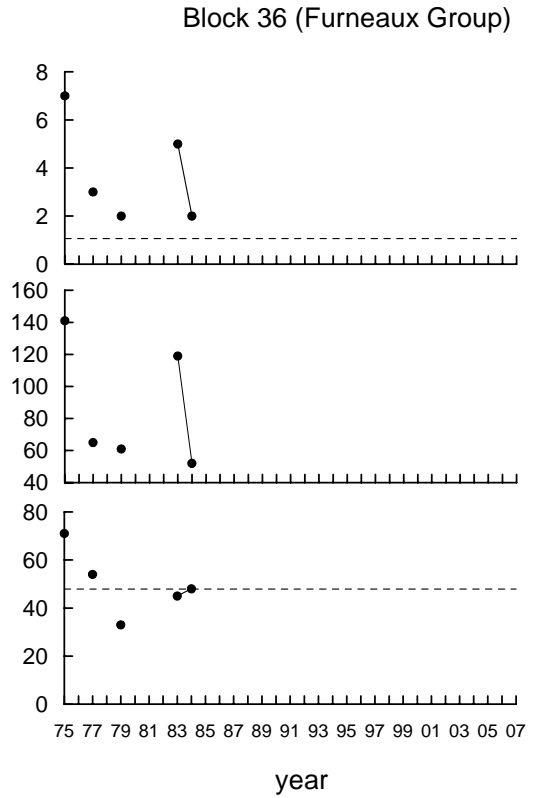
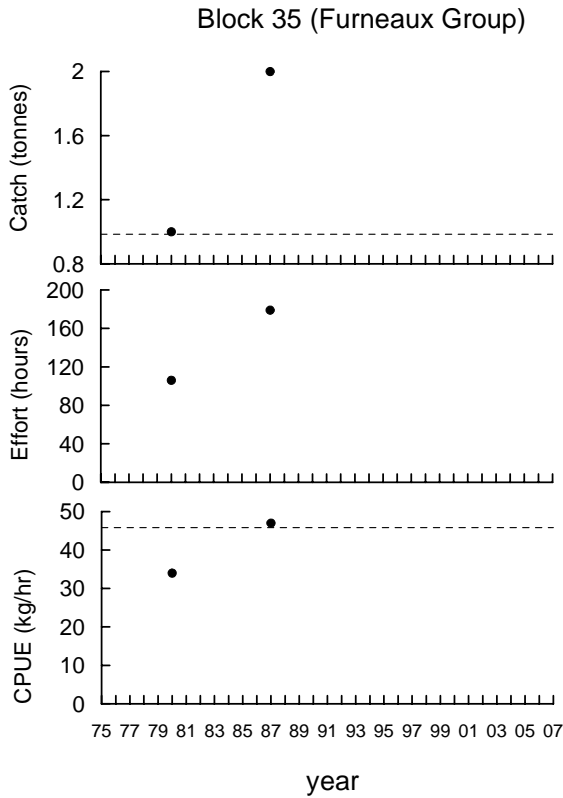
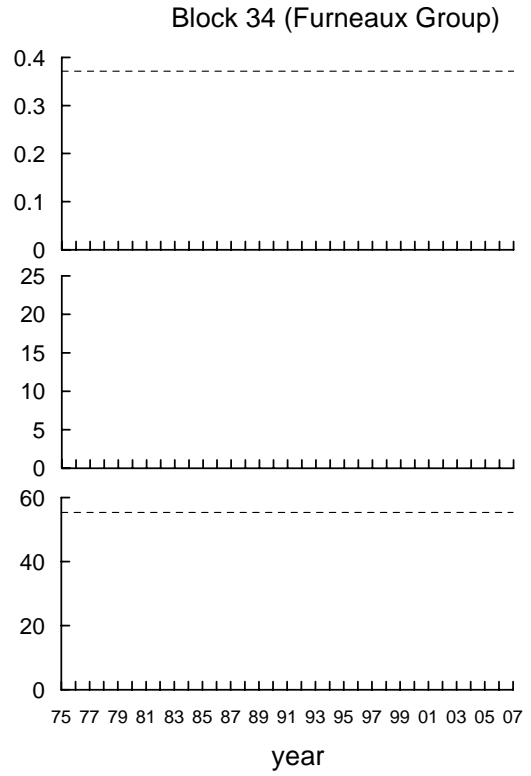
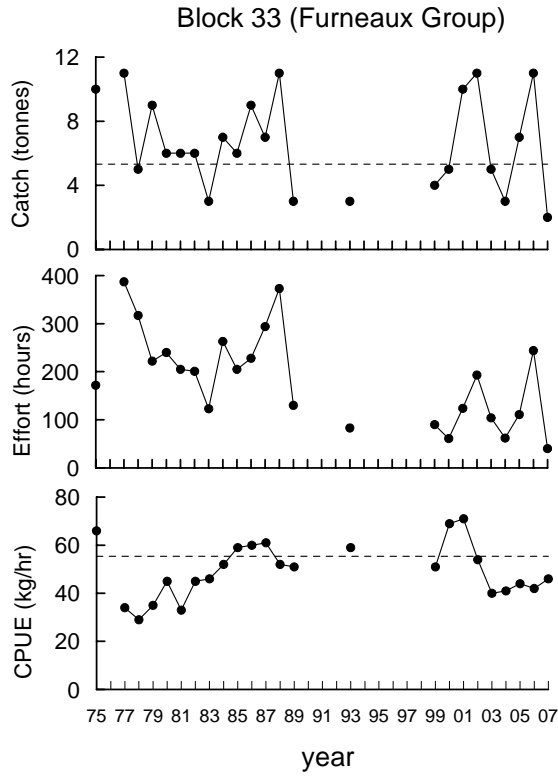


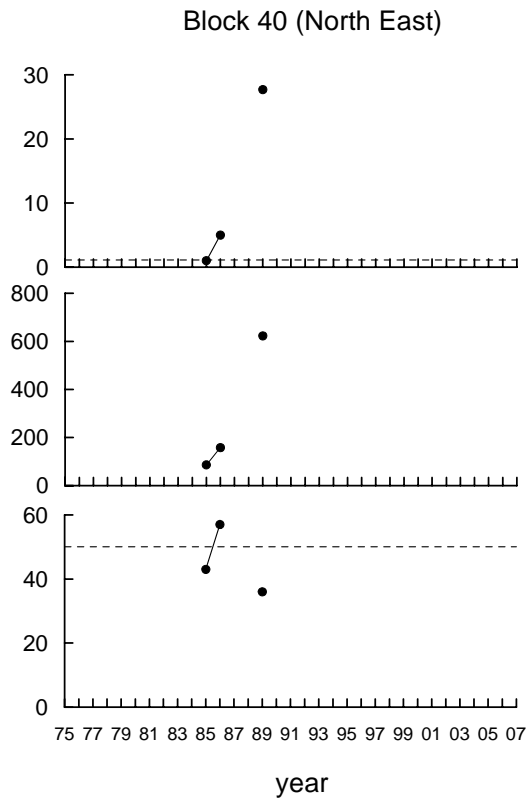
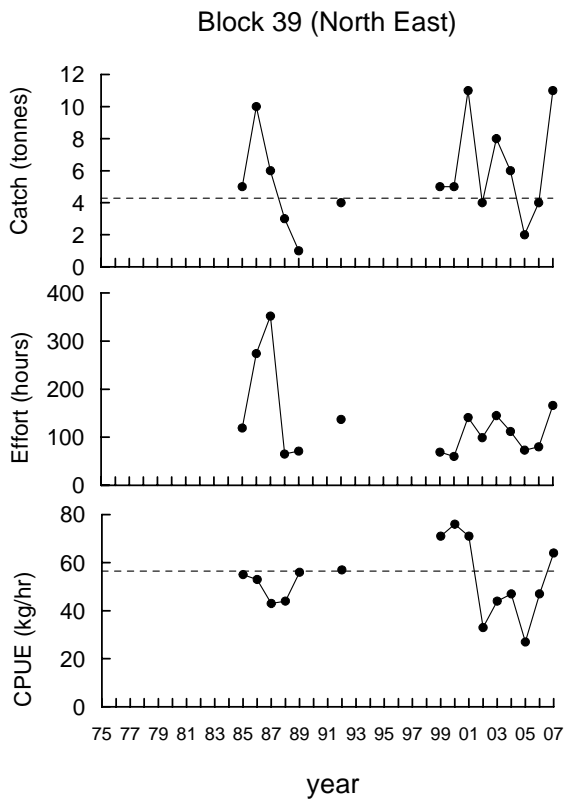
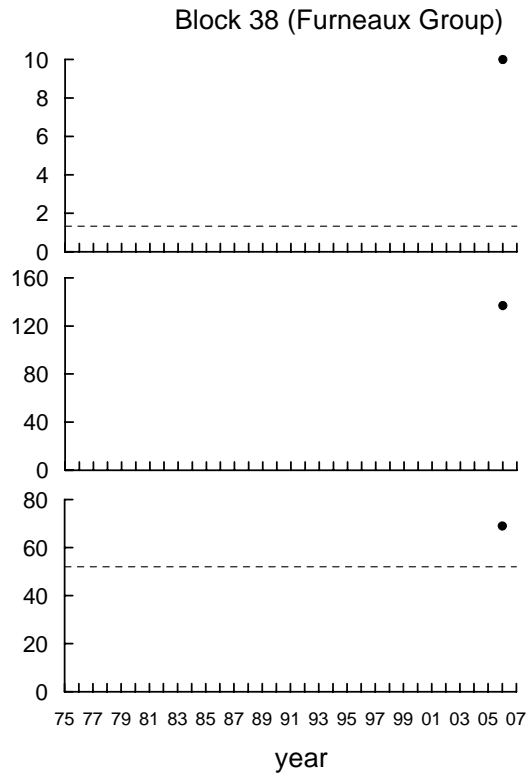
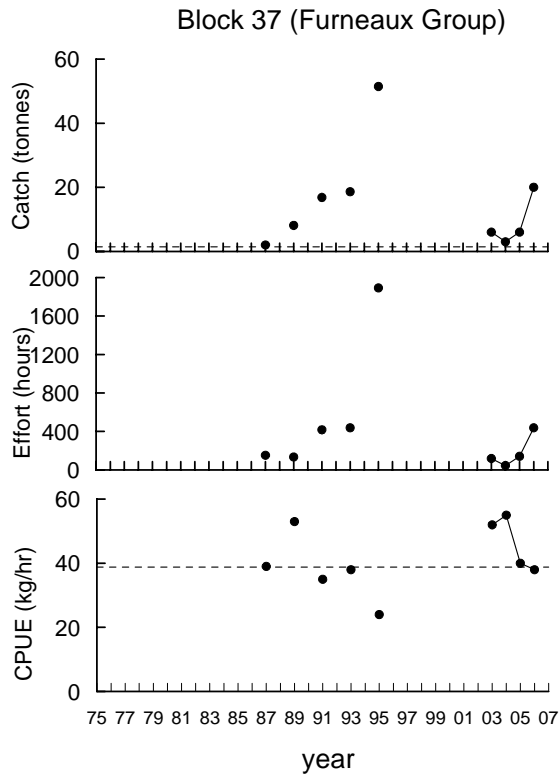


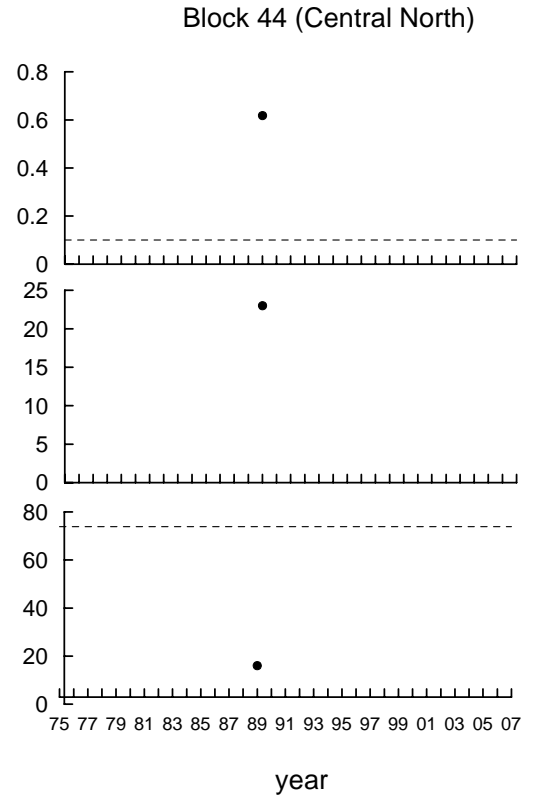
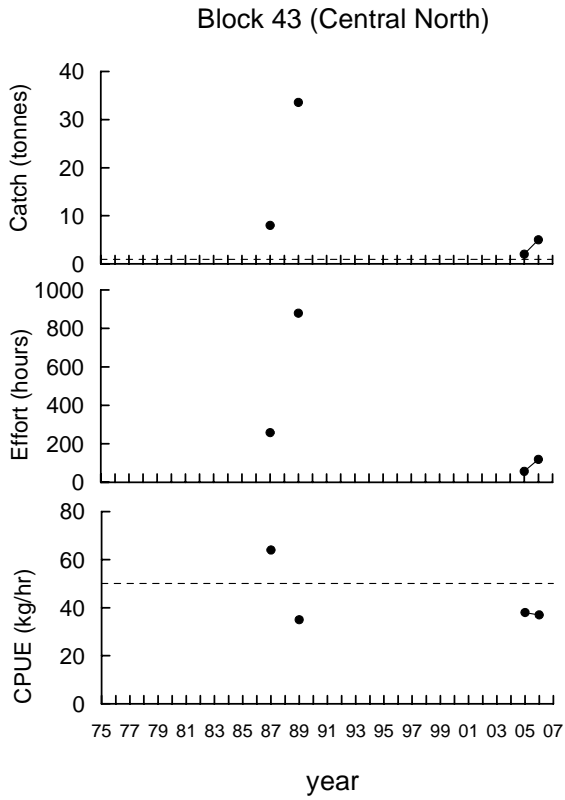
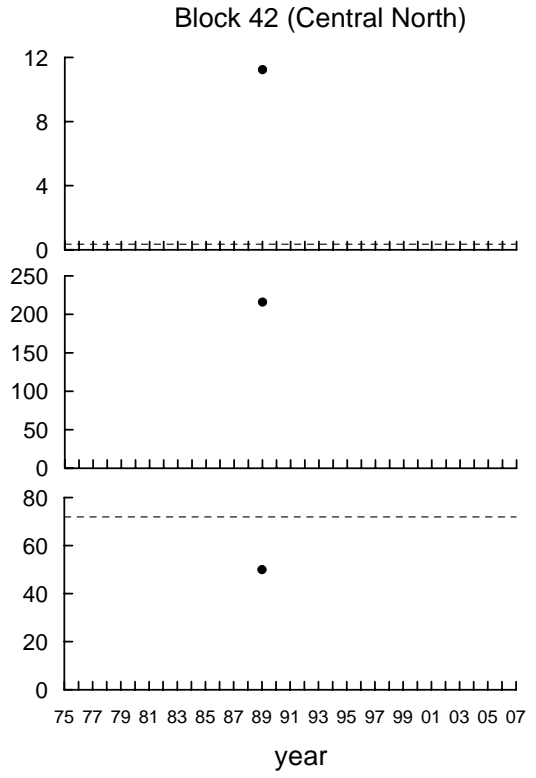
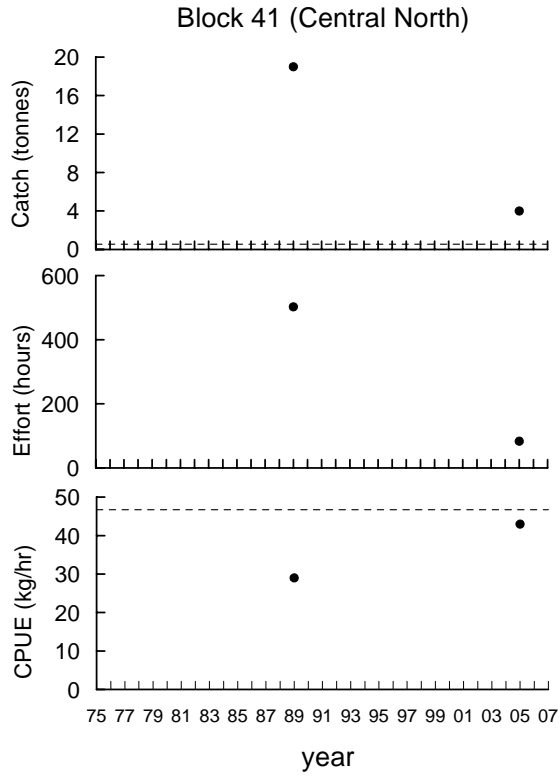


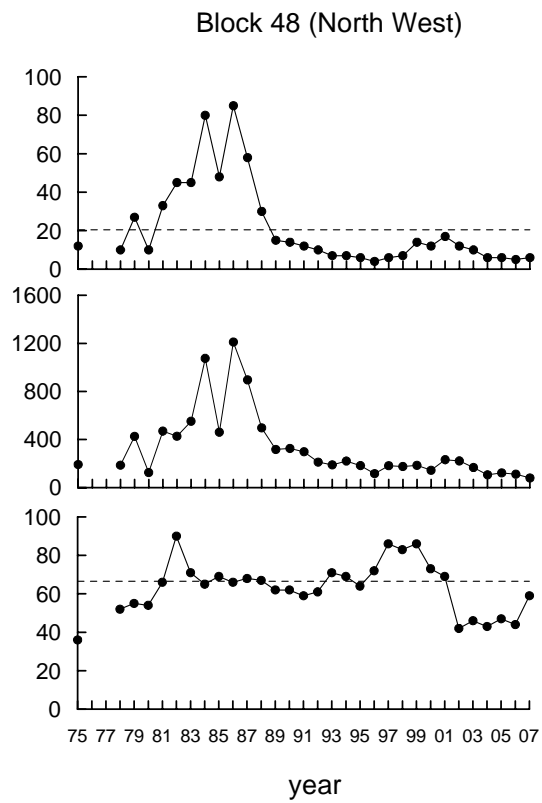
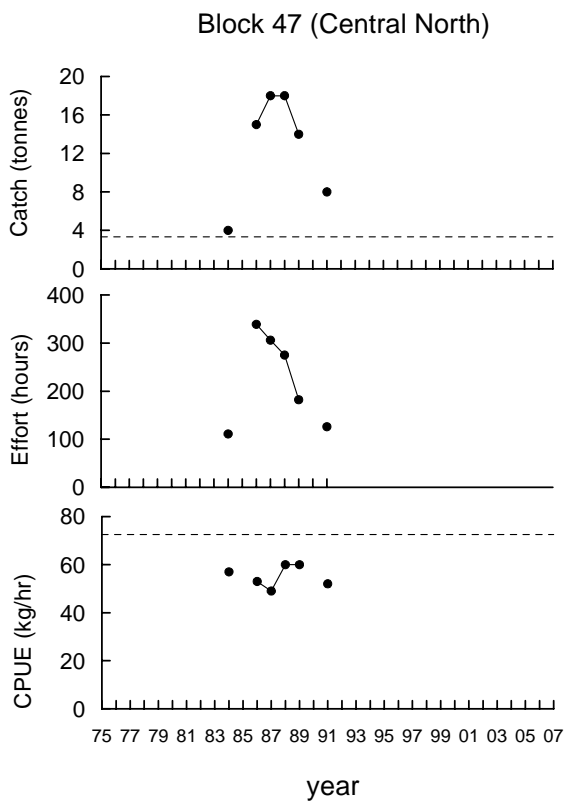
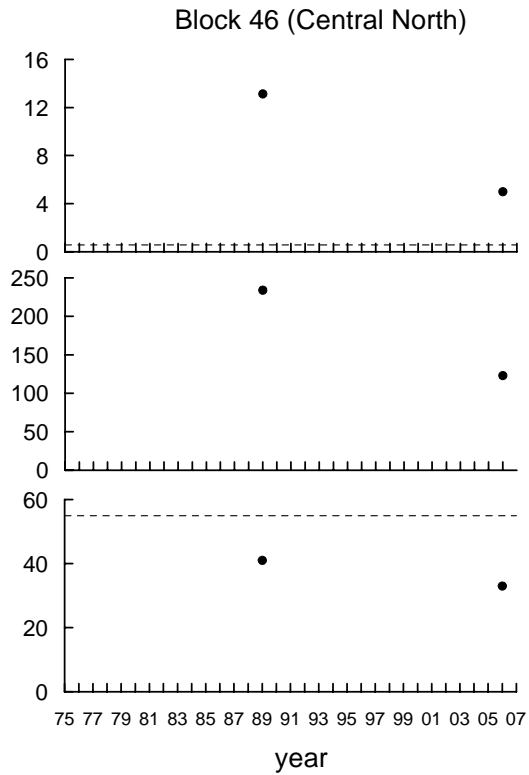
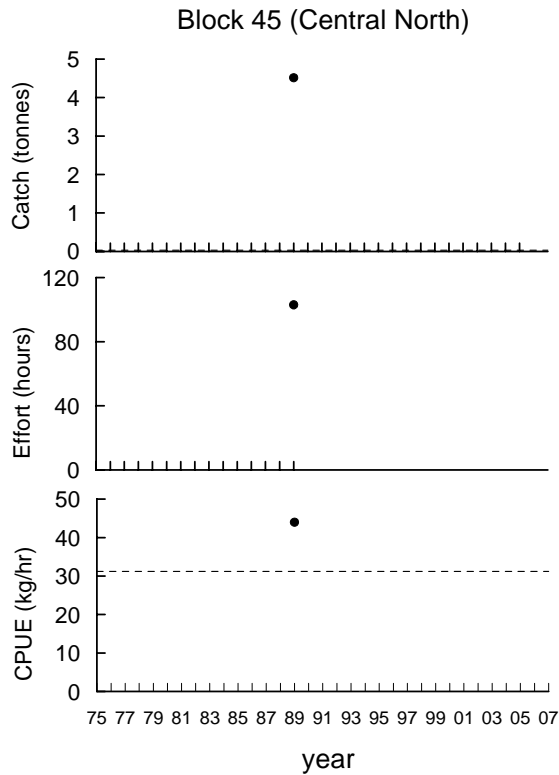


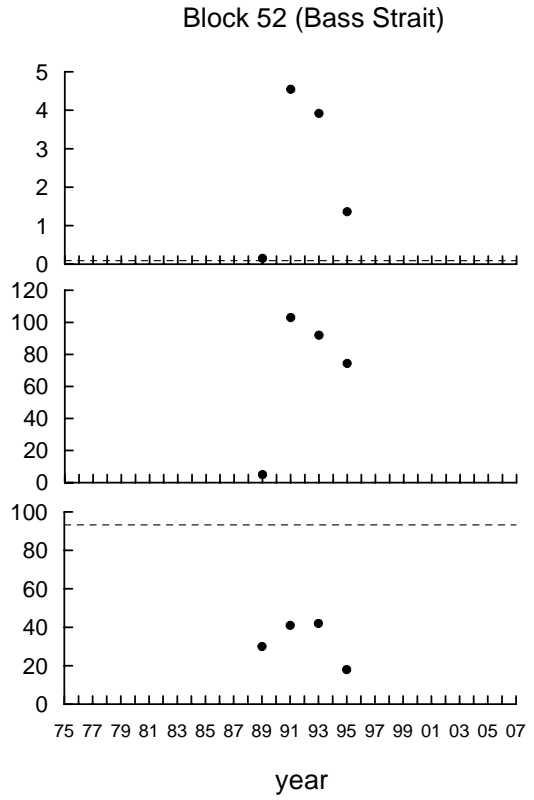
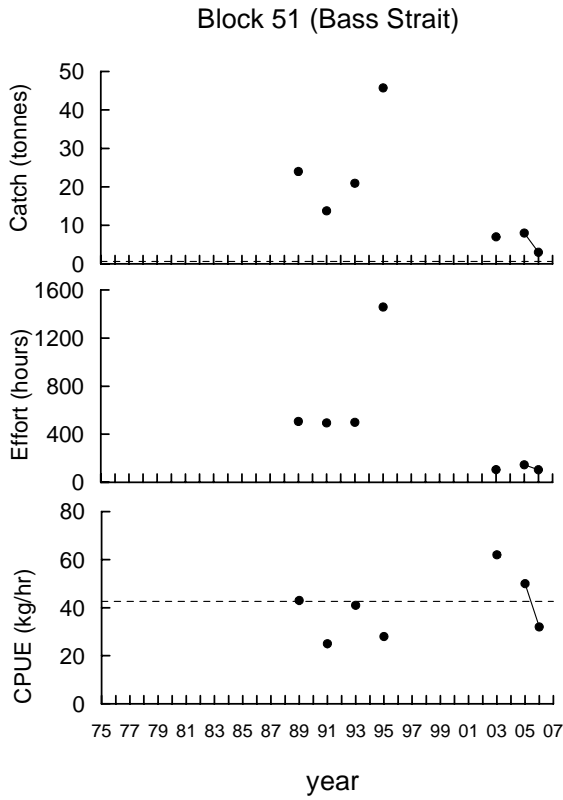
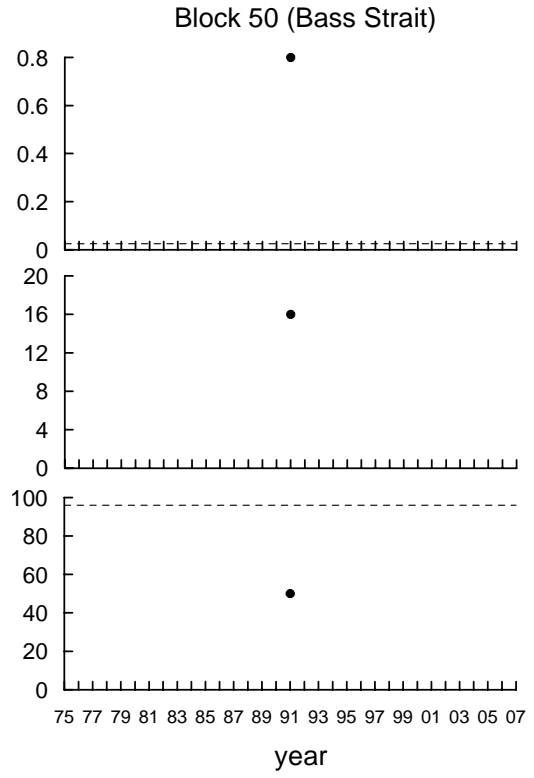
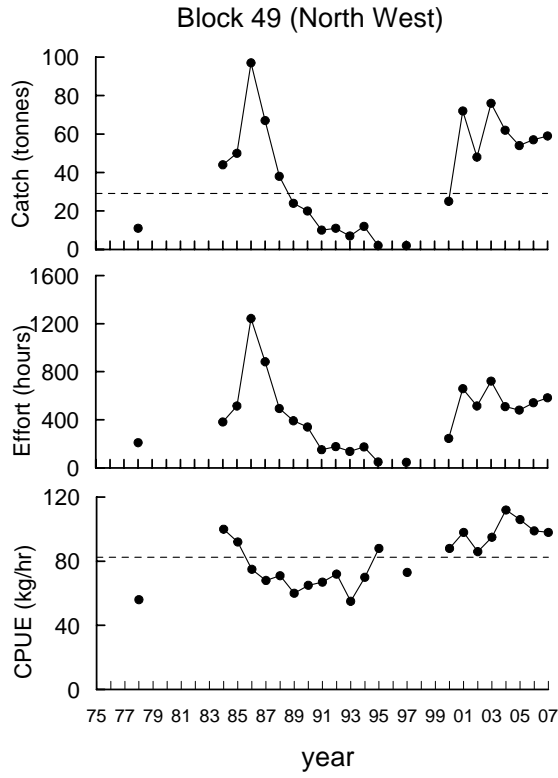


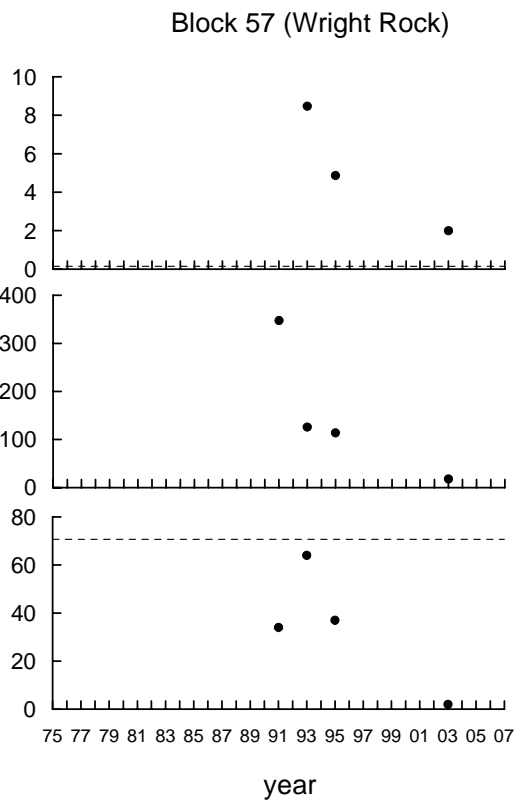
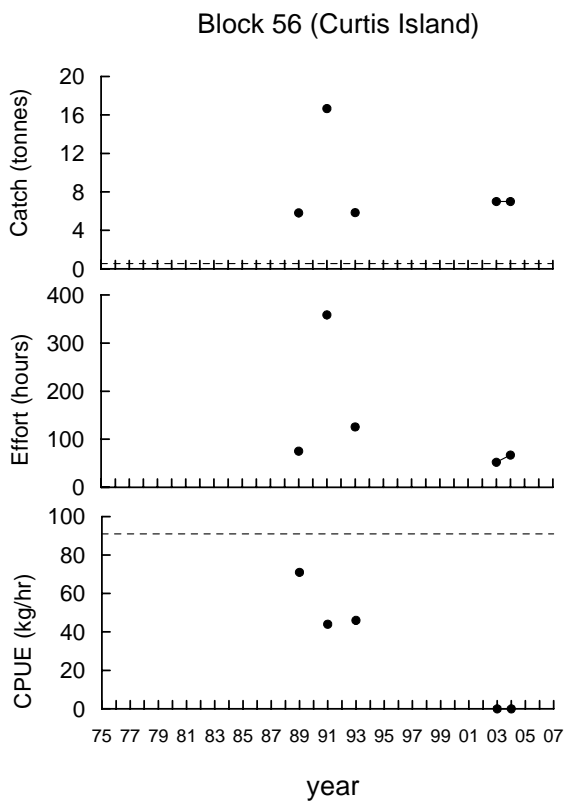
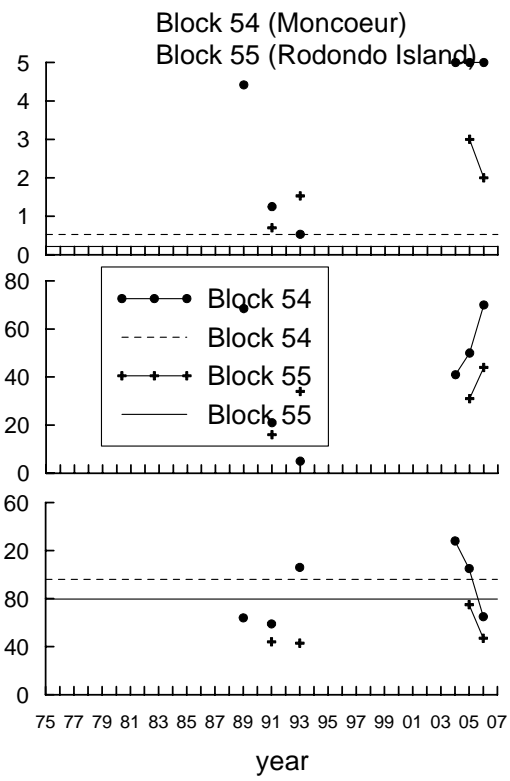
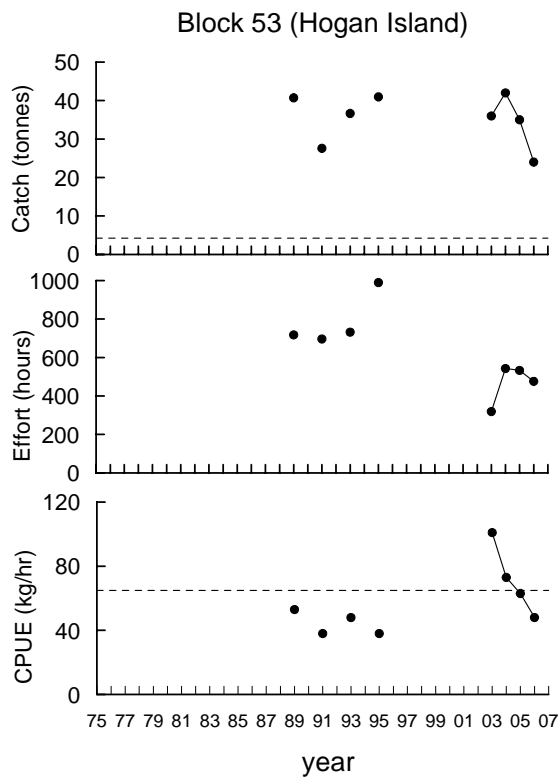




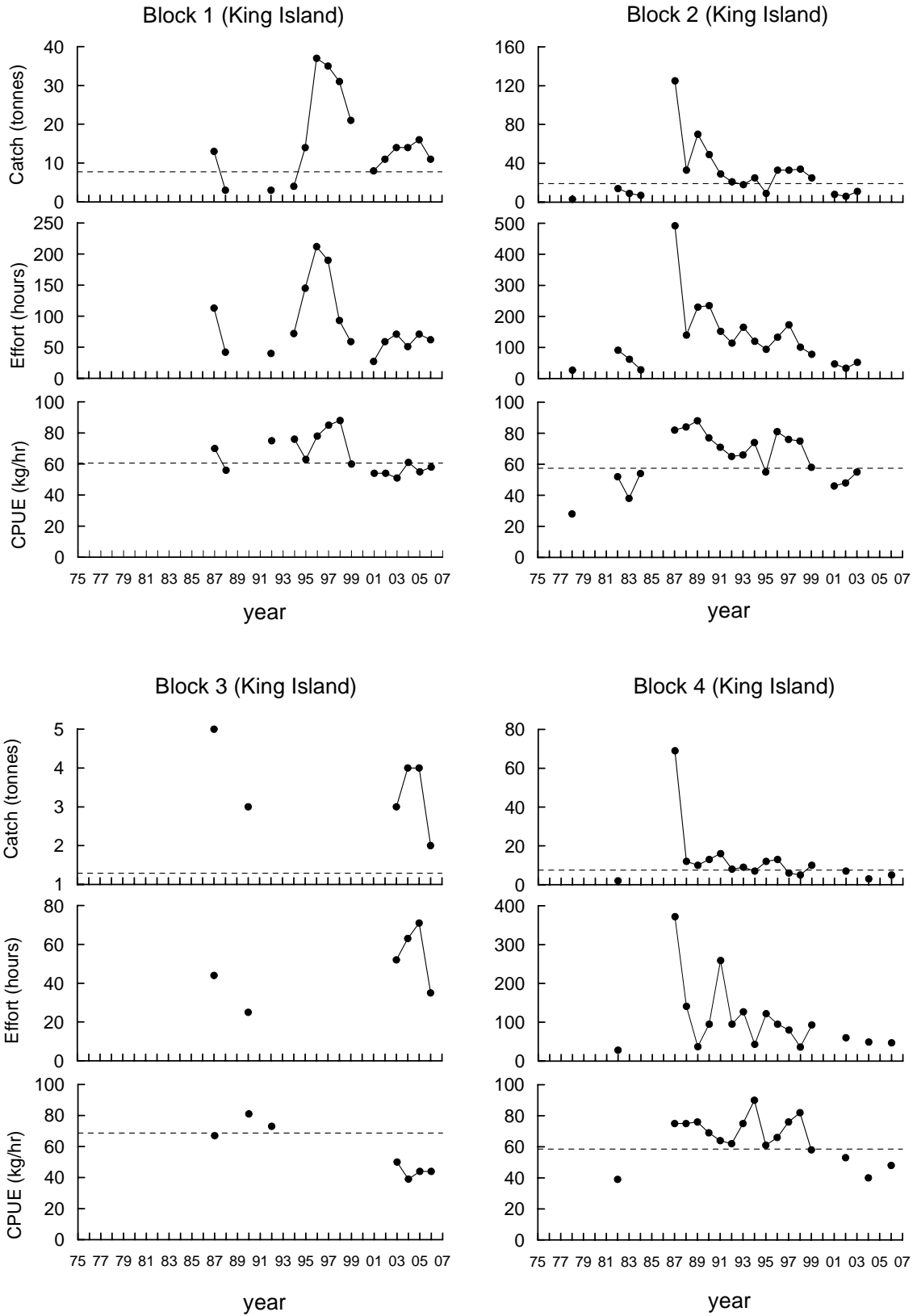


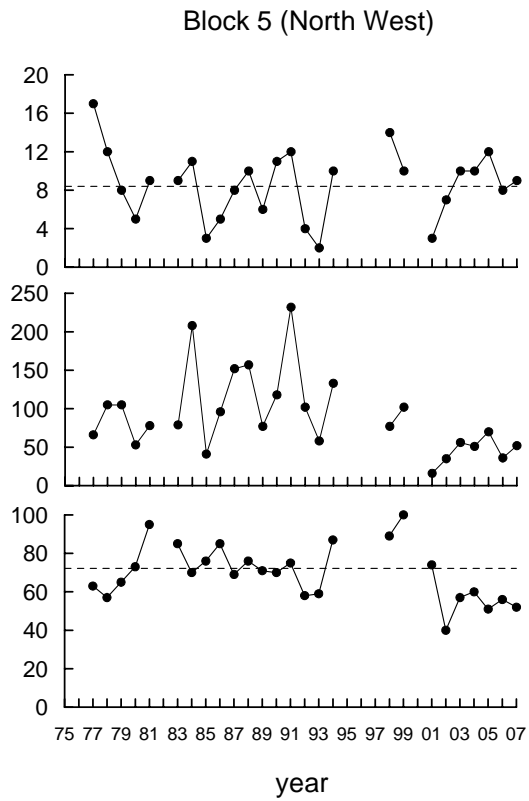
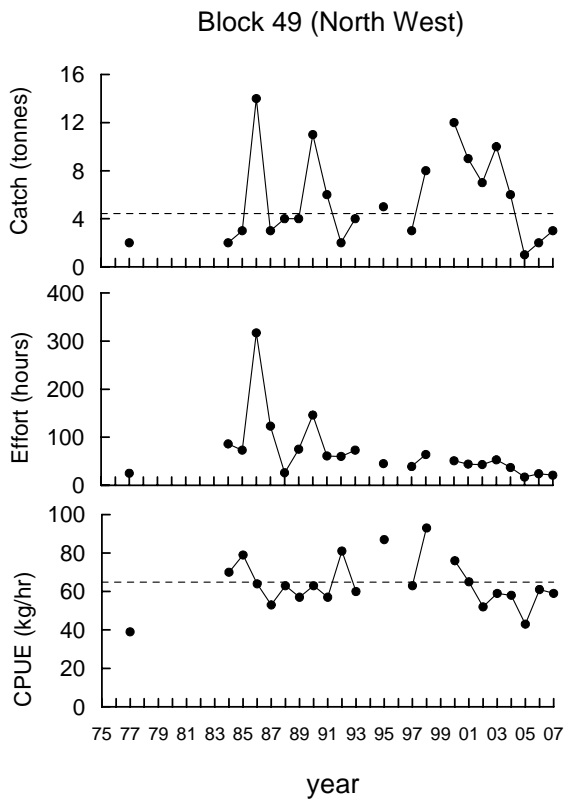
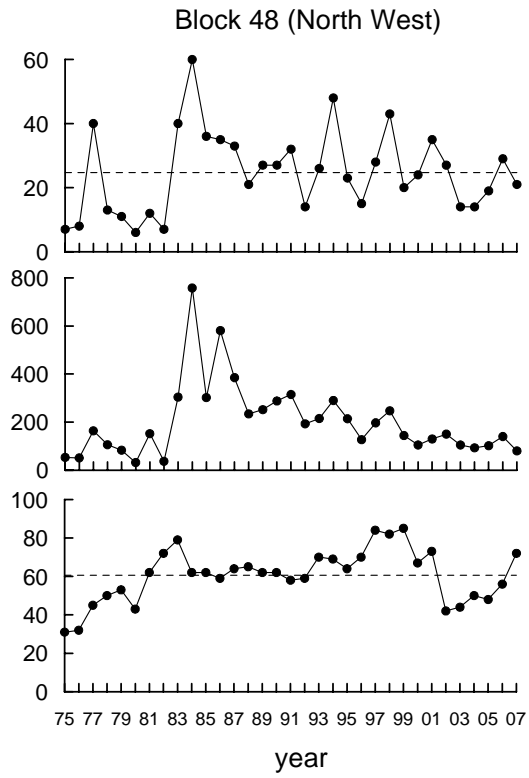
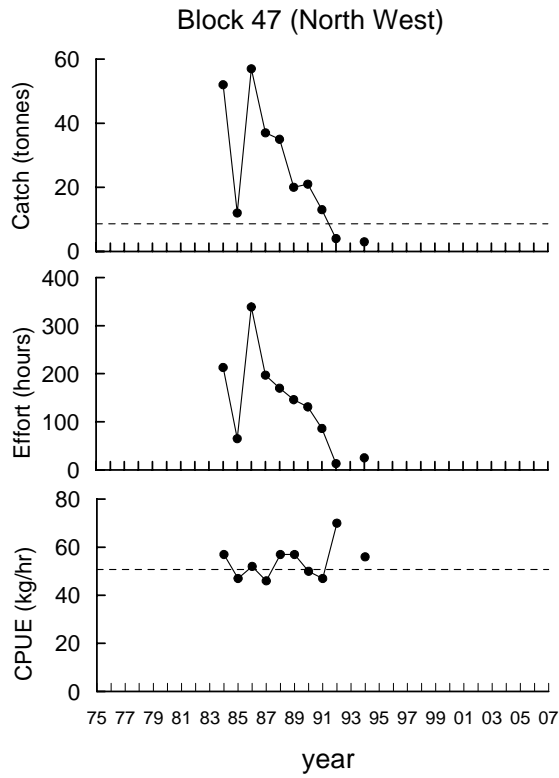


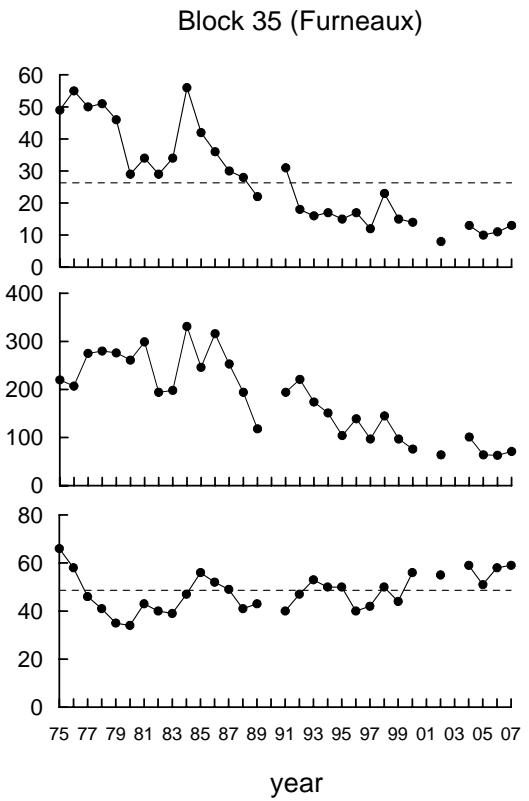
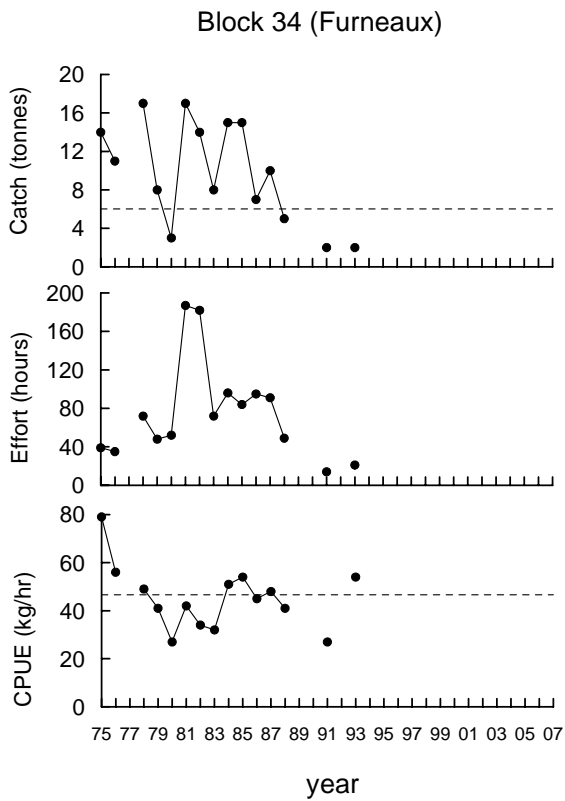
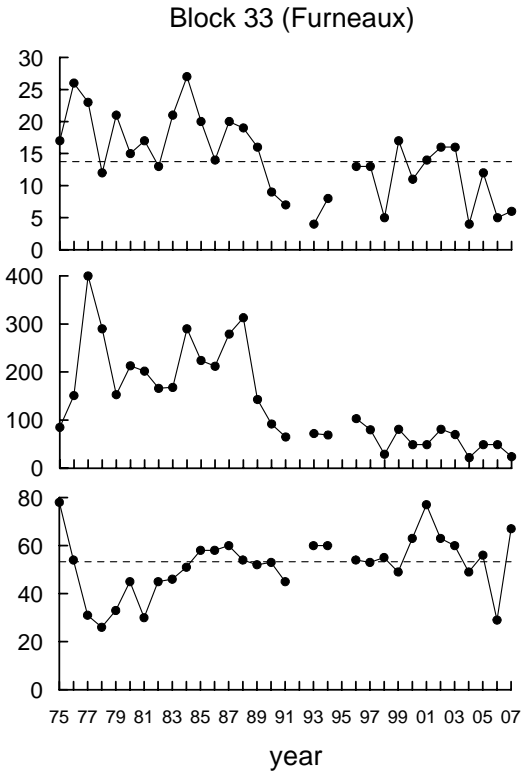
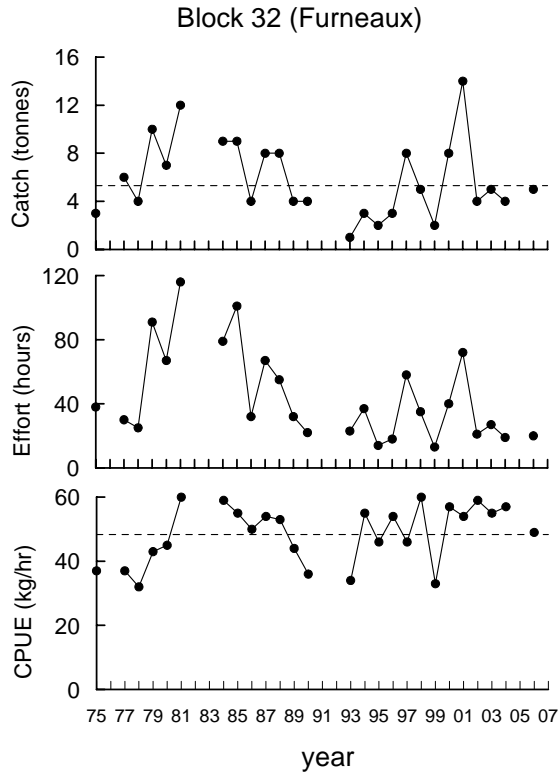


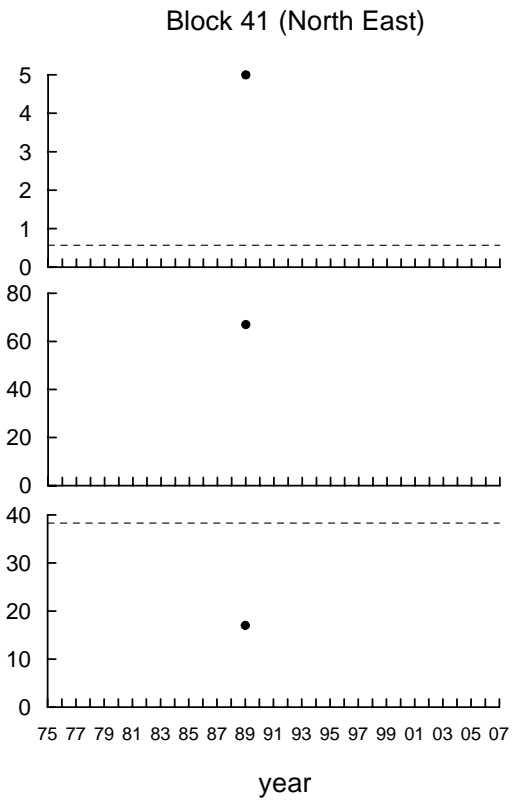
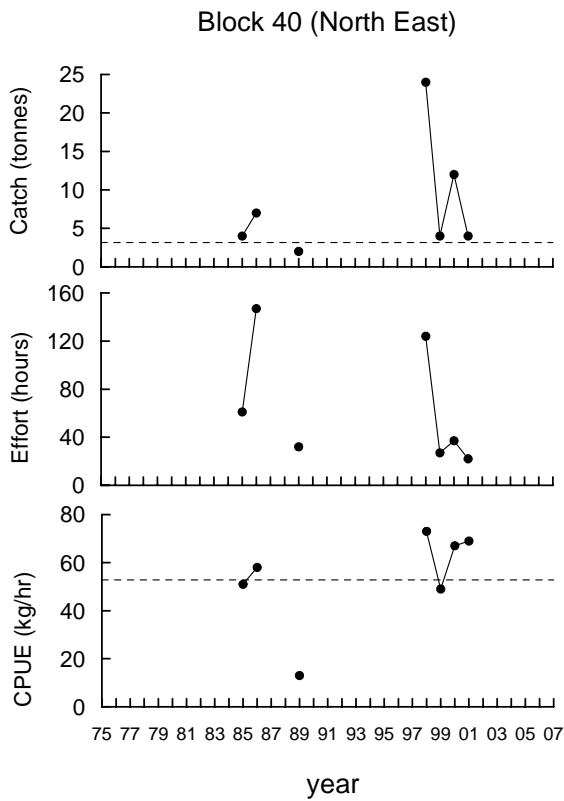
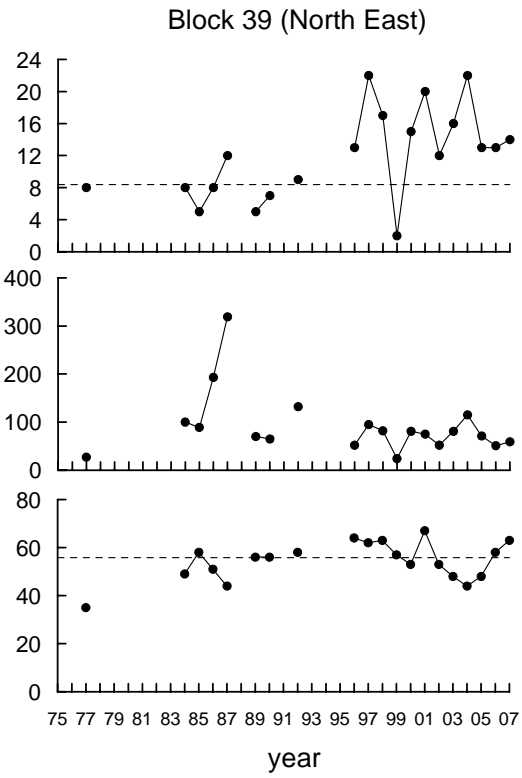
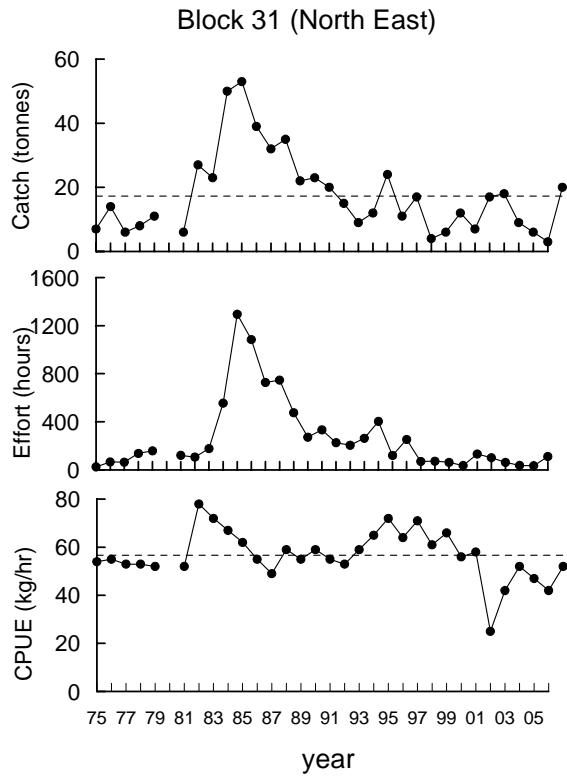


**Greenlip: Catch, Effort and Catch Rate, Blocks 1- 49**









### 3. Catch and Catch Rate Tables 1975 - 2007.

#### Western Zone annual catch.

Reported annual tonnages of blacklip abalone caught within the statistical blocks and sub-blocks comprising the Western Zone in 2007. These tonnages are derived from estimated weights, which do not correspond exactly with landed weights. Because the Western and Eastern Zones were established in 2000, and the Northern Zone in 2001, prior to those years it has not been possible to accurately assign catches to zones in blocks where zone boundaries occur. Consequently, catches in those blocks have been placed in the zone where the majority of catches occurred, so that earlier catches from Blocks 5 and 13 have been placed in the Northern and Eastern Zones respectively.

| Year    | 5 | 6   | 7   | 8  | 9   | 10  | 11  | 12  | 13 | Total |
|---------|---|-----|-----|----|-----|-----|-----|-----|----|-------|
| 1975    |   | 110 | 36  | 42 | 126 | 130 | 191 | 143 |    | 779   |
| 1976    |   | 63  | 56  | 77 | 252 | 179 | 240 | 153 |    | 1025  |
| 1977    |   | 50  | 24  | 22 | 123 | 98  | 153 | 189 |    | 663   |
| 1978    |   | 79  | 13  | 27 | 115 | 258 | 275 | 208 |    | 980   |
| 1979    |   | 112 | 19  | 23 | 172 | 166 | 269 | 325 |    | 1089  |
| 1980    |   | 196 | 81  | 63 | 316 | 195 | 338 | 351 |    | 1541  |
| 1981    |   | 257 | 88  | 87 | 444 | 260 | 417 | 246 |    | 1807  |
| 1982    |   | 147 | 34  | 34 | 249 | 100 | 303 | 235 |    | 1102  |
| 1983    |   | 231 | 102 | 58 | 199 | 174 | 430 | 242 |    | 1438  |
| 1984    |   | 298 | 78  | 38 | 248 | 284 | 681 | 258 |    | 1899  |
| 1985    |   | 322 | 99  | 23 | 246 | 140 | 478 | 155 |    | 1469  |
| 1986    |   | 213 | 97  | *  | 133 | 127 | 289 | 193 |    | 1065  |
| 1987    |   | 185 | 84  | 44 | 252 | 82  | 339 | 195 |    | 1180  |
| 1988    |   | 241 | 53  | 27 | 159 | 124 | 270 | 162 |    | 1048  |
| 1989    |   | 192 | 49  | 46 | 120 | 109 | 212 | 144 |    | 875   |
| 1990    |   | 197 | 56  | 21 | 95  | 80  | 232 | 125 |    | 809   |
| 1991    |   | 169 | 54  | 30 | 102 | 106 | 219 | 140 |    | 820   |
| 1992    |   | 235 | 70  | 36 | 91  | 95  | 266 | 159 |    | 1005  |
| 1993    |   | 154 | 64  | 38 | 110 | 65  | 197 | 177 |    | 814   |
| 1994    |   | 79  | 33  | 38 | 77  | 60  | 202 | 160 |    | 655   |
| 1995    |   | 112 | 30  | *  | 44  | 68  | 186 | 182 |    | 651   |
| 1996    |   | 103 | 67  | *  | 59  | 75  | 145 | 148 |    | 627   |
| 1997    |   | 98  | 75  | *  | 140 | 66  | 224 | 227 |    | 858   |
| 1998    |   | 126 | 51  | 27 | 78  | 47  | 163 | 199 |    | 696   |
| 1999    |   | 149 | 60  | 24 | 115 | 58  | 220 | 251 |    | 770   |
| 2000    |   | 183 | 61  | 23 | 205 | 148 | 326 | 282 | 54 | 1291  |
| 2001    |   | 210 | 32  | 15 | 186 | 152 | 312 | 290 | 43 | 1241  |
| 2002    | * | 173 | 51  | 17 | 174 | 143 | 360 | 236 | 93 | 1248  |
| 2003    | * | 97  | 104 | 27 | 142 | 239 | 345 | 229 | 67 | 1251  |
| 2004    | * | 88  | 89  | 22 | 130 | 181 | 374 | 250 | 96 | 1230  |
| 2005    | 6 | 95  | 110 | 26 | 92  | 149 | 389 | 311 | 65 | 1242  |
| 2006    | * | 109 | 76  | 6  | 142 | 198 | 384 | 228 | 89 | 1236  |
| 2007    |   | 76  | 39  | 18 | 178 | 240 | 354 | 267 | 68 | 1240  |
| Average | 2 | 156 | 62  | 32 | 161 | 139 | 296 | 214 | 72 | 1078  |

**Western Zone mean catch rates.**

| Year    | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 1975    |     | 78  | 106 | 94  | 78  | 115 | 92  | 97  |    |
| 1976    |     | 66  | 92  | 85  | 82  | 123 | 96  | 73  |    |
| 1977    |     | 71  | 76  | 71  | 73  | 82  | 73  | 67  |    |
| 1978    |     | 75  | 106 | 99  | 89  | 92  | 81  | 56  |    |
| 1979    |     | 80  | 85  | 91  | 89  | 74  | 79  | 80  |    |
| 1980    |     | 93  | 123 | 126 | 108 | 99  | 96  | 59  |    |
| 1981    |     | 93  | 101 | 103 | 96  | 112 | 90  | 63  |    |
| 1982    |     | 94  | 93  | 85  | 83  | 90  | 89  | 56  |    |
| 1983    |     | 93  | 96  | 93  | 95  | 90  | 86  | 64  |    |
| 1984    |     | 91  | 92  | 68  | 86  | 88  | 84  | 74  |    |
| 1985    |     | 80  | 86  | 114 | 78  | 75  | 78  | 60  |    |
| 1986    |     | 78  | 89  | *   | 77  | 82  | 82  | 72  |    |
| 1987    |     | 71  | 86  | 70  | 76  | 92  | 83  | 71  |    |
| 1988    |     | 79  | 77  | 68  | 80  | 91  | 81  | 72  |    |
| 1989    |     | 80  | 81  | 83  | 81  | 100 | 85  | 72  |    |
| 1990    |     | 85  | 80  | 89  | 82  | 87  | 88  | 75  |    |
| 1991    |     | 83  | 91  | 97  | 80  | 99  | 90  | 87  |    |
| 1992    |     | 89  | 96  | 91  | 89  | 97  | 92  | 90  |    |
| 1993    |     | 92  | 108 | 88  | 102 | 92  | 103 | 100 |    |
| 1994    |     | 93  | 101 | 93  | 114 | 124 | 106 | 102 |    |
| 1995    |     | 111 | 105 | *   | 126 | 149 | 117 | 117 |    |
| 1996    |     | 124 | 144 | *   | 149 | 135 | 137 | 122 |    |
| 1997    |     | 132 | 150 | *   | 153 | 161 | 141 | 137 |    |
| 1998    |     | 146 | 160 | 176 | 174 | 168 | 158 | 132 |    |
| 1999    |     | 137 | 172 | 157 | 198 | 176 | 165 | 138 |    |
| 2000    | *   | 139 | 171 | 157 | 167 | 197 | 163 | 135 | 94 |
| 2001    |     | 124 | 173 | 141 | 149 | 177 | 149 | 127 | 84 |
| 2002    | *   | 110 | 167 | 191 | 151 | 177 | 154 | 112 | 87 |
| 2003    | *   | 102 | 146 | 152 | 142 | 163 | 141 | 117 | 88 |
| 2004    | *   | 104 | 145 | 142 | 139 | 159 | 143 | 103 | 85 |
| 2005    | 115 | 108 | 141 | 143 | 147 | 146 | 137 | 104 | 81 |
| 2006    | *   | 104 | 144 | 176 | 140 | 149 | 129 | 103 | 91 |
| 2007    |     | 109 | 161 | 183 | 145 | 148 | 118 | 104 | 85 |
| Average | 120 | 97  | 117 | 116 | 113 | 121 | 109 | 92  | 87 |

**Eastern Zone annual catch.**

Reported annual tonnages of blacklip abalone caught within statistical blocks and sub-blocks comprising the Eastern Zone in 2007. These tonnages are derived from estimated weights, which do not correspond exactly with landed weights. Because the Western and Eastern Zones were not established until 2000, and the Northern Zone until 2001, prior to those years it has not been possible to accurately assign catches to zones in blocks where zone boundaries occur (Blocks 13 and 31). Consequently, catches in those blocks have been placed in the Eastern Zone, because the majority of later catches occurred there. This means that the average catch for these two blocks is probably overestimated.

| Year    | 13  | 14  | 15 | 16  | 17 | 19 | 20  | 21 | 22 | 23 | 24  | 25 | 26 | 27  | 28  | 29 | 30  | 31  | Total |
|---------|-----|-----|----|-----|----|----|-----|----|----|----|-----|----|----|-----|-----|----|-----|-----|-------|
| 1975    | 247 | 111 | *  | 47  | 11 | *  | 16  | 27 | 49 | 74 | 15  | 16 | 5  | 44  | 69  | 16 | 44  | 32  | 835   |
| 1976    | 208 | 156 | *  | 64  | 36 | *  | 18  | 25 | 45 | 56 | 18  | 12 | 9  | 40  | 72  | 9  | 37  | 50  | 857   |
| 1977    | 245 | 232 | 2  | 190 | 11 | *  | 23  | 35 | 37 | 53 | 11  | 10 | 8  | 55  | 90  | 22 | 119 | 54  | 1196  |
| 1978    | 322 | 218 | 6  | 119 | 24 | *  | 32  | 65 | 60 | 88 | 22  | 13 | 11 | 93  | 87  | 25 | 137 | 105 | 1431  |
| 1979    | 374 | 251 | 8  | 148 | 25 | *  | 51  | 52 | 43 | 30 | 9   | 23 | 7  | 80  | 52  | 12 | 105 | 60  | 1332  |
| 1980    | 272 | 255 | 7  | 145 | 30 | *  | 33  | 30 | 42 | 46 | 158 | 34 | *  | 108 | 91  | 27 | 148 | 105 | 1538  |
| 1981    | 254 | 299 | 18 | 127 | 48 | *  | 45  | 69 | 35 | 77 | 137 | 19 | 15 | 68  | 154 | 22 | 146 | 52  | 1586  |
| 1982    | 337 | 218 | 15 | 147 | 24 | 3  | 36  | 62 | 63 | 49 | 97  | 20 | 9  | 89  | 100 | 32 | 170 | 48  | 1519  |
| 1983    | 250 | 300 | 10 | 189 | 28 | 3  | 43  | 63 | 54 | 92 | 99  | 31 | 14 | 99  | 103 | 65 | 296 | 90  | 1828  |
| 1984    | 318 | 297 | 18 | 166 | 35 | 5  | 47  | 70 | 73 | 61 | 109 | 10 | 11 | 106 | 112 | 52 | 148 | 76  | 1714  |
| 1985    | 256 | 262 | 4  | 89  | 83 | 11 | 68  | 80 | 43 | 44 | 120 | 20 | 17 | 86  | 71  | 5  | 84  | 171 | 1515  |
| 1986    | 220 | 262 | 22 | 82  | 93 | 4  | 65  | 66 | 70 | 56 | 88  | 12 | 20 | 50  | 58  | 14 | 124 | 164 | 1472  |
| 1987    | 224 | 229 | 7  | 47  | 80 | *  | 43  | 44 | 32 | 34 | 66  | 12 | 8  | 76  | 45  | 11 | 67  | 54  | 1082  |
| 1988    | 219 | 258 | 6  | 76  | 57 | 4  | 62  | 44 | 43 | 34 | 79  | 10 | 6  | 65  | 52  | 16 | 93  | 90  | 1214  |
| 1989    | 156 | 172 | 2  | 56  | 43 | *  | 61  | 42 | 22 | 16 | 34  | 7  | 8  | 41  | 31  | 11 | 39  | 27  | 770   |
| 1990    | 132 | 193 | 4  | 76  | 29 | 3  | 33  | 51 | 40 | 36 | 61  | 1  | 2  | 61  | 77  | 21 | 54  | 22  | 897   |
| 1991    | 127 | 207 | *  | 60  | 37 | 3  | 53  | 50 | 47 | 31 | 67  | *  | 9  | 64  | 66  | 12 | 30  | 21  | 890   |
| 1992    | 140 | 106 | *  | 28  | 20 | *  | 51  | 43 | 49 | 23 | 67  | *  | *  | 67  | 45  | 7  | 10  | 13  | 676   |
| 1993    | 257 | 116 | 4  | 100 | 40 | *  | 59  | 78 | 48 | 24 | 73  | 1  | *  | 86  | 39  | 8  | 15  | 15  | 964   |
| 1994    | 295 | 139 | 10 | 114 | 46 | *  | 109 | 80 | 55 | 16 | 53  |    | 3  | 103 | 24  | 8  | 11  | 21  | 1088  |
| 1995    | 310 | 247 | *  | 100 | 35 | *  | 95  | 74 | 34 | 19 | 38  |    | *  | 81  | 18  | 6  | 10  | 26  | 1097  |
| 1996    | 391 | 195 | *  | 78  | 18 | *  | 71  | 55 | 44 | 28 | 67  | *  | *  | 89  | 39  | 11 | 28  | 20  | 1147  |
| 1997    | 471 | 137 | *  | 64  | 25 | *  | 79  | 49 | 47 | 32 | 106 | *  | 13 | 190 | 32  | 32 | 23  | 33  | 1336  |
| 1998    | 502 | 130 | *  | 116 | 23 | 2  | 85  | 64 | 63 | 44 | 160 | *  | 25 | 180 | 77  | 31 | 10  | 15  | 1530  |
| 1999    | 491 | 66  | 2  | 113 | 35 | 6  | 102 | 72 | 50 | 53 | 143 | *  | 9  | 95  | 60  | 26 | 11  | 39  | 1374  |
| 2000    | 381 | 98  | *  | 71  | 29 | 4  | 62  | 60 | 69 | 44 | 104 | *  | 8  | 101 | 16  | 21 | 10  | 90  | 1170  |
| 2001    | 324 | 157 | 3  | 108 | 20 | 2  | 56  | 50 | 40 | 24 | 111 | *  | 14 | 68  | 9   | 27 | 13  | 79  | 1105  |
| 2002    | 296 | 101 | *  | 72  | 16 | *  | 62  | 58 | 46 | 15 | 46  | *  | 2  | 53  | 7   | 15 | 12  | 44  | 847   |
| 2003    | 291 | 116 | *  | 60  | 17 | *  | 88  | 54 | 35 | 21 | 51  |    | 3  | 50  | 8   | 19 | 3   | 27  | 848   |
| 2004    | 221 | 104 | 7  | 50  | 20 | *  | 92  | 52 | 35 | 19 | 51  | *  | *  | 44  | 11  | 24 | 6   | 22  | 761   |
| 2005    | 181 | 90  | 8  | 56  | 20 | *  | 116 | 62 | 36 | 18 | 66  |    | *  | 43  | 13  | 36 | 7   | 15  | 770   |
| 2006    | 184 | 84  | 3  | 67  | 13 | *  | 73  | 66 | 71 | 23 | 88  | *  | *  | 40  | 10  | 41 |     | 7   | 773   |
| 2007    | 255 | 70  | *  | 56  | 8  | *  | 68  | 63 | 61 | 14 | 59  |    | *  | 55  | 11  | 32 |     | *   | 766   |
| Average | 277 | 178 | 6  | 93  | 33 | 3  | 61  | 56 | 48 | 39 | 75  | 8  | 8  | 78  | 53  | 22 | 61  | 51  | 1149  |

**Eastern Zone mean catch rates.**

| Year    | 13 | 14 | 15 | 16 | 17 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1975    | 49 | 42 | *  | 45 | 48 | *  | 43 | 50 | 46 | 32 | 42 | 51 | 26 | 37 | 34 | 46 | 39 | 46 |
| 1976    | 46 | 37 | *  | 51 | 34 | *  | 46 | 45 | 41 | 26 | 37 | 33 | 37 | 39 | 37 | 39 | 39 | 49 |
| 1977    | 49 | 49 | 33 | 50 | 37 | *  | 43 | 45 | 42 | 32 | 37 | 41 | 42 | 44 | 39 | 45 | 48 | 43 |
| 1978    | 48 | 45 | 41 | 46 | 41 | *  | 53 | 53 | 50 | 39 | 43 | 43 | 49 | 60 | 57 | 50 | 50 | 62 |
| 1979    | 50 | 45 | 33 | 47 | 34 | *  | 43 | 45 | 38 | 30 | 30 | 39 | 43 | 46 | 47 | 42 | 40 | 48 |
| 1980    | 47 | 40 | 49 | 49 | 35 | *  | 41 | 43 | 48 | 50 | 61 | 51 | *  | 58 | 61 | 53 | 47 | 61 |
| 1981    | 46 | 41 | 40 | 47 | 44 | *  | 49 | 55 | 45 | 50 | 53 | 58 | 49 | 55 | 64 | 57 | 52 | 59 |
| 1982    | 48 | 43 | 48 | 50 | 37 | 38 | 40 | 47 | 46 | 49 | 49 | 41 | 48 | 52 | 48 | 51 | 54 | 65 |
| 1983    | 47 | 44 | 50 | 54 | 51 | 52 | 48 | 54 | 53 | 55 | 52 | 45 | 51 | 62 | 54 | 56 | 55 | 68 |
| 1984    | 49 | 40 | 51 | 46 | 42 | 37 | 47 | 47 | 49 | 48 | 45 | 47 | 55 | 55 | 51 | 59 | 48 | 64 |
| 1985    | 51 | 42 | 35 | 48 | 40 | 49 | 45 | 56 | 50 | 42 | 43 | 48 | 51 | 50 | 49 | 45 | 48 | 59 |
| 1986    | 48 | 43 | 50 | 44 | 42 | 40 | 48 | 45 | 45 | 41 | 41 | 39 | 43 | 48 | 44 | 38 | 44 | 52 |
| 1987    | 44 | 39 | 37 | 42 | 39 | *  | 45 | 46 | 41 | 38 | 41 | 35 | 43 | 44 | 45 | 38 | 37 | 47 |
| 1988    | 43 | 39 | 31 | 40 | 43 | 36 | 47 | 51 | 44 | 41 | 42 | 32 | 37 | 45 | 44 | 46 | 42 | 55 |
| 1989    | 48 | 42 | 30 | 40 | 44 | *  | 47 | 58 | 47 | 42 | 38 | 36 | 38 | 47 | 47 | 45 | 42 | 51 |
| 1990    | 51 | 46 | 31 | 46 | 43 | 36 | 47 | 55 | 46 | 46 | 46 | 32 | 36 | 49 | 52 | 45 | 42 | 52 |
| 1991    | 50 | 47 | *  | 51 | 51 | 47 | 57 | 56 | 52 | 49 | 44 | *  | 55 | 56 | 50 | 38 | 37 | 51 |
| 1992    | 63 | 48 | *  | 63 | 51 | *  | 65 | 61 | 59 | 55 | 52 | *  | *  | 68 | 54 | 44 | 34 | 48 |
| 1993    | 62 | 50 | 42 | 64 | 62 | *  | 71 | 62 | 54 | 58 | 55 | 30 | *  | 64 | 53 | 43 | 38 | 55 |
| 1994    | 73 | 60 | 58 | 59 | 65 | *  | 72 | 70 | 57 | 45 | 56 |    | 38 | 63 | 44 | 51 | 46 | 58 |
| 1995    | 83 | 69 | *  | 68 | 54 | *  | 59 | 66 | 52 | 47 | 64 |    | *  | 69 | 60 | 56 | 55 | 68 |
| 1996    | 89 | 71 | *  | 73 | 58 | *  | 75 | 68 | 72 | 59 | 83 | *  | *  | 84 | 84 | 74 | 63 | 69 |
| 1997    | 83 | 66 | *  | 67 | 64 | *  | 67 | 71 | 61 | 64 | 77 | *  | 99 | 92 | 84 | 75 | 68 | 74 |
| 1998    | 84 | 72 | *  | 76 | 61 | 62 | 74 | 87 | 71 | 74 | 82 | *  | 80 | 91 | 89 | 89 | 66 | 74 |
| 1999    | 83 | 65 | 69 | 72 | 70 | 60 | 71 | 77 | 70 | 66 | 76 | *  | 69 | 81 | 84 | 67 | 59 | 81 |
| 2000    | 73 | 65 | *  | 69 | 67 | 57 | 68 | 70 | 65 | 59 | 67 | *  | 75 | 83 | 58 | 63 | 62 | 91 |
| 2001    | 63 | 56 | 50 | 54 | 50 | 34 | 52 | 58 | 43 | 39 | 49 | *  | 55 | 54 | 53 | 57 | 52 | 69 |
| 2002    | 46 | 49 | *  | 45 | 38 | *  | 53 | 54 | 41 | 37 | 41 | *  | 28 | 50 | 39 | 48 | 39 | 44 |
| 2003    | 50 | 51 | *  | 45 | 46 | *  | 54 | 53 | 43 | 44 | 49 |    | 40 | 50 | 44 | 48 | 42 | 50 |
| 2004    | 48 | 49 | 48 | 51 | 58 | *  | 64 | 56 | 48 | 46 | 58 | *  | *  | 59 | 44 | 58 | 54 | 66 |
| 2005    | 63 | 60 | 59 | 63 | 59 | *  | 74 | 73 | 61 | 57 | 74 |    | *  | 72 | 55 | 71 | 54 | 83 |
| 2006    | 71 | 65 | 54 | 77 | 67 | *  | 83 | 91 | 80 | 78 | 95 | *  | *  | 82 | 71 | 83 |    | 82 |
| 2007    | 86 | 68 | *  | 75 | 76 | *  | 81 | 89 | 76 | 73 | 92 |    | *  | 77 | 61 | 75 |    | *  |
| Average | 59 | 51 | 45 | 55 | 50 | 46 | 57 | 59 | 53 | 49 | 55 | 41 | 49 | 60 | 55 | 54 | 48 | 61 |

**Northern Zone annual catch.**

Reported annual tonnages of blacklip abalone caught within statistical blocks comprising the Northern Zone in 2007. These tonnages are derived from estimated weights, which do not correspond exactly with landed weights. There are no records for the Northern Zone part of Block 31 prior to the establishment of that zone in 2001.

| Year    | 31 | 39 | 40 | 32 | 33 | 34 | 35 | 36 | 38 | 47 | 48 | 49 | 5   | 1  | 2  | 3  | 4  | Total |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|-------|
| 1975    |    | *  | *  | *  | 10 | *  | *  | 7  | *  | *  | 12 | *  | 38  | *  | *  | *  | *  | 167   |
| 1976    |    | *  | *  |    | 5  |    | *  | *  | *  | *  | *  | *  | 46  | 39 | *  | 51 | 8  | 203   |
| 1977    |    | *  | *  | *  | 11 |    | *  | 3  | *  |    | 8  | 17 | 51  | *  | *  | *  | *  | 218   |
| 1978    |    | *  | *  | *  | 5  | *  | *  | *  | *  | 3  | 10 | 11 | 65  | 21 | *  | 55 | 25 | 225   |
| 1979    |    | *  | *  | 2  | 9  | *  | *  | 2  | *  |    | 27 | *  | 85  | 24 | *  | *  | 9  | 187   |
| 1980    |    | *  | *  | *  | 6  | *  | 1  | *  | *  |    | 10 | *  | 92  | 51 | 3  | *  | *  | 209   |
| 1981    |    | *  | *  | *  | 6  | *  | *  | *  |    | *  | 33 | *  | 120 | 19 | 8  | 32 | *  | 251   |
| 1982    |    | *  | *  | *  | 6  | *  | *  | 2  | *  | *  | 45 | *  | 121 | 22 | 9  | 27 | 13 | 266   |
| 1983    |    | *  | *  | *  | 3  | *  | *  | 5  | *  | *  | 45 | 19 | 228 | 22 | *  | 31 | 52 | 431   |
| 1984    |    | 6  | *  | 0  | 7  | *  | *  | 2  | *  | 4  | 80 | 44 | 312 | *  | *  | 33 | 55 | 560   |
| 1985    |    | 5  | 1  | 3  | 6  | *  | *  | *  | *  | 4  | 48 | 50 | 319 | *  | *  | *  | 11 | 522   |
| 1986    |    | 10 | 5  | *  | 9  | *  | 3  | *  | *  | 15 | 85 | 97 | 267 | 35 | 4  | 24 | 13 | 573   |
| 1987    |    | 6  | *  | 0  | 7  | *  | 2  | *  | *  | 18 | 58 | 67 | 198 | 44 | 62 | 24 | 54 | 543   |
| 1988    |    | 3  | *  | *  | 11 | *  | 1  | *  |    | 18 | 30 | 38 | 165 | 29 | 16 | 21 | 60 | 393   |
| 1989    |    | 1  | *  | *  | 3  | *  | *  | *  |    | 14 | 15 | 24 | 88  | 14 | 7  | 10 | 5  | 210   |
| 1990    |    | *  | *  | *  | *  |    | *  | *  |    | *  | 14 | 20 | 82  | *  | 10 | 9  | 11 | 166   |
| 1991    |    | *  |    |    | 2  |    | *  | *  | *  | 8  | 12 | 10 | 97  | *  | 7  | 14 | 26 | 185   |
| 1992    |    | 4  |    | *  | *  | *  | *  | *  |    | *  | 10 | 11 | 76  | 2  | 3  | 9  | 8  | 129   |
| 1993    |    | *  | *  | *  | 3  | *  | *  | *  | *  | *  | 7  | 7  | 65  | *  | 3  | 8  | 9  | 111   |
| 1994    |    | *  |    | *  | 3  | *  | *  | *  | *  | *  | 7  | 12 | 49  | *  | *  | *  | *  | 94    |
| 1995    |    | *  | *  | *  | *  | *  | *  | *  |    | *  | 6  | 2  | 62  | *  | 3  | *  | 8  | 95    |
| 1996    |    | *  | *  | *  | *  |    | *  |    |    |    | 4  | *  | 63  | 7  | 2  | *  | 2  | 80    |
| 1997    |    | *  |    | *  | *  |    | *  |    |    |    | 6  | 2  | 56  | 10 | 1  | 10 | 6  | 92    |
| 1998    |    | *  | *  | *  | *  | *  |    |    |    |    | 7  | 3  | 61  | *  | *  | *  | 2  | 79    |
| 1999    |    | 5  | *  | *  | 4  |    | *  | *  | *  |    | 14 | 4  | 57  | *  | *  | *  | 6  | 103   |
| 2000    |    | 5  | *  | *  | 5  | *  | *  | *  | *  |    | 12 | 25 | 38  | *  |    | *  | *  | 107   |
| 2001    | 12 | 11 | *  | 5  | 10 | *  | *  | *  | *  |    | 17 | 72 | 117 | 2  | *  | *  | 12 | 279   |
| 2002    | 30 | 4  | *  | 1  | 11 | *  | *  | *  | 2  |    | 12 | 48 | 103 | 10 | *  | 35 | 16 | 277   |
| 2003    | 7  | 8  | *  | *  | 5  | *  | *  | *  | *  | *  | 10 | 76 | 73  | 25 | *  | 62 | 10 | 279   |
| 2004    | 14 | 6  | *  | *  | 3  | *  | *  | *  | *  | *  | 6  | 62 | 57  | 10 | *  | 85 | 34 | 280   |
| 2005    | 11 | 2  | *  |    | 7  | *  | *  | *  | *  | *  | 6  | 54 | 73  | 15 | *  | 92 | 18 | 282   |
| 2006    | 16 | 4  | *  | *  | 11 | *  | *  | *  | 10 | *  | 5  | 57 | 96  | 11 | 3  | 57 | 8  | 279   |
| 2007    | 55 | 11 |    |    | 2  |    | *  |    |    | *  | 6  | 59 | 89  | *  | *  | 47 | *  | 280   |
| Average | 21 | 4  | 2  | 1  | 5  | 0  | 1  | 1  | 1  | 3  | 20 | 29 | 106 | 18 | 5  | 29 | 16 | 247   |

**Northern Zone mean catch rates.**

| Year    | 31 | 39 | 40 | 32 | 33 | 34 | 35 | 36 | 38 | 47 | 48 | 49  | 5   | 1   | 2  | 3   | 4  |
|---------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|----|-----|----|
| 1975    |    | *  | *  | *  | 66 | *  | *  | 71 | *  | *  | 36 | *   | 65  | *   | *  | *   | *  |
| 1976    |    | *  | *  |    | 56 |    | *  | *  | *  | *  | *  | *   | 62  | 51  | *  | 116 | 63 |
| 1977    |    | *  | *  | *  | 34 |    | *  | 54 | *  |    | 46 | 37  | 69  | *   | *  | *   | *  |
| 1978    |    | *  | *  | *  | 29 | *  | *  | *  | *  | 39 | 52 | 56  | 70  | 36  | *  | 62  | 69 |
| 1979    |    | *  | *  | 42 | 35 | *  | *  | 33 | *  |    | 55 | *   | 79  | 38  | *  | *   | 45 |
| 1980    |    | *  | *  | *  | 45 | *  | 34 | *  | *  |    | 54 | *   | 83  | 58  | 46 | *   | *  |
| 1981    |    | *  | *  | *  | 33 | *  | *  | *  |    | *  | 66 | *   | 90  | 49  | 60 | 54  | *  |
| 1982    |    | *  | *  | *  | 45 | *  | *  | 36 | *  | *  | 90 | *   | 90  | 51  | 55 | 62  | 54 |
| 1983    |    | *  | *  | *  | 46 | *  | *  | 45 | *  | *  | 71 | 78  | 87  | 44  | *  | 48  | 61 |
| 1984    | 49 | *  |    | 57 | 52 | *  | *  | 48 | *  | 57 | 65 | 100 | 83  | *   | *  | 54  | 90 |
| 1985    | 55 | 43 | 57 | 59 | *  | *  | *  | *  | *  | 53 | 69 | 92  | 81  | *   | *  | *   | 90 |
| 1986    | 53 | 57 | *  | 60 | *  | 52 | *  | *  | *  | 53 | 66 | 75  | 79  | 89  | 81 | 86  | 80 |
| 1987    | 43 | *  | 54 | 61 | *  | 47 | *  | *  | *  | 49 | 68 | 68  | 69  | 75  | 82 | 63  | 73 |
| 1988    | 44 | *  | *  | 52 | *  | 42 | *  |    |    | 60 | 67 | 71  | 72  | 71  | 76 | 71  | 72 |
| 1989    | 56 | *  | *  | 51 | *  | *  | *  |    |    | 60 | 62 | 60  | 78  | 74  | 86 | 63  | 71 |
| 1990    | *  | *  | *  | *  |    | *  | *  |    |    | *  | 62 | 65  | 70  | *   | 73 | 60  | 63 |
| 1991    | *  |    |    | 46 |    | *  | *  | *  | *  | 52 | 59 | 67  | 78  | *   | 69 | 55  | 65 |
| 1992    | 57 |    | *  | *  | *  | *  | *  |    |    | *  | 61 | 72  | 75  | 72  | 58 | 69  | 55 |
| 1993    | *  | *  | *  | 59 | *  | *  | *  | *  | *  | *  | 71 | 55  | 75  | *   | 67 | 82  | 76 |
| 1994    | *  |    | *  | 54 | *  | *  |    |    | *  | *  | 69 | 70  | 87  | *   | *  | *   | *  |
| 1995    | *  | *  | *  | *  | *  | *  | *  | *  |    | *  | 64 | 88  | 91  | *   | 56 | *   | 65 |
| 1996    | *  | *  | *  | *  |    | *  | *  |    |    |    | 72 | *   | 115 | 77  | 80 | *   | 67 |
| 1997    | *  |    | *  | *  |    | *  |    |    |    |    | 86 | 73  | 118 | 83  | 76 | 85  | 75 |
| 1998    | *  | *  | *  | *  | *  |    |    |    |    |    | 83 | 96  | 116 | *   | *  | *   | 84 |
| 1999    | 71 | *  | *  | 51 |    | *  | *  | *  |    |    | 86 | 82  | 117 | *   | *  | *   | 64 |
| 2000    | 68 | 76 | *  | *  | 69 | *  | *  | *  | *  |    | 73 | 88  | 128 | *   |    | *   | *  |
| 2001    | 82 | 71 | *  | 46 | 71 | *  | *  | *  | *  |    | 69 | 98  | 99  | 113 | *  | *   | 81 |
| 2002    | 44 | 33 | *  | 45 | 54 | *  | *  | *  | 66 |    | 42 | 86  | 84  | 53  | *  | 108 | 80 |
| 2003    | 40 | 44 | *  | *  | 40 | *  | *  | *  | *  | *  | 46 | 95  | 79  | 81  | *  | 108 | 76 |
| 2004    | 69 | 47 | *  | *  | 41 | *  | *  | *  | *  | *  | 43 | 112 | 86  | 78  | *  | 108 | 85 |
| 2005    | 50 | 27 | *  |    | 44 | *  | *  | *  | *  | *  | 47 | 106 | 85  | 74  | *  | 101 | 76 |
| 2006    | 72 | 47 | *  | *  | 42 | *  | *  | *  | 69 | *  | 44 | 99  | 76  | 84  | 50 | 93  | 68 |
| 2007    | 74 | 64 |    | 46 |    | *  |    |    |    | *  | 59 | 98  | 79  | *   | *  | 111 | *  |
| Average | 59 | 55 | 45 | 42 | 51 | 47 | 43 | 45 | 48 | 51 | 62 | 81  | 85  | 68  | 54 | 80  | 71 |

**Greenlip fishery annual catch.**

Reported annual tonnages of greenlip abalone caught within the statistical blocks comprising the Greenlip fishery in 2007. These tonnages are derived from estimated weights, which do not correspond exactly with landed weights.

| Year    | 31 | 39 | 40 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 47 | 48 | 49 | 5  | 1  | 2   | 3 | 4  | Total |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|---|----|-------|
| 1975    | 7  | *  | *  | 3  | 17 | 14 | 49 | 69 | 14 | 11 |    | 7  | *  | 8  |    | *   |   | 1  | 212   |
| 1976    | 14 | *  | *  | *  | 26 | 11 | 55 | 49 | *  | *  |    | 8  | *  | 14 |    |     |   |    | 207   |
| 1977    | 6  | 8  | *  | 6  | 23 | *  | 50 | 24 | *  | 22 |    | 40 | 2  | 17 |    |     |   |    | 224   |
| 1978    | 8  | *  | *  | 4  | 12 | 17 | 51 | 38 | *  | 17 | *  | 13 | *  | 12 | 1  | 3   |   | 2  | 192   |
| 1979    | 11 | *  | *  | 10 | 21 | *  | 46 | 15 | *  | 4  |    | 11 |    | 8  |    |     |   |    | 146   |
| 1980    | 4  | *  | *  | 7  | 15 | *  | 29 | *  | *  | 4  |    | 6  |    | 5  |    | 3   |   |    | 101   |
| 1981    | 6  | *  | *  | 12 | 17 | *  | 34 | 10 | *  |    | *  | 12 | *  | 9  |    | *   |   | *  | 152   |
| 1982    | 27 | *  | *  | *  | 13 | *  | *  | *  | *  | *  | *  | 7  |    | 2  |    | 14  |   | 2  | 143   |
| 1983    | 23 | *  |    | *  | 21 | 8  | 34 | 9  | *  | *  | *  | 40 | 11 | 9  |    | *   |   | *  | 201   |
| 1984    | 50 | 8  | *  | 9  | 27 | 15 | 56 | 7  | 6  |    | 52 | 60 | 2  | 11 |    | *   | 1 | 5  | 320   |
| 1985    | 53 | 5  | 4  | 9  | 20 | 15 | 42 | *  | *  | *  | 12 | 36 | 3  | 3  |    | *   |   | 1  | 222   |
| 1986    | 39 | 8  | 7  | *  | 14 | *  | *  | *  | *  |    | 57 | 35 | 14 | 5  | 1  | 8   |   | 3  | 250   |
| 1987    | 32 | 12 | *  | 8  | 20 | *  | 30 | *  | 10 | *  | 37 | 33 | 3  | 8  | 13 | 125 | 5 | 69 | 431   |
| 1988    | 35 | 2  | *  | 8  | 23 | *  | *  | *  | *  |    | 35 | 28 | 5  | 10 | 3  | 33  | 2 | 12 | 249   |
| 1989    | 22 | 5  | 2  | *  | 16 | *  | 22 | *  | *  |    | 20 | 27 | 4  | 6  | 1  | 70  | 3 | 10 | 227   |
| 1990    | 23 | 7  |    | 4  | 9  | *  | *  | 6  | *  | *  | 21 | 27 | 11 | 11 | 2  | 49  | 3 | 13 | 218   |
| 1991    | 20 | *  |    | *  | 7  | 2  | 31 | *  | 3  |    | 13 | 32 | 6  | 12 | *  | 29  | 3 | 16 | 192   |
| 1992    | 16 | 10 |    | *  | *  | *  | *  | *  | *  |    | 4  | 14 | 2  | 4  | 3  | 18  | 1 | 8  | 124   |
| 1993    | 9  | *  |    | *  | 5  | *  | *  | *  | 3  |    | *  | 26 | 3  | 2  | *  | 17  |   | 9  | 113   |
| 1994    | 12 | *  |    | *  | *  | *  | *  | *  | *  |    | 3  | 48 | 3  | 10 | 4  | 25  |   | 7  | 161   |
| 1995    | 25 | *  | *  | 5  | 9  | *  | 21 | *  | 3  | *  | *  | 23 | 5  | 8  | 14 | 10  |   | 13 | 164   |
| 1996    | 11 | 13 | *  | 4  | 14 | *  | 20 | 2  | 8  | *  | *  | 15 |    | 3  | 36 | 33  | * | 12 | 191   |
| 1997    | 17 | 22 | *  | 8  | 13 | *  | 12 | *  | 11 | *  | *  | 28 | 3  | 6  | 35 | 33  |   | 6  | 216   |
| 1998    | 4  | 17 | 25 | 5  | 6  | *  | 23 | *  | *  | *  | *  | 43 | 8  | 14 | 33 | 34  |   | 5  | 225   |
| 1999    | 6  | 2  | 4  | 2  | 17 | *  | 15 | *  | 2  | 4  |    | 18 | 1  | 10 | 21 | 25  | 1 | 10 | 141   |
| 2000    | 12 | 15 | 12 | 8  | 11 | *  | 14 | *  | *  | *  | *  | 24 | 12 | *  | *  | *   | * | *  | 140   |
| 2001    | 7  | 20 | 4  | 14 | 14 | *  | *  | *  | 1  | *  | *  | 35 | 9  | 3  | 8  | 8   | * | *  | 140   |
| 2002    | 17 | 12 | *  | 4  | 16 | *  | 8  | *  | *  | *  |    | 27 | 5  | 7  | 11 | 6   | * | 9  | 139   |
| 2003    | 18 | 16 | *  | 5  | 16 | *  | *  | *  | *  | *  | *  | 14 | 10 | 10 | 14 | 11  | 3 | *  | 140   |
| 2004    | 9  | 22 | *  | 4  | 4  | *  | 13 | *  | *  | *  |    | 14 | 6  | 10 | 14 | *   | 4 | 3  | 128   |
| 2005    | 6  | 13 | *  | *  | 12 | *  | 10 | *  | *  | *  |    | 19 | 1  | 12 | 16 | *   | 4 | *  | 123   |
| 2006    | 3  | 13 | *  | 5  | 5  | *  | 11 | *  | 4  | *  | *  | 29 | 2  | 8  | 11 | *   | 2 | 5  | 123   |
| 2007    | 20 | 14 |    | *  | 6  | *  | 13 | *  | *  | *  | *  | 21 | 3  | 9  | *  | *   | * | *  | 124   |
| Average | 17 | 9  | 3  | 6  | 14 | 6  | 27 | 10 | 4  | 6  | 9  | 25 | 4  | 8  | 8  | 19  | 1 | 8  | 184   |

**Greenlip fishery mean catch rates.**

| Year    | 31 | 39 | 40 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 47 | 48 | 49 | 5   | 1  | 2  | 3  | 4  |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|
| 1975    | 54 | *  | *  | 37 | 78 | 79 | 66 | 71 | 67 | 95 |    | 31 | *  | *   |    | *  |    | *  |
| 1976    | 55 | *  | *  | *  | 54 | 56 | 58 | 62 | *  | *  |    | 32 | *  | *   | *  | *  | *  |    |
| 1977    | 53 | 35 | *  | 37 | 31 | *  | 46 | 54 | *  | 53 |    | 45 | 39 | 63  | *  | *  |    | *  |
| 1978    | 53 | *  | *  | 32 | 26 | 49 | 41 | 53 | *  | 60 | *  | 50 | *  | 57  | *  | 28 | *  | *  |
| 1979    | 52 | *  | *  | 43 | 33 | 41 | 35 | 32 | 35 | 43 |    | 53 | *  | 65  | *  | *  |    | *  |
| 1980    | *  | *  | *  | 45 | 45 | 27 | 34 | 56 | 40 | *  |    | 43 |    | 73  | *  | *  |    | *  |
| 1981    | 52 | *  | *  | 60 | 30 | 42 | 43 | 44 | 39 | *  | *  | 62 | *  | 95  |    | *  | *  | *  |
| 1982    | 78 | *  | *  | *  | 45 | 34 | 40 | 33 | 31 | *  | *  | 72 |    | *   | *  | 52 |    | 39 |
| 1983    | 72 | *  |    | *  | 46 | 32 | 39 | 42 | *  | *  | *  | 79 | *  | 85  | *  | 38 | *  | *  |
| 1984    | 67 | 49 | *  | 59 | 51 | 51 | 47 | 47 | 37 | *  | 57 | 62 | 70 | 70  | *  | 54 | *  | *  |
| 1985    | 62 | 58 | 51 | 55 | 58 | 54 | 56 | *  | *  | *  | 47 | 62 | 79 | 76  | *  | *  | *  | *  |
| 1986    | 55 | 51 | 58 | 50 | 58 | 45 | 52 | 50 | *  |    | 52 | 59 | 64 | 85  | *  | *  |    | *  |
| 1987    | 49 | 44 | *  | 54 | 60 | 48 | 49 | 46 | 40 | *  | 46 | 64 | 53 | 69  | 70 | 82 | 67 | 75 |
| 1988    | 59 | *  | *  | 53 | 54 | 41 | 41 | 43 | *  |    | 57 | 65 | 63 | 76  | 56 | 84 | *  | 75 |
| 1989    | 55 | 56 | 13 | 44 | 52 | *  | 43 | *  | *  |    | 57 | 62 | 57 | 71  | *  | 88 | *  | 76 |
| 1990    | 59 | 56 | *  | 36 | 53 | *  | *  | 42 | *  | *  | 50 | 62 | 63 | 70  | *  | 77 | 81 | 69 |
| 1991    | 55 | *  |    | *  | 45 | 27 | 40 | *  | 19 | *  | 47 | 58 | 57 | 75  | *  | 71 | *  | 64 |
| 1992    | 53 | 58 | *  | *  | *  | *  | 47 | *  | *  |    | 70 | 59 | 81 | 58  | 75 | 65 | 73 | 62 |
| 1993    | 59 | *  | *  | 34 | 60 | 54 | 53 | *  | 35 |    | *  | 70 | 60 | 59  | *  | 66 | *  | 75 |
| 1994    | 65 | *  |    | 55 | 60 | *  | 50 | *  | *  | *  | 56 | 69 | *  | 87  | 76 | 74 |    | 90 |
| 1995    | 72 | *  | *  | 46 | *  | *  | 50 | *  | *  | *  | *  | 64 | 87 | *   | 63 | 55 | *  | 61 |
| 1996    | 64 | 64 | *  | 54 | 54 | *  | 40 | 31 | 46 | *  | *  | 70 | *  | *   | 78 | 81 | *  | 66 |
| 1997    | 71 | 62 | *  | 46 | 53 | *  | 42 | *  | 42 | *  | *  | 84 | 63 | *   | 85 | 76 | *  | 76 |
| 1998    | 61 | 63 | 73 | 60 | 55 | *  | 50 | *  | *  | *  | *  | 82 | 93 | 89  | 88 | 75 | *  | 82 |
| 1999    | 66 | 57 | 49 | 33 | 49 | *  | 44 | *  | 29 | 36 |    | 85 | *  | 100 | 60 | 58 | *  | 58 |
| 2000    | 56 | 53 | 67 | 57 | 63 | *  | 56 | *  | *  | *  | *  | 67 | 76 | *   | *  | *  | *  | *  |
| 2001    | 58 | 67 | 69 | 54 | 77 | *  | *  | *  | 40 | *  | *  | 73 | 65 | 74  | 54 | 46 | *  | *  |
| 2002    | 25 | 53 | *  | 59 | 63 | *  | 55 | *  | *  | *  |    | 42 | 52 | 40  | 54 | 48 | *  | 53 |
| 2003    | 42 | 48 | *  | 55 | 60 | *  | *  | *  | *  | *  |    | 44 | 59 | 57  | 51 | 55 | 50 | *  |
| 2004    | 52 | 44 | *  | 57 | 49 | *  | 59 | *  | *  | *  |    | 50 | 58 | 60  | 61 | *  | 39 | 40 |
| 2005    | 47 | 48 | *  | *  | 56 | *  | 51 | *  | *  | *  |    | 48 | 43 | 51  | 55 | *  | 44 | *  |
| 2006    | 42 | 58 | *  | 49 | 29 | *  | 58 | *  | 31 | *  | *  | 56 | 61 | 56  | 58 | *  | 44 | 48 |
| 2007    | 52 | 63 |    | *  | 67 | *  | 59 | *  | *  | *  | *  | 72 | 59 | 52  | *  | *  | *  | *  |
| Average | 57 | 54 | 54 | 49 | 52 | 45 | 48 | 47 | 38 | 57 | 54 | 60 | 64 | 70  | 66 | 64 | 57 | 65 |

**Bass Strait Zone annual catch.**

Reported annual tonnages of blacklip abalone caught within statistical blocks comprising the Bass Strait Zone in 2007. These tonnages are derived from estimated weights, which do not correspond exactly with landed weights.

No catch was recorded landed from the Bass Strait Zone in 2007.

| Year    | 37 | 38 | 41 | 42 | 43 | 44 | 45 | 46 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | Total |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------|
| 1975    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| 1976    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    | 1     |
| 1977    | *  |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    | 1     |
| 1978    | *  |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    | 1     |
| 1979    | *  |    | *  |    |    |    |    | *  |    |    |    |    |    |    |    |    | 4     |
| 1980    | *  |    | *  |    | *  |    |    |    |    |    |    |    |    |    |    |    | 1     |
| 1981    | 2  |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    | 3     |
| 1982    | *  |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    | 1     |
| 1983    | *  |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    | 1     |
| 1984    | *  |    | *  | *  | *  |    |    | *  |    |    |    |    |    |    |    |    | 5     |
| 1985    |    |    | *  | *  | 2  | *  |    |    |    |    |    |    |    |    |    |    | 4     |
| 1986    | *  |    | *  | *  | *  |    | *  | 1  |    |    |    |    |    |    |    |    | 8     |
| 1987    | 2  |    | *  |    | 8  | *  |    | *  |    |    |    |    |    |    |    |    | 14    |
| 1988    | *  |    |    | *  | *  | *  | *  | *  |    |    |    |    |    |    |    |    | 4     |
| 1989    | 8  |    | 19 | *  | *  | *  | *  | *  |    | 24 |    | 41 | 4  |    | 6  |    | 167   |
| 1990    | *  |    | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    | 1     |
| 1991    | 17 |    | *  |    |    |    |    | *  |    | 14 | 5  | 28 | 1  |    | 17 | 15 | 96    |
| 1992    | *  |    |    |    |    | *  |    |    | *  |    |    |    |    |    |    |    | 1     |
| 1993    | 18 |    |    |    |    |    |    | *  | *  | 21 | 4  | 37 | 1  |    | 6  | 8  | 95    |
| 1994    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| 1995    | 51 |    | *  |    |    |    |    |    | *  | 46 | 2  | 44 |    |    |    | 5  | 149   |
| 1996    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| 1997    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| 1998    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| 1999    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| 2000    | *  |    | *  |    |    | *  |    |    |    |    |    |    |    |    |    |    | 0     |
| 2001    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  | 2     |
| 2002    | *  |    |    |    |    | *  |    | *  |    |    |    |    | *  |    |    | *  | 2     |
| 2003    | 6  |    | *  | *  | 2  | *  | *  | *  |    | 7  | *  | 36 | *  |    | 7  | 2  | 70    |
| 2004    | 3  |    | 4  | *  | 1  |    | *  | *  |    | *  | *  | 42 | 5  | 2  | 7  |    | 70    |
| 2005    | 6  |    | 4  | *  | 2  |    |    | *  |    | 8  | *  | 35 | 5  | 3  | 3  | *  | 69    |
| 2006    | 20 |    | *  | *  | 5  |    |    | 5  |    | 3  |    | 24 | 5  | 2  | *  | *  | 70    |
| 2007    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0     |
| Average | 4  | 0  | 1  | 1  | 2  | 0  | 0  | 1  | 0  | 4  | 0  | 9  | 1  | 0  | 1  | 1  | 26    |

**Bass Strait Zone mean catch rates.**

| Year    | 37 | 38 | 41 | 42 | 43 | 44 | 45 | 46 | 50 | 51 | 52 | 53  | 54  | 55  | 56  | 57  |
|---------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1975    |    |    | *  |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1976    |    |    |    |    | *  |    |    |    |    |    |    |     |     |     |     |     |
| 1977    | *  |    | *  |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1978    | *  |    |    |    | *  |    |    |    |    |    |    |     |     |     |     |     |
| 1979    | *  |    | *  |    |    |    |    | *  |    |    |    |     |     |     |     |     |
| 1980    | *  |    | *  |    | *  |    |    |    |    |    |    |     |     |     |     |     |
| 1981    | 45 |    |    |    | *  |    |    |    |    |    |    |     |     |     |     |     |
| 1982    | *  |    |    |    |    |    |    | *  |    |    |    |     |     |     |     |     |
| 1983    | *  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1984    | *  |    | *  | *  | *  |    |    | *  |    |    |    |     |     |     |     |     |
| 1985    |    |    | *  | *  | 55 | *  |    |    |    |    |    |     |     |     |     |     |
| 1986    | *  |    | *  | *  | *  |    | *  | 29 |    |    |    |     |     |     |     |     |
| 1987    | 39 |    | *  |    | 64 | *  |    | *  |    |    |    |     |     |     |     |     |
| 1988    | *  |    |    | *  | *  | *  |    | *  |    |    |    |     |     |     |     |     |
| 1989    | 53 |    | 29 | *  | *  | *  | *  | *  |    | 43 | 0  | 53  | 64  | 0   | 71  |     |
| 1990    | *  |    | *  | *  |    |    |    |    |    |    |    |     |     |     |     |     |
| 1991    | 35 |    | *  |    |    |    |    | *  |    | 41 | 0  | 38  | 0   | 0   | 44  | 34  |
| 1992    | *  |    |    |    |    | *  |    |    | *  |    |    |     |     |     |     |     |
| 1993    | 38 |    |    |    |    |    |    | *  | *  | 41 | 42 | 48  | 106 | 0   | 46  | 64  |
| 1994    | *  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1995    | 24 |    | *  |    |    |    |    |    | *  | 28 | 18 | 38  | 0   | 0   | 0   | 37  |
| 1996    |    |    | *  |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1997    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1998    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 1999    | *  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |
| 2000    | *  |    | *  |    |    | *  |    |    |    |    |    |     |     |     |     |     |
| 2001    | *  |    |    |    |    |    |    |    |    |    |    |     |     |     |     | *   |
| 2002    | *  |    |    |    |    | *  |    | *  |    |    |    |     | *   |     |     | *   |
| 2003    | 52 |    | *  | *  | 53 | *  | *  | *  |    | 62 | *  | 101 | *   |     | 120 | 112 |
| 2004    | 55 |    | 52 | *  | 33 |    | *  | *  |    | *  | *  | 73  | 128 | 117 | 98  |     |
| 2005    | 40 |    | 43 | *  | 38 |    |    | *  |    | 50 | *  | 63  | 105 | 75  | 83  | *   |
| 2006    | 38 |    | *  | *  | 37 |    |    | 33 |    | 32 |    | 48  | 65  | 47  | *   | *   |
| 2007    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |
| Average | 39 | 53 | 47 | 76 | 52 | 81 | 39 | 49 | 50 | 44 | 72 | 58  | 87  | 80  | 75  | 67  |

#### 4. History of Management in the Tasmanian abalone fishery.

|      |   |
|------|---|
| 1962 | Minimum size limit (MSL) of 5 inches (127 mm) minimum shell diameter introduced.  |
| 1964 | MSL increased to 6 inches (152 mm).   |
| 1965 | MSL reduced to 5 inches.<br>Introduction of commercial abalone diving licenses.<br>All abalone to be landed live (no processing at sea).<br>Skippers of boats engaged in abalone fishing required to lodge monthly fish returns as part of their license conditions.  |
| 1966 | abalone processing factories required to record the number of persons from whom abalone were bought.  |
| 1967 | abalone divers required to carry a measuring device to measure the abalone before taking them.<br>Special penalty introduced for possession of undersized abalone at \$1 per fish.<br>abalone to be sold in live condition to registered processors only.   |
| 1968 | abalone catch returns were introduced. These recorded daily catches and effort by reporting block, and were lodged monthly by the skipper (not necessarily a diver) of an abalone fishing vessel. More than one diver's catch could be reported on a return. These returns replaced the general fish return on which earlier catches were reported.   |
| 1969 | License limitation introduced. Rapid expansion of the fishery led to this first attempt to control effort. Only divers fishing the previous year were licensed to fish in 1969. This figure (120 divers) was maintained in subsequent years.  |
| 1971 | Only licensed divers allowed to dive from a boat engaged in abalone fishing.  |
| 1972 | License transfer from a retiring diver to his nominee allowable on grounds of health problems.<br>Annual license fees calculated as 1.5% of the mean of the previous three years value of annual production.<br>An additional five licenses were issued to divers living in the Furneaux Group. These divers were restricted to fishing the Furneaux Group, but the other 120 divers were not prevented from fishing there.<br>Penalties for breaches of regulations in relation to abalone fishing increased.<br>Permit to transfer licenses between divers revoked. |
| 1974 | License transfer from a retiring diver to his nominee permitted.<br>Computerised catch records started from July 1974.  |
| 1979 | Penalties for breaches of regulations in relation to abalone fishing increased, with special penalties rising to \$2 per fish.<br>Identification cards for divers introduced.   |
| 1982 | Penalties for breaches of regulations in relation to abalone fishing increased, with special penalties rising to \$10 per fish.<br>Catch restricted by marketing crisis: processors limit divers to 24 tonnes pa.   |
| 1983 | Penalties for breaches of regulations in relation to abalone fishing increased.<br>Easing of market difficulties sees lifting of processor applied catch restrictions.  |
| 1985 | Individual transferable quota (ITQ) and a total allowable catch (TAC) were  |

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|      | <p>introduced. Each of the 120 general license divers were allocated 28 units of quota, the Furneaux Group divers 20 units: therefore there were 3460 units. For 1985, the quota unit was set at 1100 kg <i>i.e.</i> the TAC was 3806 tonnes. – This amount was derived from an estimate of average catches, with a 10% bonus granted by the Minister to compensate for any financial difficulties caused by the new system.</p> <p>License fees were increased to 2.5% of the value of the annual landed catch, for each quota unit held.</p> <p>Quota unit transfers between Furneaux divers and non-Furneaux divers were prohibited.</p> <p>The 120 Tasmanian mainland divers were prohibited from diving in the Furneaux group.</p> <p>Divers were required to own at least 16 units, but could accumulate no more than 80.</p> <p>The catch (kg) per quota unit was determined by the Liaison Committee based upon advice from the government researchers.</p> <p>Catch docket recording the catch weight landed by individual divers were introduced.</p> |
| 1986 | <p>Annual license fees set at 5% of value of annual landed catch.</p> <p>The catch per ITQ was reduced to 1000 kg (9% reduction) <i>i.e.</i> TAC was 3460 tonnes.</p>   |
| 1987 | <p>MSL increased to 132 mm from 127 mm.</p> <p>The catch per ITQ was reduced to 950 kg (5% reduction) <i>i.e.</i> TAC was 3287 tonnes.</p>  |
| 1988 | <p>The catch per ITQ was reduced to 855 kg (5% reduction) <i>i.e.</i> TAC was 2958.3 tonnes.</p> <p>The minimum legal weight for abalone meats was set at 90 g.</p>   |
| 1989 | <p>The catch per ITQ was reduced to 600 kg (30% reduction) <i>i.e.</i> TAC was 2076 tonnes.</p> <p>A fishery for abalone in Bass Strait was held in April, with a MSL of 110 mm and a maximum size limit of 132 mm. Each diver was limited to 2.4 tonnes, with 198 tonnes caught. The fishery was free of fees, and while only licensed abalone divers could participate, was held to be distinct from the Tasmanian abalone fishery (hence the maximum size limit).</p> <p>The minimum meat weight regulation of 90g was amended to apply only to blacklip abalone.</p>  |
| 1990 | <p>MSL for blacklip abalone on south and west coasts between the Wild Wave River (north of Sandy Cape) and Whale Head increased to 140 mm.</p> <p>MSL for greenlip in Furneaux Group waters increased to 140 mm.</p> <p>Furneaux Group boundary removed. The Furneaux Group divers were issued with an extra 8 units each, which could only be fished by the divers themselves and were not transferable. This increased the number of units in the fishery to 3500, and the TAC to 2100 tonnes.</p>  |
| 1991 | <p>A fishery for abalone in Bass Strait was held in May, with a MSL of 118 mm. The TAC was 110 tonnes, with a fee of \$1.40 per kg of quota.</p> <p>The license system was restructured: the diving entitlement was uncoupled from the entitlement to hold quota units and the lower and upper limits on the amount of units held was abolished.</p>  |
| 1992 | <p>Minimum meat weight for greenlip was set at 70 g.</p> <p>Compliance catch database (SEALSPROD) that enabled auditing of catch</p>  |

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|      | from vessel to factory introduced by DPIF.   |
| 1993 | <p>A fishery for abalone in Bass Strait was held in May and June, with a MSL of 110 mm. The TAC was 100 tonnes, with a fee of \$5.00 per kg of quota. Minimum meat weight regulation amended to 90g for all abalone other than greenlip.</p> <p>Penalties reviewed and significantly increased, with the option of prison terms for serious and repeat offenders. Special penalties increased to \$50 per fish.</p>  |
| 1994 | <p>Quota owners were given the choice of continuing with their annual abalone licenses or entering into a Deed of Agreement that applied for 10 years with the right of renewal for perpetuity. 90% of owners chose the Deed of Agreement.</p> <p>The Deed of Agreement set a fee structure that included both management costs and return to the community, based upon an increasing (but non-linear) proportion of beach price. At \$6/kg, no fees were payable, at \$35/kg fees were 10% at and at \$200/kg, fees were 33% of beach price.</p>  |
| 1995 | <p>A fishery for abalone in Bass Strait was held in May and June, with a MSL of 110 mm. Only 12 commercial divers (<i>i.e.</i> non-abalone) participated. While the TAC was 100 tonnes, only 21 tonnes was taken. The fee was \$10.00 per kg of quota.</p> <p>Another Bass Strait fishery was held in November, with both abalone and commercial divers participating. The MSL was 100 mm, and the TAC was set at 140 tonnes, with a fee of \$10/kg. Only 106 tonnes was taken before the fishery was closed. It was maintained by divers that a very high proportion of the fishable biomass had been taken, and that continuing the fishery could affect the sustainability of stocks.</p>   |
| 1996 | <p>The <i>Living Marine Resources Management Act 1995</i> was introduced. Trigger points were introduced by DPIF to initiate a management response if catch and catch rates changed by a pre-determined quantity with respect to those from two earlier reference periods.</p>   |
| 1997 | <p>The TAC was increased to 2520 tonnes (720 kg per quota unit). Differential in beach price between east coast and west coast blacklip first appears – is initially \$2.00.</p>   |
| 1998 | <p>The first abalone Fishery Management Plan was introduced. Among changes that it introduced were catch monitoring, which included:</p> <ol style="list-style-type: none"> <li>1. Pre-fishing reporting by divers,</li> <li>2. Post-fishing reporting of catch by divers and processors,</li> <li>3. Processors required to maintain a daily balance of stock in, stock out and stock on hand,</li> <li>4. Processors to report prior to movement of stock out and on receipt of stock,</li> <li>5. Reports to be made by telephone, where information was immediately available to Compliance Audit Unit and Tasmania Police.</li> </ol> <p>For several years, greenlip abalone had attracted premium beach prices, causing a diversion of effort to that species. To enhance protection, a number of management changes were made:</p> <ul style="list-style-type: none"> <li>• For management purposes, the greenlip fishery was subdivided into two regions: the Furneaux Group and the remainder (North West, North East and King Island)</li> </ul> |

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|      | <ul style="list-style-type: none"> <li>• MSL was raised to 140 mm state-wide (except the North West, which was left at 132 mm),</li> <li>• The annual catch for the Furneaux Group was capped at 42 t based on estimates of sustainable yield. This cap was managed monthly, so that where more than one twelfth of the annual cap (3.5 t) was taken in any month, the Minister could close the fishery until the next month.</li> </ul> <p>Within the Furneaux Group, several other rules were introduced to reduce effort:</p> <ul style="list-style-type: none"> <li>• Divers could only work two days per week. Originally, the days were fixed, but because this forced divers to work in often hazardous conditions, divers were allowed to nominate which two days they could work.</li> <li>• A 200 kg/day bag limit was introduced, as was a 200 kg/day landing limit. This effectively meant that catch was not held on motherships overnight.</li> <li>• These rules were repealed in 1999.</li> <li>• The greenlip catch from the remainder of the State was to be limited to 106 tonnes.</li> <li>• Because the Department was unable to monitor catch closely enough, the monthly Furneaux Group catch usually overran its limit, and the fishery there was closed in August when the regional cap was met. The greenlip cap in the rest of the State was also overrun.</li> </ul> <p>Vessels over 10 m landing abalone at Smithton or Stanley had to make a prior report to the CAU reporting service so that Tasmania Police could inspect their catch.</p> <p>Fixed trigger points were abandoned as an assessment strategy as rising catch and catch rates indiscriminately fired triggers. Assessments have since used catch and catch rate trends to monitor stock levels.</p> <p>A new compliance catch database (LMM/QMS) introduced by DPIWE</p> |
| 1999 | <p>MSL for greenlip raised to 140 mm in North West, and 150 mm for the remainder. This applied to the commercial fishery only, the MSL for recreational fishers remaining at 140 mm.</p> <p>The greenlip fishery was divided into east (Furneaux Group and North East) and west (King Island and North West) with quarterly caps of 17 tonnes and 20 tonnes respectively. Overrun of caps led to a closure of the greenlip fishery in October.</p> <p>Within the Furneaux Group, Block 35 was closed to fishing between 1 October and 31 March to protect spawning abalone.</p>   |
| 2000 | <p>The blacklip fishery was divided into two East and West management zones with boundaries at Whale Head and Port Sorell. The greenlip fishery was managed separately. Eastern blacklip units were set at 340 kg (TAC 1190 t), Western units at 400 kg (1400 t) and greenlip units at 40 kg (140t), with a TAC for the whole fishery of 2730 tonnes.</p> <p>Size limits for blacklip abalone remained unchanged. The zone boundaries meant that the Western Zone had a size limit of 140 mm from Whale Head to the Wild Wave River and 132 mm from there to Port Sorell.</p> <p>Following egg-per-recruit studies by researchers, MSL for King Island greenlip was raised to 155 mm, 140 mm for North West and 145 for both the North East and the Furneaux Group.</p>   |

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|      | <p>The Block 35 (Franklin Sound - Furneaux Group) greenlip catch was capped at 20 tonnes.</p> <p>Catch were reported on a smaller spatial scale with the introduction of sub-blocks state-wide.</p> <p>Owners of fishing license (abalone dive) were allowed to hold more than one license and allow others to dive those licenses as supervisors.</p>  |
| 2001 | <p>The Northern Zone (between Arthur River in the west and Musselroe Point in the east) for blacklip abalone was established, with a MSL of 127 mm except between Woolnorth Point and the Arthur River, where 132 mm prevailed. Catch per unit was 80 kg, with a TAC of 280 t. Because the Northern Zone covered coast that was previously included in the two other blacklip zones, catch for those zones was proportionally reduced, with a further allowance for declining Eastern Zone stocks. The TAC for the West was set at 1260 t (360 kg/unit), and the East at 1120 t (320 kg/unit). The greenlip TAC remained at 140 tonnes, so production from the entire fishery was 2800 t, or 800 kg/unit.</p> <p>In association with establishment of Northern Zone, research monitoring areas were set aside at the Inner Sister, Swan Island, Waterwitch Reef, and the Doughboys.</p> <p>MSL's for recreational divers were changed to 132 mm for blacklip state-wide, and 145 mm for greenlip in all areas except the North West, which remained at 140 mm.</p> <p>The regional catch for the greenlip fishery was limited in three of the main regions. The North West catch was capped at 40 t, the North East at 30 t, while the Furneaux Group catch remained fixed at 42 t. Catch from King Island and the Bass Strait islands (Kent, Curtis, Hogan Groups) was not capped.</p> |
| 2002 | <p>MSL for Eastern Zone was increased to 136 mm.</p> <p>MSL for greenlip on King Island was reduced to 150 mm.</p> <p>MSL for greenlip in the North West was increased to 145 mm.</p> <p>Eastern Zone TAC reduced to 857.5 t (245 kg/unit).</p> <p>Western Zone TAC remained 1260 t (360 kg/unit)</p> <p>Northern Zone TAC remained 280 t (80 kg/unit)</p> <p>Greenlip TAC remained 140 t (40 kg/unit)</p> <p>Production for the whole fishery was set at 2537.5 t (725 kg/unit).</p> <p>Catch from the Actaeons (sub-blocks 13C, D and E) was capped at 350 t, managed firstly as a half-yearly cap, then quarterly. The fishery there was closed in September and then mid-October when those caps were reached.</p>  |
| 2003 | <p>A Bass Strait blacklip zone (TAC 70 tonnes (20 kg/unit), MSL of 114 mm) was superimposed over the Northern Zone in central Bass Strait and part of the Furneaux Group. Its purpose was to enable the catching of abalone smaller than allowed by the Northern Zone size limit. The Bass Strait Boundaries were set at Cowrie Point in the west and Anderson Bay in the east. The Flinders Island boundaries were on an unnamed point north of Settlement Point on the western side of the island (40°00'36.32") and Foochow Inlet on the east.</p> <p>Eastern Zone TAC remained 857.5 t (245 kg/unit).</p> <p>Western Zone TAC remained 1260 t (360 kg/unit)</p>   |

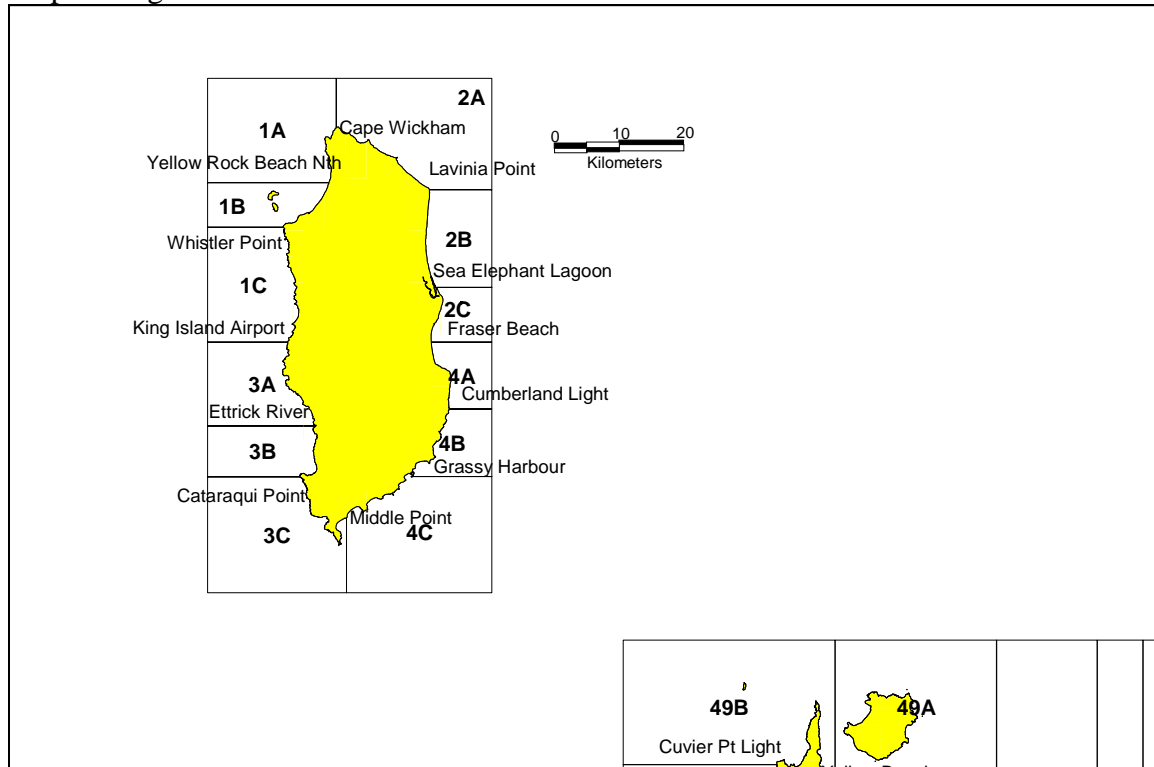
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|      | <p>Northern Zone TAC remained 280 t (80 kg/unit)<br/> Greenlip TAC remained 140 t (40 kg/unit)<br/> Bass Strait Zone TAC set at 70 t (20 kg/unit)<br/> Fishery production was set at 2607.5 t (745 kg/unit) state-wide.<br/> Blacklip catch from Block 5 (Northern Zone) was capped at 100 t.<br/> MSL for Western Zone between the Wild Wave River and Arthur River was increased to 136mm from 132mm.<br/> abalone taken from Western Zone subject to upper size limit of 160 mm by canners and live market buyers. Note that this was not rigidly enforced and market sampling showed most samples contained many abalone over this size.</p>  |
| 2004 | <p>Eastern Zone TAC reduced to 770 t (220 kg/unit)<br/> Western Zone TAC remained 1260 t (360 kg/unit)<br/> Northern Zone TAC remained 280 t (80 kg/unit)<br/> Greenlip TAC reduced to 129.5 t (37 kg/unit)<br/> Bass Strait Zone TAC remained 70 t (20 kg/unit)<br/> Fishery production was set at 2509.5 t (717 kg/unit) state-wide.<br/> The greenlip TAC reduction affected the North West only, where the annual cap was reduced by 10 t to 30 t.<br/> October-March closure for Franklin Sound greenlip fishery abolished. Block 35 cap reduced from 20 t to 15 t.</p>  |
| 2005 | <p>Eastern Zone TAC remained 770 t (220 kg/unit)<br/> Western Zone TAC remained 1260 t (360 kg/unit)<br/> Northern Zone TAC remained 280 t (80 kg/unit)<br/> Greenlip TAC reduced to 122.5 t (35 kg/unit)<br/> Bass Strait Zone TAC remained 70 t (20 kg/unit)<br/> Fishery production was set at 2502.5 t (715 kg/unit) state-wide.<br/> The greenlip TAC reduction affected the North East only, where the annual cap was reduced by 7 t to 23 t.<br/> Team diving (sharing catch from one quota unit by two divers) was introduced to legitimise the practise of divers catching abalone for others when they held no quota to which their catch could be assigned. Team dive docketts were submitted by teams, but not computerised.<br/> High grading (discarding large abalone in the catch from the deck) prohibited.<br/> Cauling prohibited.<br/> Introduction of cancellation reports where a prior reported trip is cancelled.<br/> Introduction of single (blacklip) zone fishing provisions.<br/> Overcatch provisions introduced to cover unintentional underestimation of catch weight.<br/> In Victoria in December, ganglioneuritis detected on two land-based (Portland and Port Fairy) and two offshore (Westernport) aquaculture sites.</p> |
| 2006 | <p>Eastern Zone TAC remained 770 t (220 kg/unit)<br/> Western Zone TAC remained 1260 t (360 kg/unit)<br/> Northern Zone TAC remained 280 t (80 kg/unit)<br/> Greenlip TAC remained 122.5 t (35 kg/unit)<br/> Bass Strait Zone TAC remained 70 t (20 kg/unit)<br/> Fishery production was set at 2502.5 t (715 kg/unit) state-wide.</p> <p>On 1 January 2006, interim reduction in MSL for Perkins Bay greenlip area</p>   |

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|      | <p>(Blocks 47, 48A), from 145 mm to 140 mm.</p> <p>On 20 September 2006, MSL for Bass Strait Zone in Blocks 41-46 (North Coast) reduced from 114mm to 110mm.</p> <p>On 1 November 2006, MSL for Eastern Zone was increased to 138mm from 136mm. MSL for greenlip abalone in Perkins Bay was reduced to 132mm from 140mm, with annual catch capped at 20t.</p> <p>Block 30 entirely closed to commercial abalone fishing and partially closed (except sub-block 30A) to recreational abalone fishing. The bag limit for recreational fishers in sub-block 30A reduced to 5 abalone per day.</p> <p>May 2006: Victorian ganglioneuritis outbreaks reported from wild stocks adjacent to land-based aquaculture site at Port Fairey. As a precautionary measure, from 16 August 2006, the Tasmanian wild fishery in Bass Strait closest to the Victorian coast was closed to abalone fishing, initially for three months but then extended to 28 February 2007. The closure was for waters within latitudes 39° 12' S and 39 ° 33' S, and longitudes 146 ° to 147 ° 35' (Blocks 51 to 56, and part of Block 57, including Wright Rock and Endeavour Reef). The taking of abalone in Tasmanian waters from vessels used in the Victorian fishery was prohibited.</p> |
| 2007 | <p>Eastern Zone TAC remained 770 t (220 kg/unit)</p> <p>Western Zone TAC remained 1260 t (360 kg/unit)</p> <p>Northern Zone TAC remained 280 t (80 kg/unit)</p> <p>Greenlip TAC remained 122.5 t (35 kg/unit)</p> <p>Bass Strait Zone TAC remained 70 t (20 kg/unit)</p> <p>Fishery production was set at 2502.5 t (715 kg/unit) state-wide.</p> <p>Bass Strait fishery remained closed in 2007.</p>   |

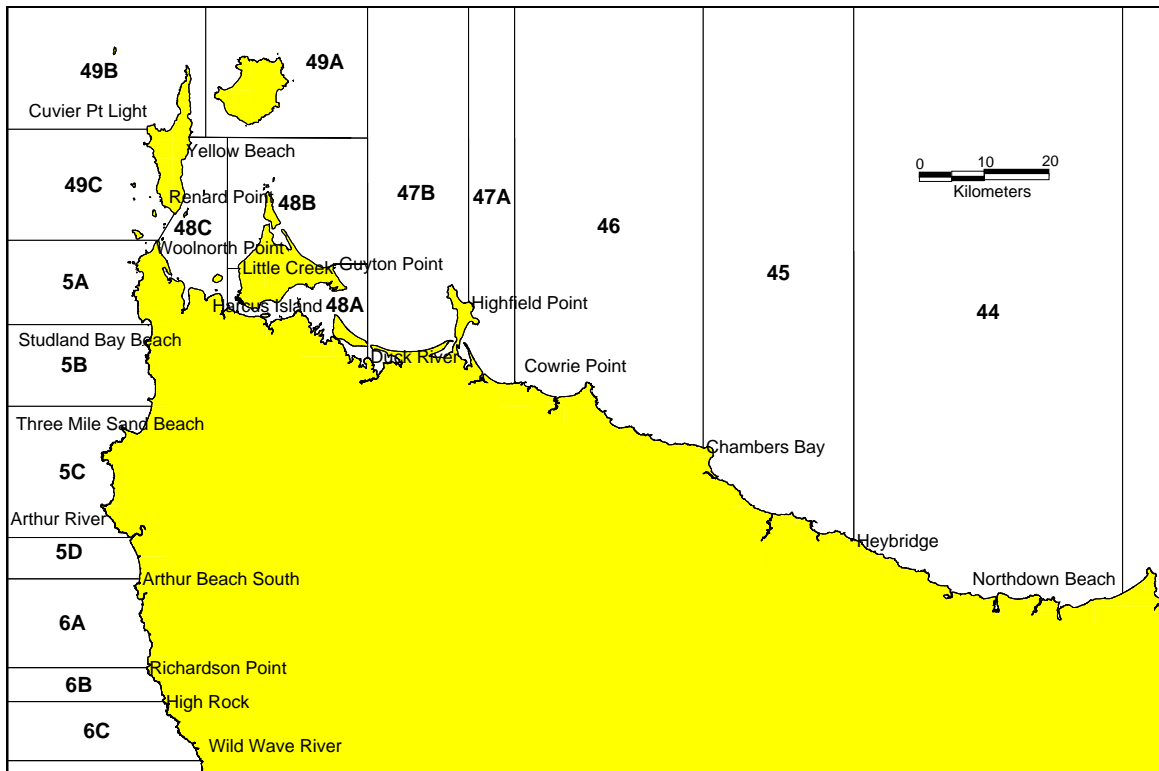
## 5. Maps of catch-reporting blocks and sub-blocks.

It is not intended that these maps be used for any purpose other than identifying the position of sub-blocks mentioned in this report.

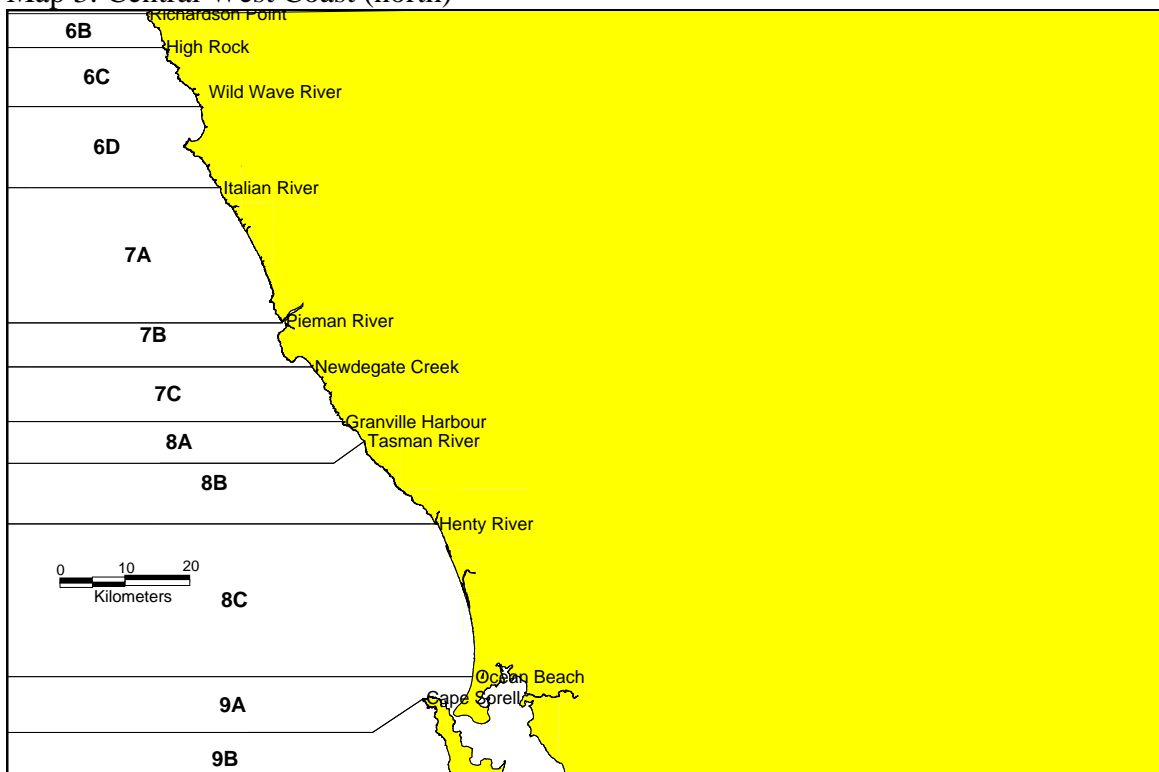
Map1: King Island



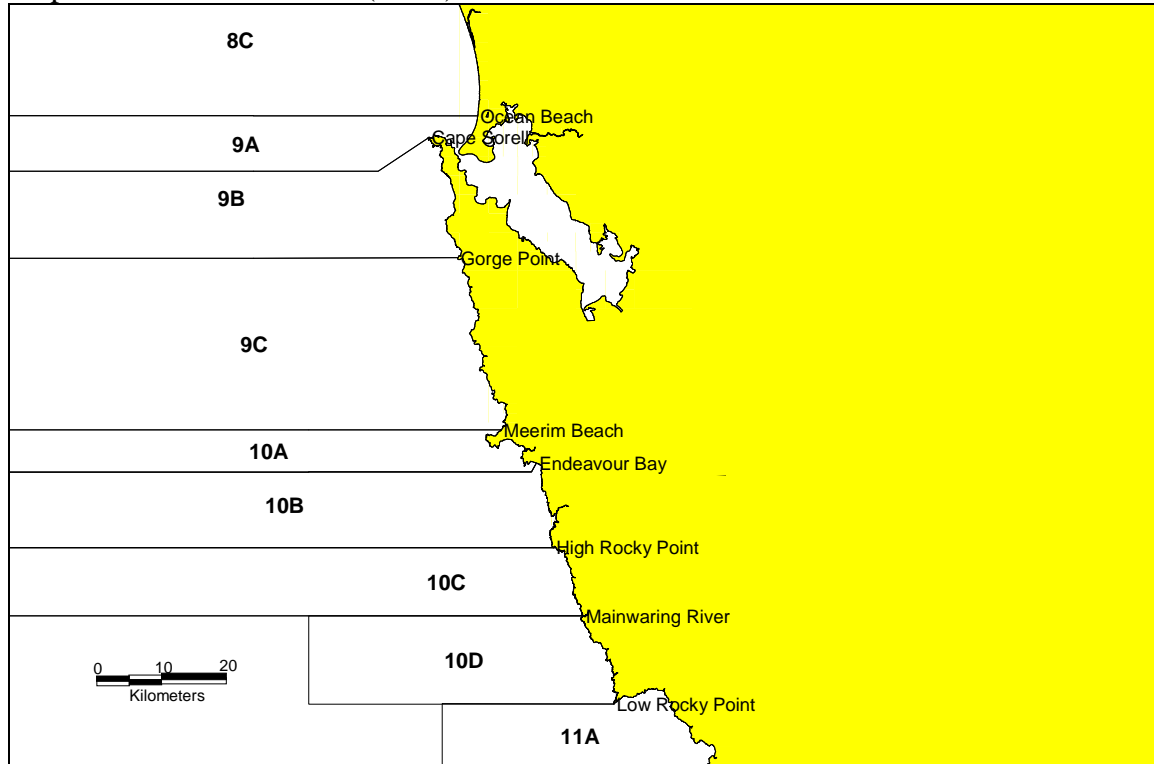
Map 2: North West Tasmania



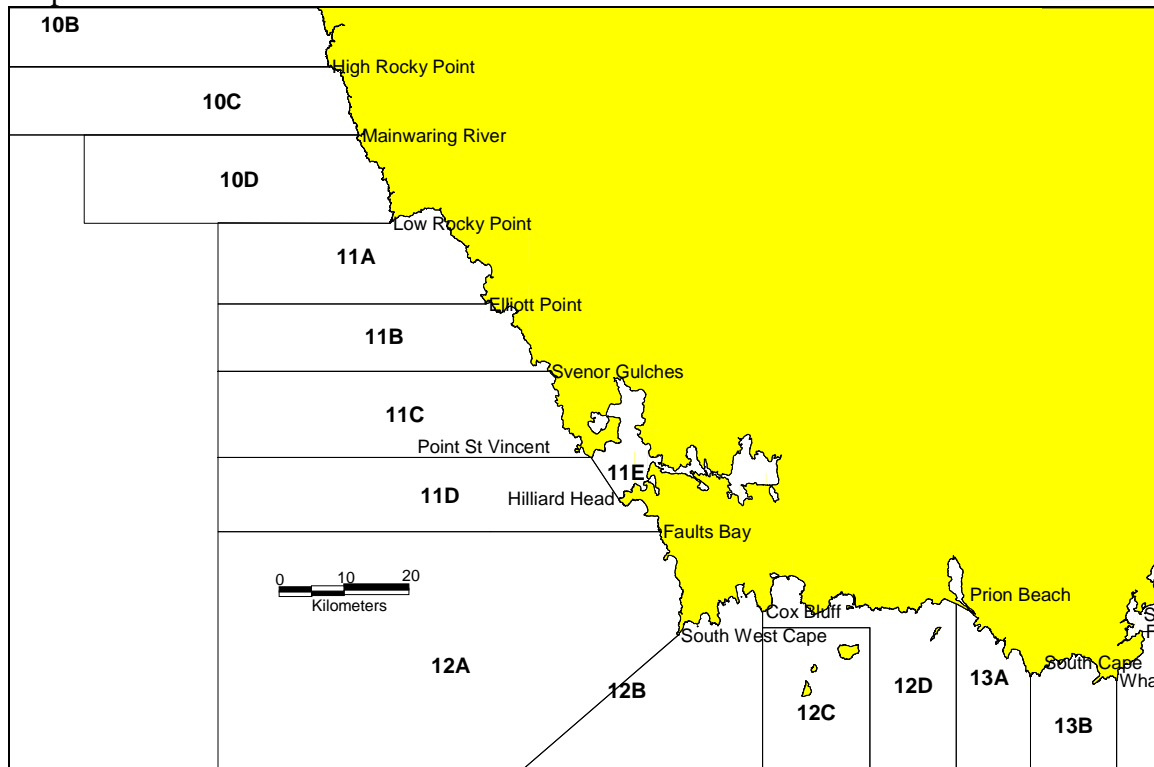
Map 3: Central West Coast (north)



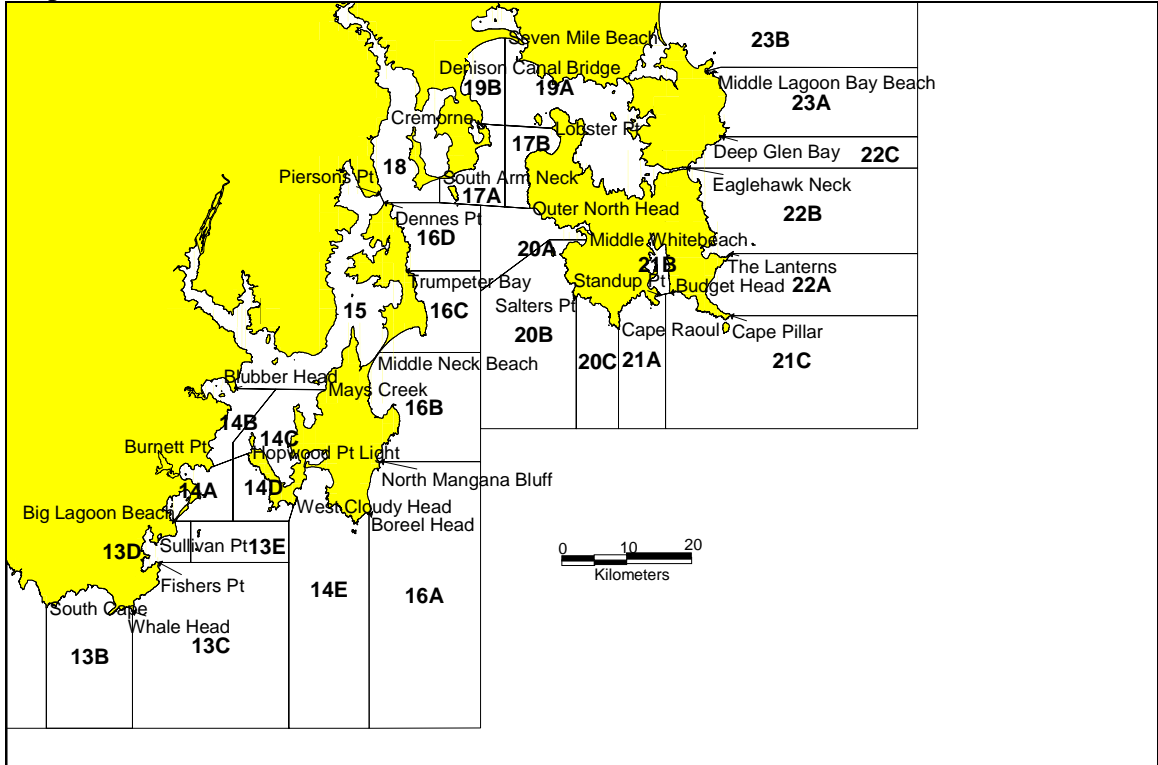
Map 4: Central West Coast (south)



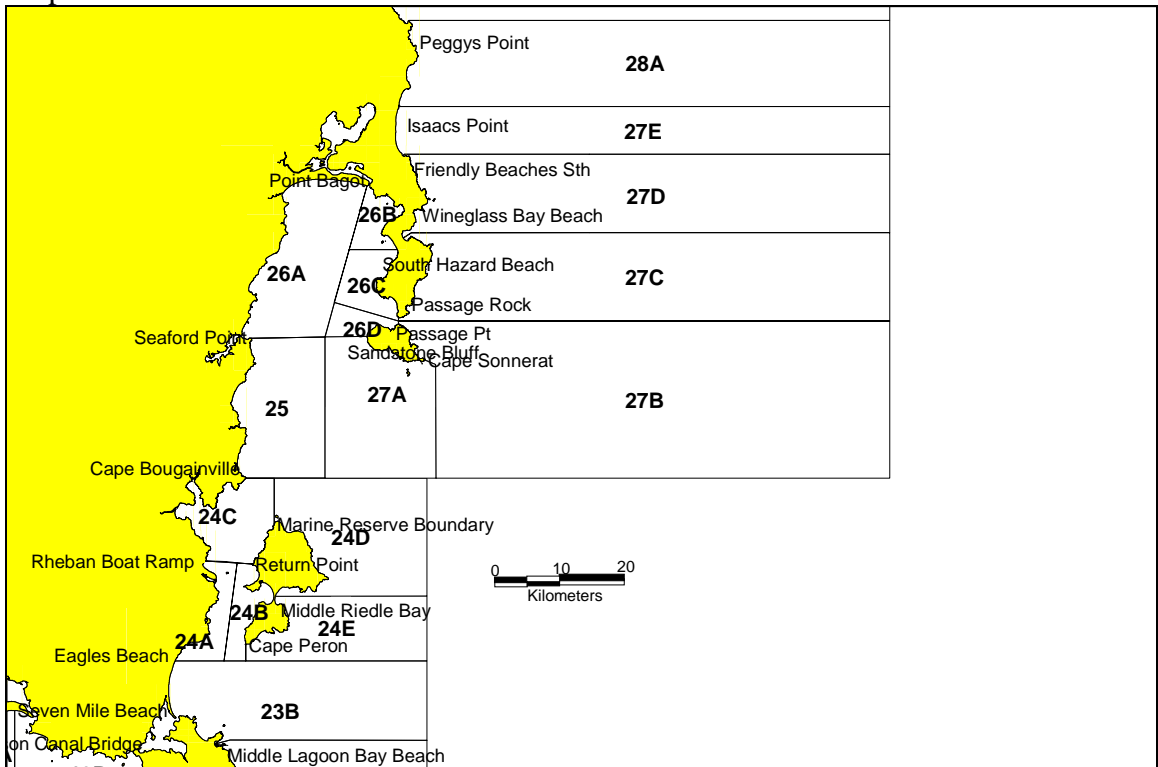
Map 5: South West Tasmania



Map 6: South East Tasmania

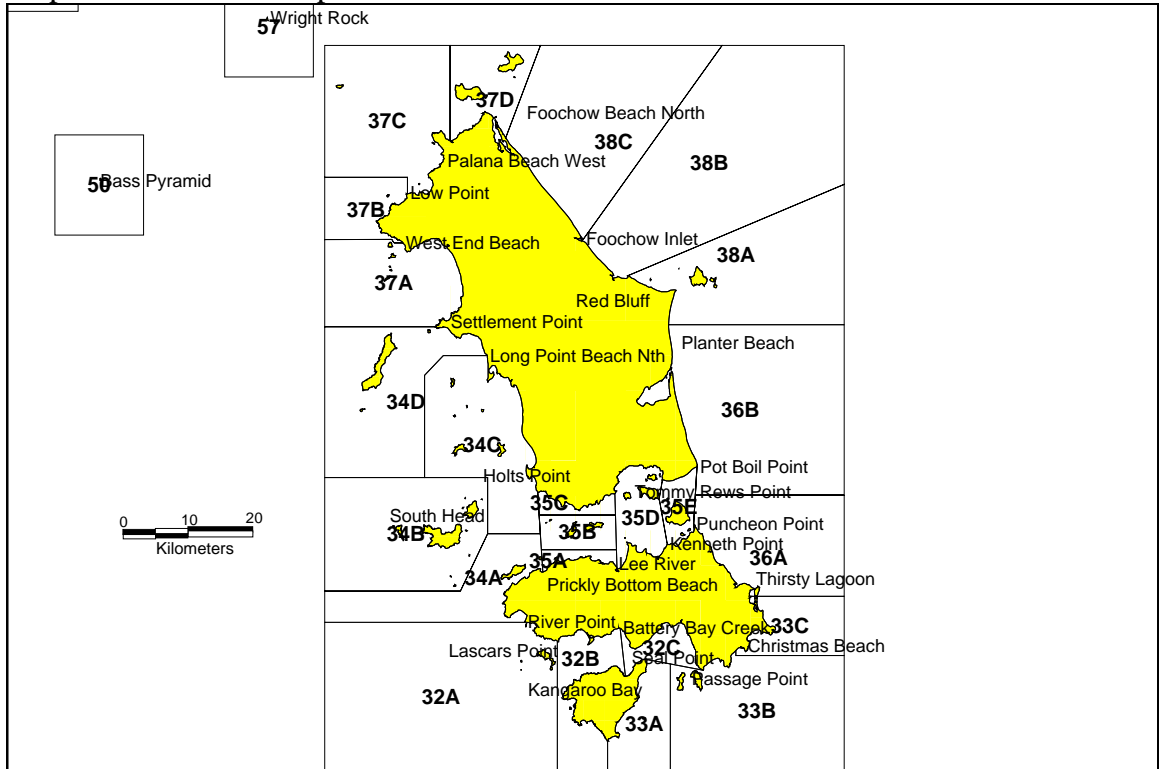


Map 7: Lower East Coast

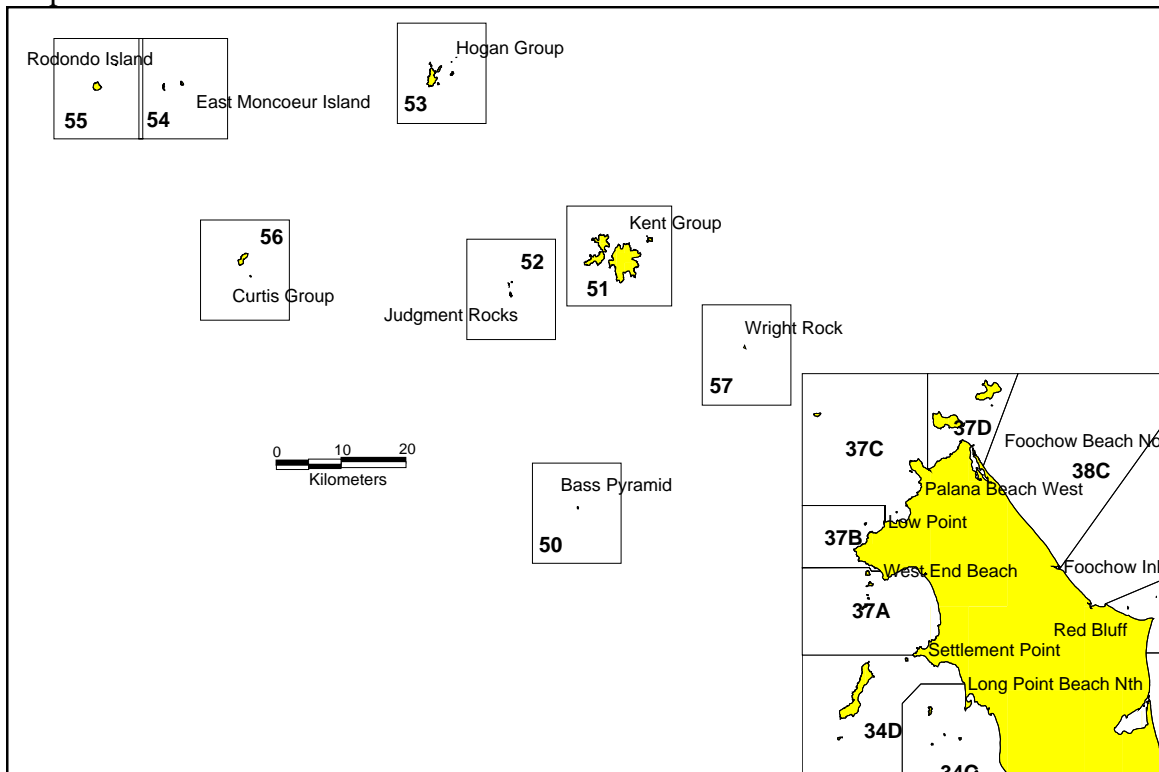




Map 10: Furneaux Group

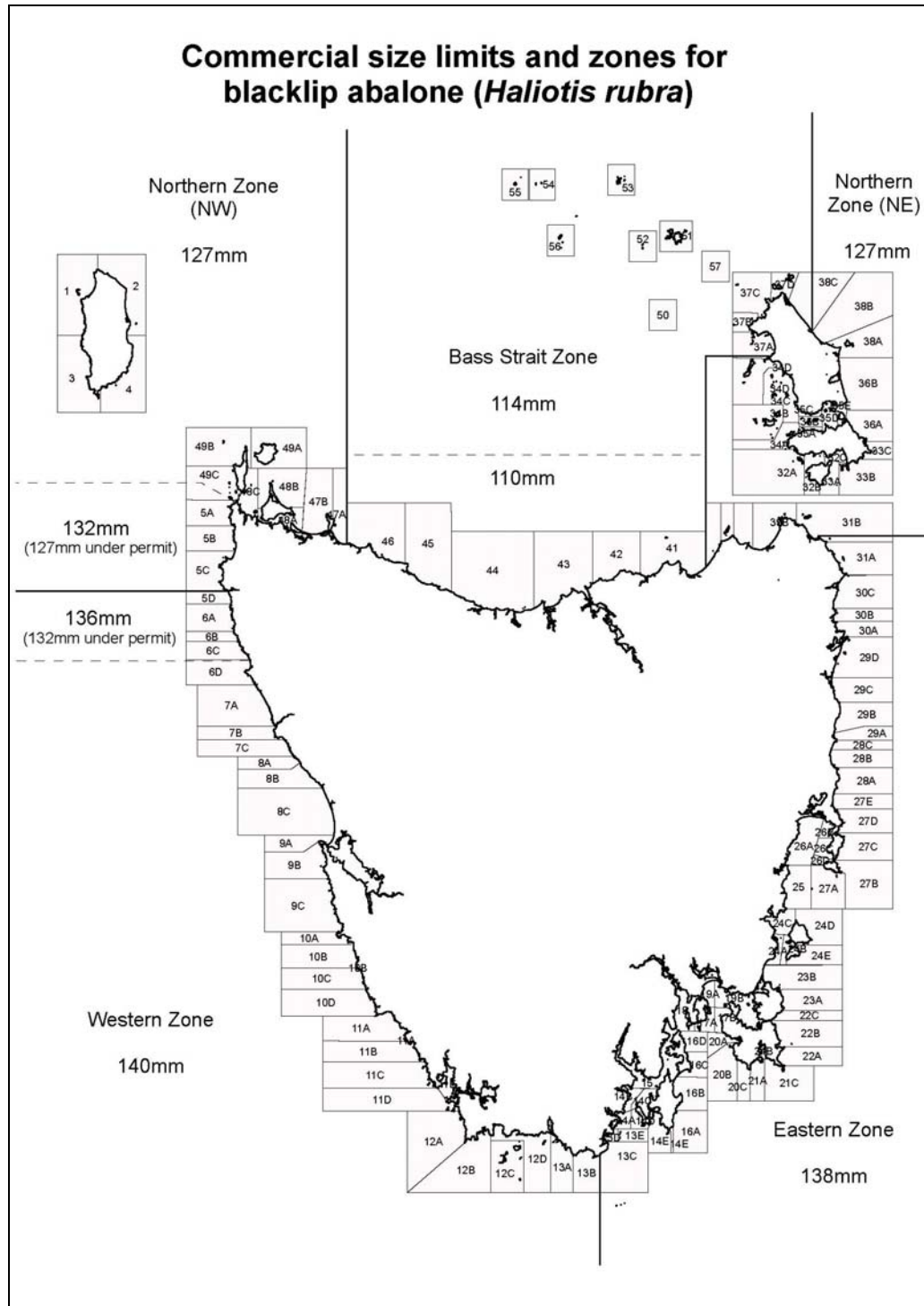


Map 11: Bass Strait Islands

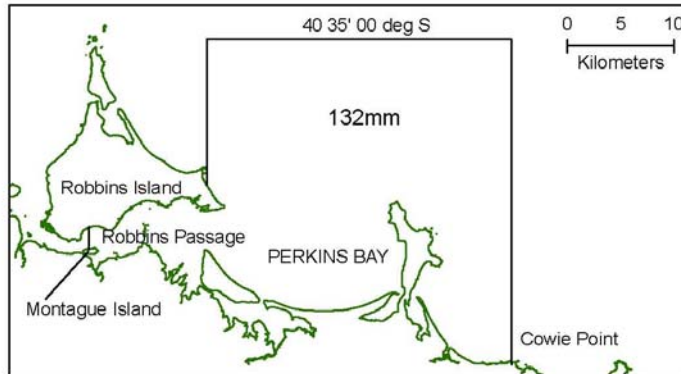


## 6. Commercial Size Limits and Zones for blacklip and greenlip, 2008

A management rule introduced in 2007 enabled abalone to be taken at reduced size limits under special permit in north-west Tasmania in 2008. All other size limits remained unchanged from previous years



### Commerical size limits for greenlip abalone (*Haliotis laevis*)



**King Island**

- All fish taken from King Island waters 150mm or greater.

**Perkins Bay**

- A 132mm size limit applies in Perkins Bay which is defined by waters which are enclosed with the following boundaries:  
 - N/S of Montagu Island in Robbins passage to Cowrie Pt. and to a northward extent of 40 35' 00 deg S. to a western extent of 145 02' 52 E.

**All other waters**

- A 145 mm size limit exists for all other state waters for the take of greenlip abalone.

