

Abalone Managed Fishery

MANAGEMENT OVERVIEW

The Abalone Managed Fishery exploits three abalone species: Greenlip abalone (*Haliotis laevigata*), brownlip abalone (*Haliotis conicopora*) and Roe's abalone (*Haliotis roei*). The large greenlip and brownlip abalone are confined to the lower south-west and south coasts of the State, while Roe's abalone are found in commercial quantities from the South Australian border to Shark Bay, although they are not uniformly distributed throughout this range.

Prior to 1 April 1999, the fishery was divided into three zones. In Zone 1, licence holders took greenlip, brownlip and Roe's abalone east of Shoal Cape. In Zone 2, licensees took the same species between Shoal Cape and Busselton jetty. In Zone 3, divers were only licensed to take Roe's abalone.

The management arrangements in place limited entry into the fishery and imposed minimum legal shell sizes, total allowable catches in each zone and individual quotas on individual licence holders. Special rules also applied to commercial fishers who fished in the metropolitan area of the fishery (Moore River to Cape Bouvard).

On 31 March 1999 a major amendment to the Abalone Managed Fishery management plan was implemented. The notable changes brought about by the amendment included a change to the licensing period, with the result that all licence holders now operate within the same licensing period, i.e. 1 April in any year to 31 March in the following year. Also, 'zonal management' changed to 'area management', with the number of managed areas increasing from three to eight.

Each area is allocated an area catch limit, with the sum of the combined area catches equal to the total allowable catch (TAC) for the fishery. Each managed fishery licence is endorsed with a number of tradeable units of entitlement to a specific area, which may be temporarily traded between existing licence holders or permanently sold to existing or new licence holders. Each licence in the fishery must be permanently endorsed with a minimum unit holding (800 units for Roe's abalone and 450 units for greenlip/brownlip abalone). Following implementation of the amendment to the management plan, one unit of entitlement became equivalent to 5 kg of abalone in any area for the 1999 quota year.

The new arrangements also mean that commercial divers fishing in the metropolitan area must now cease fishing two weeks prior to the commencement of the recreational abalone fishing season and must not fish at

all during the weeks that span the season. However, fishing can recommence on the Monday following the closure of the recreational fishing season. (Fishing on weekends and public holidays remains prohibited.)

Divers and processors are required to provide daily catch and disposal records with details of all abalone landed and consigned in Western Australia to facilitate catch monitoring and enforcement. Processors are also required to lodge returns which provide Fisheries WA with details of all abalone sold.

A combined management/research and industry meeting was held in February 1999 to discuss management and research issues of concern to Fisheries WA and members of the Abalone Managed Fishery and industry. A similar meeting is planned for the 1999/2000 licensing year.

The Abalone Management Advisory Committee (AbMAC) met eight times during 1998/99. Chaired by Mr Ian Taylor, the MAC provides recommendations to the Minister for Fisheries on matters relevant to the Abalone Managed Fishery. It also publishes a newsletter for public distribution outlining AbMAC business.

The first Abalone Overview document was published in November 1998. A second edition describing the significant changes to management will be released in the current year.

COMPLIANCE AND COMMUNITY EDUCATION OVERVIEW

Compliance levels in the commercial sector have generally been good during the past year, with reports of breaches of management rules in 1998/99 decreasing to one, which related to a quota violation.

However, poaching activity by unlicensed operators running illegal commercial operations was again evident. Strategies employed by the agency over the past few years, which include focusing the Special Investigations Section on this particular problem, have resulted in a number of successful abalone poaching apprehensions. One dedicated operation, codenamed 'Singapore Noodle', and four secondary operations have so far resulted in nine persons being convicted of a total of 24 offences resulting in \$500,000 in fines and penalties.

The media attention given to these high fines and penalties has ensured that the general public is aware of the activities of fish thieves, and serves as an effective deterrent to other thieves.

The development of a uniform national approach to compliance monitoring of the abalone industry by fisheries agencies around Australia will also assist in addressing this problem.

The National Docketing System is being trialled for abalone across all abalone-producing States, however it is only partially in operation in Western Australia until such time as amendments to the *Fish Resources Management Act and Regulations* are in place.

RESEARCH OVERVIEW

Basic research monitoring for the three major abalone stocks is undertaken annually utilising industry data from the quota records and the CAESS records. In each zone, the fishing effort required to achieve the catch quota set is examined annually to ensure that the quota level is sustainable.

Specific research projects include biological studies and fishery-independent surveys on greenlip abalone in Zone 2 (concluded in 1997/98), and detailed biological research on the growth, movement, mortality and genetics of the Roe's abalone stocks along the west coast (Zone 3), concluded at the end of 1998/99.

The following status reports summarise the research findings for each zone of this fishery.

Abalone Zone 1 Status Report

Main Features

Stock assessment complete:

Yes

Exploitation status:

Fully exploited

Breeding stock levels:

Greenlip - adequate, but at risk

Brownlip - adequate

Previous catch and effort projections for year 1998:

540-635 days to catch total quota:

West of Point Culver	100.5 tonnes
	(whole weight)
	(greenlip and brownlip)

East of Point Culver	8.25 tonnes
	(whole weight)

Catch and effort current season (1998):

669 diver days to take catches of:

West of Point Culver	100.4 tonnes
East of Point Culver	0.04 tonnes

Estimated annual value (to fishers) for year 1998:

\$4 million

Catch and effort projection next year (1999):

540-670 diver days (acceptable range based on past seven years) to take catches of:

West of Point Culver	100.5 tonnes (quota)
	(whole weight)

continued over

East of Point Culver	8.25 tonnes (quota)
	(whole weight)

Recreational component (1998):

Unknown; believed to be less than 5% of commercial catch

Boundaries and Access

Zone 1 extends from the WA/SA border to Shoal Cape. There are six divers licensed to take greenlip, brownlip and Roe's abalone.

The quota period in Zone 1 was 1 April 1998 to 31 March 1999. (Note: As the bulk of the catch is taken early in the 'quota year', the data for the fishery is now, for simplicity, recorded against the nearest calendar year when most of the catch is taken. For example, for the current 1998/99 quota period, most of the catch was taken in 1998, therefore the data will be recorded against 1998.)

Annual Production

Main fishing method

Diving.

Landings

Catches currently are controlled by quotas, with the individual quota in Zone 1 for the 1998 quota year being 6.2 tonnes (meat weight) west of Point Culver (maximum 5 tonnes greenlip). Zone 1 divers have an additional quota of 500 kg from the area east of Point Culver. The Zone 1 greenlip catch was 82.5 tonnes (whole weight) and brownlip catch was 17.9 tonnes (whole weight) for the 1998 season (Zone 1 Abalone Table 1).

Fishing effort

Total effort in Zone 1 for 1998 was 669 days for a total of 2,516 diver hours. This was marginally greater than the range of effort predicted for 1998, which was 540-635 days.

Catch rate

The greenlip catch rate in 1998 was 123 kg/diver day, which was similar to the catch rate in 1997, which was 122 kg/diver day.

Stock Assessment

Greenlip: Evidence for a potential decline in stock abundance is available from two sources: firstly, a long-term decline in meat weights which is consistent across all the main producing grids, and is backed up by similar results from long-term individual licensee data, and secondly, local declines in nominal catch per unit effort from two of the six most productive fishing grids. Given the generally perceived lack of responsiveness of catch per unit effort to changes in stock abundance in abalone fisheries, these results must be treated with some seriousness, although the effect of changes in divers may be contributing to this

overall decrease in catch rates. The area of most immediate concern for this species is Grid 107 (Israelite Bay).

This interpretation needs to be mitigated against potential effects of management changes which may have contributed to the observed patterns. For example, in 1993/94 size limits were changed from meat weight to a minimum shell length of 140 mm, although the industry voluntarily retained a 145 mm minimum size for fishing. A significant decline in average meat weight was detected for the period 1989 to 1994, but not for the period 1994 to 1998, which gives some credence to the importance of management changes in affecting the data. Seasonal variation in meat weight and handling practices with respect to blood loss also need to be considered.

Brownlip: The stability of the management arrangements since 1989, i.e. a maximum of 5 tonnes greenlip out of a total individual quota of 6.2 tonnes, has resulted in a good comparative data set for brownlip. Stocks of brownlip appear in good shape, and may even be increasing, as suggested by the increase in average weight being caught.

Breeding Stock Levels

The greenlip breeding stock is considered adequate due to size limit, but may be at risk noting the long-term decline in average meat weight from the fishery and in catch rates. The brownlip breeding stock appears adequate based on meat weight trends.

Catch and Effort Projection for Year 1999

To be fished at a sustainable level, the quota should be taken within the seven-year range of 540-670 diver days. However, in 1998 the quota was again taken at the high end of this range, and unless stock abundances improve it is likely that effort will continue to be at the high end of the projected range and possibly even outside it.

Product Value for Year 1998

Estimated average prices per kilogram meat weight were reported as \$107.50 for greenlip and \$102.50 for brownlip. On the basis of the average prices, the Zone 1 greenlip/brownlip fishery was worth approximately \$4 million.

General comments

The fishery continues to be a valuable fishery despite the downturn in the main markets and slightly lower prices. The status of the greenlip stock is of concern owing to the ongoing gradual decline in average meat weights, and higher effort levels needed to achieve the quota in the last five years. Consideration should be given to reducing the pressure on greenlip by setting a species quota and allowing a slightly higher take of brownlip abalone within the existing TAC. Given the need for more precise stock assessments, a detailed research logbook to complement the quota returns and provide more accurate monitoring data should be implemented on an urgent basis.

Zone 1 Abalone Table 1 Zone 1 divers' abalone catch and effort by quota period (catch in whole weight).

Quota period	Greenlip abalone (tonnes)	Brownlip abalone (tonnes)	Roe's abalone (tonnes)	Diver days	Greenlip CPUE (kg per diver day)	Quota period (months)	Start month
1988/89	86.59	25.47	5.13	624	139	12	1 Nov
1989/90	67.17	16.54	4.05	403	167	12	1 Nov
1990/91	88.10	14.76	9.98	599	147	12	1 Nov
1991	30.56	5.48	4.27	237	129	4	1 Nov
1992	86.93	16.73	7.93	528	165	12	1 Nov
1993	85.47	16.56	9.95	519	165	12	1 Nov
1994	82.82	18.11	9.29	634	131	12	1 Nov
1995	80.67	19.68	6.46	680	119	12	1 Nov
1996	81.67	19.13	6.11	632	129	12	1 March
1997	87.79	21.02	10.23	720	122	13	1 March
1998	82.52	17.95	6.12	669	123	12	1 April

Notes

1. Data source: quota returns.
2. Standard conversion factors for meat to whole (live) weight where used are 2.75 for greenlip, 2.5 for brownlip, and 2.5 for Roe's abalone.
3. Diver days refers to fishing effort by Zone 1 divers only.
4. Roe's abalone catch is only that taken by Zone 1 divers. West coast licensed abalone (Roe's abalone only) divers are also permitted to catch a small proportion of their quota on the south coast. See Roe's Abalone Status Report for more details.
5. The length of quota period has varied with management changes, and for simplicity has been recorded against the nearest calendar years.
6. Catch rates refer to greenlip abalone only and are calculated using whole weights.

Abalone Zone 2 Status Report

Main Features

Stock assessment complete:

Yes

Exploitation status:

Fully exploited

Breeding stock levels:

Adequate

Previous catch and effort projections for year 1998:

650-850 days to take a catch of:

Greenlip and brownlip 110 tonnes
(whole weight)

Catch and effort current season (1998):

658 diver days to take a catch of:

Greenlip and brownlip 108.6 tonnes
(whole weight)

Estimated annual value (to fishers) for year 1998:

\$4 million

Catch and effort projection next year (1999):

Quota of 99 tonnes (whole weight) greenlip and 10 tonnes (whole weight) brownlip is expected to be taken within 650-850 diver days

Recreational component (1998):

Unknown; believed to be less than 5% of commercial catch

Boundaries and Access

Zone 2 extends from Shoal Cape to Busselton jetty. There are eight divers licensed to take greenlip, brownlip and Roe's abalone.

The quota period in Zone 2 was 1 April 1997 to 31 March 1998. (Note: As the bulk of the catch is taken early in the 'quota year', the data for the fishery is now, for simplicity, recorded against the nearest calendar year when most of the catch is taken. For example, for the current 1998/99 quota period, most of the catch was taken in 1998, therefore the data will be recorded against 1998.)

Annual Production

Main fishing method

Diving.

Landings

The individual quota for the 1998/99 quota year (beginning 1 April 1998) was 5 tonnes (meat weight). The 1998 Zone 2 greenlip catch was 104.4 tonnes (whole weight) and the brownlip catch was 4.2 tonnes (Zone 2 Abalone Table 1).

The total Zone 2 abalone catch for the 1998 season was 108.6 tonnes (whole weight), an increase from 105.5 tonnes for the 1997 season.

Fishing effort

Total effort in Zone 2 in 1998 was 658 days for a total of 2,241 dive hours. The effort was towards the bottom of the predicted range of 650-850 days. This compares with 685 days (2,229 hours) in 1997.

Catch rate

Catch rate in Zone 2 was 159 kg/diver day during the 1998 season compared with 146 kg/diver day for 1997.

Stock Assessment

Greenlip: Stocks of greenlip abalone appear in good shape in this zone. This appears to have been the result of a combination of reducing quotas temporarily and closures/openings to the most productive part of the fishery (Augusta). Future management should consider beneficial effects of rotational fishing patterns in this particular zone, particularly in light of the effects of the Augusta closure on yields.

Brownlip: Stocks of brownlip abalone appear in good shape; they have not been targeted in recent years, however historical catches indicate there may be a 5+ tonne sustainable annual production of this species in this zone. In addition, anecdotal evidence from the industry suggests that there are substantial under-exploited stocks of brownlip which could possibly support an 8 tonne annual yield.

Breeding Stock Levels

The breeding stock is considered adequate, noting that the legal minimum size is above the size at maturity.

Catch and Effort Projection for Year 1999

It is expected that the zone quota (109 tonnes) will be achieved within the five-year range of 650-850 diver days. It is likely to be at the lower end of the projected range if the stock abundance is similar to last year.

Product Value for Year 1998

Estimated average prices per kilogram meat weight were reported as \$107.50 for greenlip and \$102.50 for brownlip. On the basis of the average prices, the Zone 2 greenlip/brownlip fishery was worth approximately \$4 million.

General Comments

The fishery in this zone has now recovered from the low catch period of the mid-1990s. The current catch rates and fishing days needed to achieve the quota indicate that the stocks have returned to the relatively productive levels of the late 1980s. To ensure improved reliability in future stock assessments, a detailed diver research logbook program should be implemented to support the quota database. With this improved level of data further tuning of the TAC could be undertaken.

Zone 2 Abalone Table 1 Zone 2 divers' abalone catch and effort by quota period (catch in whole weight).

Quota period	Greenlip abalone (tonnes)	Brownlip abalone (tonnes)	Roe's abalone (tonnes)	Diver days	Greenlip CPUE (kg per diver day)	Quota period (months)	Start month
1987	93.56	7.38	0.76	814	115	12	1 Jan
1988	95.74	14.64	1.73	848	113	12	1 Jan
1989	71.07	8.15	0.88	560	127	10	1 Jan
1989/90	90.20	9.34	2.95	717	126	12	1 Nov
1990	26.31	4.01	1.80	275	96	6	1 Nov
1991	100.71	9.18	6.66	924	109	12	1 May
1992	88.13	13.56	4.62	801	110	12	1 May
1993	93.32	14.59	2.89	895	104	12	1 May
1994	94.35	14.11	5.66	966	98	12	1 May
1995	71.19	7.58	5.12	691	103	12	1 May
1996	95.00	2.81	6.57	538	177	11	1 May
1997	100.20	5.28	5.62	685	146	12	1 Apr
1998	104.43	4.21	5.26	658	159	12	1 Apr

Notes

1. Data source: quota returns.
2. Standard conversion factors for meat to whole (live) weight where used are 2.75 for greenlip, 2.5 for brownlip, and 2.5 for Roe's abalone.
3. Diver days refers to fishing effort by Zone 2 divers only.
4. Roe's abalone catch is only that taken by Zone 2 divers. West coast licensed abalone (Roe's abalone only) divers are also permitted to catch a small proportion of their quota on the south coast. See Roe's Abalone Status Report for more details.
5. The length of quota period has varied with management changes, and for simplicity has been recorded against the nearest calendar years.
6. Catch rates refer to greenlip abalone only and are calculated using whole weights.

Roe's Abalone Status Report**Main Features****Stock assessment complete:**

Yes

Exploitation status:

Fully exploited

Breeding stock levels:

Adequate

Previous catch projections for quota period 1997/98:

A catch of 120 tonnes (all zones) taken within 750-1,100 diver days (all zones)

Catch current seasons (1997/98 and 1998/99):

(See notes on quota periods under 'Boundaries and Access')

Zone 3 licensees 102.4 tonnes (whole weight)
(Oct 97-Sep 98)

Zone 1 and 2 licensees 13.6 tonnes (whole weight)
(Oct 97-Sep 98)

Zone 3 licensees 73.5 tonnes (whole weight)
(Oct 98-Mar 99)

Zone 1 and 2 licensees 10.2 tonnes (whole weight)
(Oct 98-Mar 99)

continued over

Estimated annual value (to fishers) for year 1997/98:

\$4 million (all zones)

Estimated annual value (to fishers) for 6 month season 1998/99:

\$2.6 million (all zones)

Catch and effort projection next year (Apr 1999-Mar 2000):

A catch of 108 tonnes (Zone 3 licensees), 8 tonnes (Zone 2 licensees), and 9.96 tonnes (Zone 1 licensees). Effort projection is 750-950 diver days (Zone 3 licensees).

Recreational component (1998):

20-25 tonnes from the Perth metropolitan area; unknown from other areas

Boundaries and Access

Abalone Zone 1: There are six Zone 1 divers taking Roe's abalone as well as greenlip and brownlip abalone within Zone 1, which extends from Shoal Cape to the SA border.

Abalone Zone 2: There are eight Zone 2 divers taking Roe's abalone as well as greenlip and brownlip abalone in this zone, which extends from Cape Naturaliste to Shoal Cape.

Dedicated Roe's abalone fishers: There are 12 dedicated Roe's abalone fishers, or Zone 3 licensees, who are licensed to take Roe's abalone from all areas of the State. Quota areas are subdivided into Zones 1 and 2 as described above, and the west coast (Zone 3). Zone 3 extends from Cape Leeuwin to the NT border, with an additional quota area for the Perth metropolitan fishery (Cape Bouvard to the mouth of the Moore River) introduced for the 1997/98 and 1998/99 seasons.

The quota period for Zone 1 and 2 licensees was from 1 April 1998 to 31 March 1999.

Two quota periods are reported here for the Roe's abalone fishery. The quota periods for Zone 3 licensees were October 1997 to September 1998 and October 1998 to March 1999 in all areas of the State. The metropolitan season has previously been open to commercial fishers for a limited period from mid-October to mid-December. Year-round access for the Perth metropolitan fishery was introduced for the 1997/98 and 1998/99 seasons. Access to Penguin Island has remained restricted to the first two weeks of the season.

Catch and effort from the Zone 3 (Roe's abalone only) divers is reported for the nearest quota period (1 October 1997 to 30 September 1998, and 1 October 1998 to 31 March 1999). Catch and effort from the Zones 1 and 2 divers is reported for the same period (Zone 3 Abalone Table 1), but this does not correspond to a quota period for the Zone 1 and 2 licensees (see status reports on abalone Zones 1 and 2).

Annual Production

Main fishing method

Diving.

Landings

1997/98

Zone 3 licensees from whole State	102.4 tonnes
Zone 2 licensees from Zone 2	5.8 tonnes
Zone 1 licensees from Zone 1	7.8 tonnes

Total catch **116.0 tonnes**
(Zone 3 Abalone Table 1)

1998/99

Zone 3 licensees from whole State	73.5 tonnes
Zone 2 licensees from Zone 2	5.1 tonnes
Zone 1 licensees from Zone 1	5.1 tonnes

Total catch **83.7 tonnes**
(Zone 3 Abalone Table 1)

Fishing effort 1997/98

789 days or 2,854 hours (Zone 3 licensees).

Fishing effort 1998/99

656 days or 2,407 hours (Zone 3 licensees).

Catch rate 1997/98

130 kg/day or 35.9 kg/hour (Zone 3 licensees).

Catch rate 1998/99

112 kg/day or 30.5 kg/hour (Zone 3 licensees).

Stock Assessment

Stock assessment is conducted primarily through the examination of research data provided as part of the quota monitoring and monthly returns. Short surveys are also conducted at irregular periods to address localised concerns of stock depletion. Variations to quota levels are considered after annual assessment of the catch and effort data and take into account advice from industry.

Population structure is being assessed through a genetic analysis designed to indicate the degree of genetic separation of populations at varying levels of geographic separation. This will give information on the dispersal capabilities of the species and indicate the appropriate scale for assessing stock levels.

Breeding Stock Levels

Research has shown that the size of Roe's abalone at sexual maturity (50% of adults) in the Perth metropolitan area (40 mm) is well below the State minimum legal size (60 mm). This measure together with the quota set is currently considered to provide adequate protection for the breeding stock. In the metropolitan area, additional protection for the sub-tidal, commercially targeted breeding stock is provided by the higher minimum legal size of 70 mm for the commercial sector of the fishery.

During 1998, stock surveys were conducted on six areas of reef platform within the recreational area of the fishery. The densities measured at four of the five reef sites surveyed were considered to be high enough to allow an adequate flow of abalone to the breeding stock. Reef platform stocks at Penguin Island are improving but remain low in comparison to the other areas, so Penguin Island remains closed to the recreational sector of the fishery in order to allow breeding stocks on the reef platforms to rebuild.

Both Zone 1 and Zone 3 fishers have voluntarily increased the minimum size to 75 mm in the area east of Point Culver to address concerns of localised stock depletion around Twilight Cove.

Catch Projection for Year 1999/2000 Quota Period

It is anticipated that the individual commercial quotas can be achieved in each of the three zones. The range of effort anticipated is 750-950 days for the Zone 3 licensees to take their quota, which is the range of historical effort required to take the quota at current levels of stock abundance.

Product Value for 1997/98 and 1998/99 Quota Periods

During the 1997/98 season prices for Roe's abalone varied from \$47/kg in October to the mid-\$20s/kg following the downturn in the Asian economies. Average prices for the season were around \$35/kg whole weight. This represents a \$1 decrease over the 1996/97 quota period. Based on this average price, the fishery for Roe's abalone taken by fishermen from Zones 1, 2 and 3 was valued at around \$4 million for the 1997/98 season. The price has remained fairly stable during the six months of the 1998/99 season at around \$31/kg. This resulted in a value of around \$2.6 million for the 1998/99 season.

General Comments

The reduced market price impacted negatively on the value of the fishery during 1997/98. The stocks however continue to perform satisfactorily, with the quota achieved using fewer fishing days than in the previous two years. The recreational sector continues to take significant catches in the metropolitan area without significantly impacting on the stock as a whole.

Zone 3 Abalone Table 1 Roe's abalone catches (tonnes whole weight), effort (days) and CPUE (kg/hour) (whole weight) for licensees by Zone 3 quota period since the 1990/91 season.

Quota period	South Coast								West Coast		Total State		
	Zone 1				Zone 2				Z3	Z3 CPUE (West Coast)	Total Catch	Z3 Total effort (days)	Z3 Total CPUE (kg/hr)
1 Oct to 30 Sept	Z1	Z3	Zone total	Z3 CPUE (Zone 1)	Z2	Z3	Zone total	Z3 CPUE (Zone 2)					
1990/91	9.4	16.8	26.2	31.38	2.5	11.9	14.4	20.41	76.6	28.09	117.2	910	27.57
1991/92	7.1	16.3	23.4	22.82	6.5	5.7	12.2	24.62	76.5	28.17	112.1	804	28.43
1992/93	8.7	15.9	24.6	30.77	5.7	7.6	13.3	24.47	76.1	33.05	114.0	744	32.51
1993/94	11.0	16.8	27.8	33.20	1.9	7.6	9.5	26.23	78.1	32.27	115.4	816	33.57
1994/95	6.4	16.2	22.6	23.06	6.2	11.7	17.9	21.79	75.1	34.08	115.6	900	30.32
1995/96	8.5	16.4	24.9	37.55	4.9	10.1	15.0	27.90	76.3	29.24	116.2	1029	30.93
1996/97	6.8	16.5	23.3	27.31	6.1	12.1	18.2	24.92	78.0	29.56	119.5	990	29.02
1997/98	7.8	13.3	21.1	27.86	5.8	11.7	17.5	32.29	77.4	37.13	116.0	789	35.89
1998/99*	5.1	9.6	14.7	28.29	5.1	7.6	12.7	28.07	56.3	30.95	83.7	656	30.54

Source: daily catch and effort data from quota returns.

Where Z1 = Zone 1 licensees; Z2 = Zone 2 licensees; and Z3 = Zone 3 licensees.

* The 1998/99 quota period was 01/10/1998 to 31/03/99