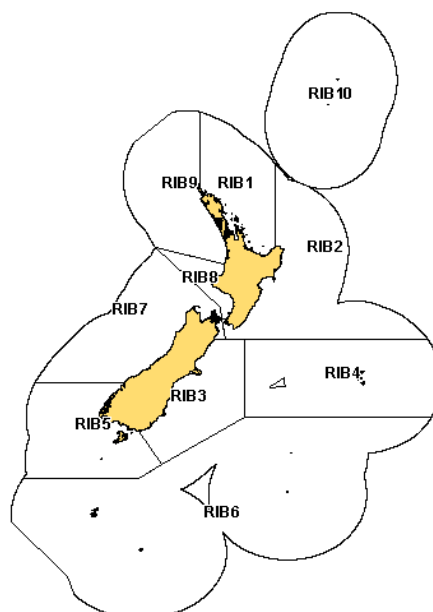


## RIBALDO (RIB)

*(Mora moro)*

## 1. FISHERY SUMMARY

### 1.1 Commercial fisheries

In New Zealand ribaldo is caught on bottom longlines and as a bycatch of trawling. Up to 4920 t per year were reported by Japanese and Korean longline vessels target fishing for ling on the Chatham Rise and east coast of the South Island in the 1970s. In recent years (since the early 1990s) most of the New Zealand catch has probably been by longline but most reported catch from about 1978 to 1990 has probably been as a bycatch during target trawling for hoki (*Macruronus novaezelandiae*), orange roughy (*Hoplostethus atlanticus*) and ling (*Genypterus blacodes*) at 500–1000 m. Reported catch has been mainly from the Chatham Rise and east coast South Island (QMAs 3 & 4) and since 1991–92 from east coast North Island (QMAs 1 & 2). Reported catch prior to 1990 was probably less than actual catch because some of the ribaldo caught by trawling was discarded. Catches by Japanese and Korean longliners in the mid 1970s are shown in Table 1. Landings from 1982–83 onwards are shown in Table 2.

Ribaldo was introduced into the QMS from 1 October 1998. The TACCs remained unchanged until the 2000–01 fishing year when quotas were raised for QMAs 1, 2 and 3. Catch limits for the most recent fishing year (2006–07) are shown in Table 2. TACCs were increased from 1 October 2006 in RIB 6 to 231 t and in RIB 7 to 330 t. In these stocks landings were above the TACC for a number of years and the TACCs have been increased to the average of the previous 7 years plus an additional 10%.

**Table 1: Japanese and Korean longline catch (t) of ribaldo (“deep-sea cod”) from New Zealand waters, probably mostly Chatham Rise and east coast South island, by calendar year from 1975–77.**

Year	1975	1976	1977
Japan	2 417	4 920	4 283
Korea	–	–	2 861

1. Reported as “cods” but considered to be mainly ribaldo. The Korean fleet began fishing in April 1977.

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**Table 2: Reported landings (t) of ribaldo by QMA for fishing years 1983–84 to 2006–07 and TACCs (t) for the most recent fishing year 2006–07. ET catch is from outside the EEZ.**

	QMA 1	QMA 2	QMA 3	QMA 4	QMA 5	QMA 6	QMA 7	QMA 8	QMA 9	QMA 10	ET	Total
1982–83	0	8	15	33	111	0	58	0	0	0		225
1983–84	0	3	24	21	68	1	25	0	0	0		142
1984–85	0	4	17	61	21	13	18	0	0	0		134
1985–86	1	1	26	13	35	2	37	0	0	0		115
1986–87	4	1	44	20	41	10	6	0	0	0		126
1987–88	19	4	65	31	56	12	68	0	0	0		255
1988–89	1	2	33	41	6	6	69	1	10	0		169
1989–90	8	9	23	28	6	13	21	0	0	0		108
1990–91	15	15	177	119	34	106	55	0	0	0		521
1991–92	95	40	160	169	73	98	40	0	0	0		675
1992–93	131	54	217	228	67	96	106	0	0	0		899
1993–94	87	70	217	186	23	92	42	1	0	0		718
1994–95	116	136	437	303	68	122	39	2	6	2		1 231
1995–96	121	168	286	253	26	109	62	0	0	0		1 025
1996–97	114	188	365	843	64	158	77	1	0	0	14	1 824
1997–98	78	122	141	375	80	262	110	1	1	0	44	1 214
1998–99	24	55	161	290	71	223	243	1	0	0	13	1 081
1999–00	22	89	264	347	80	237	300	< 1	< 1	0	20	1 359
2000–01	5	107	269	306	78	191	275	< 1	< 1	0	10	1 242
2001–02	7	53	198	370	62	322	254	0	< 1	0	45	1 311
2002–03	12	98	211	183	50	172	338	< 1	1	0	144	1 209
2003–04	12	120	175	299	50	205	364	< 1	2	0	75	1 302
2004–05	28	127	156	379	44	105	307	< 1	2	0	92	1 240
2005–06	49	137	126	202	47	62	336	0	4	0	55	1 018
2006–07	39	125	149	312	49	61	404	0	9	0	14	1 162
TACC	121	176	394	357	52	231	330	1	2	0		1 282

### 1.2 Recreational fisheries

There are no known recreational fisheries for ribaldo.

### 1.3 Customary non-commercial fisheries

There is no known customary non-commercial fishing for ribaldo.

### 1.4 Illegal catch

Estimates of illegal catch are not available.

### 1.5 Other sources of mortality

There is no quantitative information on the level of other sources of mortality.

## 2. BIOLOGY

Ribaldo is known from the North Atlantic Ocean from Iceland to West Africa, the western Mediterranean Sea, the Indian Ocean south of Madagascar and the Pacific Ocean from Australia, New Zealand and Chile. In New Zealand it is widespread and has been caught by research trawl at depths of about 200–1300 m. It appears to be most common at 500–1000 m. The relatively high catch by bottom longline suggests that it favours rough bottom habitats.

Ribaldo reaches fork lengths (FL) of about 75 cm and 65 cm for females and males respectively. Most research trawls have caught fish ranging from 30 to 70 cm FL. There are few data on reproduction but trawl-caught samples suggest winter/spring spawning. Fish do not appear to form large spawning aggregations. Early life history is largely unknown but a few individuals less than 10 cm FL were captured in plankton nets in the upper 200 m of the water column over bottom depths of about 1000 m at the south west end of Chatham Rise.

No information on age, growth and natural mortality is available. Length weight parameters for ribaldo are shown in Table 3.

**Table 3: Length-weight parameter values for ribaldo.**

Fishstock	Estimate			
	Females		Males	
	a	b	a	b
RIB	0.0357	3.29	0.0531	3.30

1. Length weight parameters ( $W = a.L^b$ , where W is weight (g) and L is fork length (cm).)

### 3. STOCKS AND AREAS

It is not known whether different regional stocks of ribaldo occur in New Zealand waters but it is possible that there are separate stocks based on natural boundaries such as the New Zealand landmass, i.e., west and east coast stocks. The Working Group agreed on five fishstocks based on the four main fishing areas plus the Kermadec area, i.e., the east coast of the North Island (QMAs 1 and 2), Chatham Rise and east coast South Island (QMAs 3 and 4), Southland and Sub-Antarctic (QMAs 5 and 6), the west coast of New Zealand (QMAs 7, 8 and 9) and QMA 10.

### 4. STOCK ASSESSMENT

No stock assessments are available for any ribaldo stocks.

#### 4.1 Estimates of fishery parameters and abundance

No estimates of fishery parameters have been made. No analyses of research trawl survey abundance estimates were made because no trawl survey series has been designed to sample the depth range of ribaldo. Therefore, no estimates of abundance are available.

Dunn (2006) described the fishery up to 2002–03 but found that interpreting CPUE data was difficult because the catch is taken mainly as by-catch of other fisheries and the CPUE may reflect changes in those fisheries rather than ribaldo abundance. Discarding of ribaldo has been common, and the species has not been consistently reported on the forms, although there has been an increase in reported catch since the entry of ribaldo into the QMS.

#### 4.2 Biomass estimates

Estimates of biomass are not available.

#### 4.3 Estimation of Maximum Constant Yield (MCY)

MCY cannot be estimated.

#### 4.4 Estimation of Current Annual Yield (CAY)

CAY cannot be estimated.

#### 4.5 Other yield estimates and stock assessment results

No information is available.

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### 5. STATUS OF THE STOCKS

It is not known if recent catches are sustainable in the long term or whether catches at the level of the current TACCs will allow the stocks to move towards a size that will support the maximum sustainable yield.

TACCs and reported landings for the 2006–07 fishing year are summarised in Table 4.

**Table 4: Summary of TACCs (t) and reported landings (t) of ribaldo for the most recent fishing year.**

Fishstock	QMA	2006–07	2006–07	
		Actual TACC	Estimated landings	
RIB 1	Auckland (East)	1	121	39
RIB 2	Central (East)	2	176	125
RIB 3	South-east (Coast)	3	394	149
RIB 4	South-east (Chatham)	4	357	312
RIB 5	Southland	5	52	49
RIB 6	Sub-Antarctic	6	231	61
RIB 7	Challenger	7	330	404
RIB 8	Central (West)	8	1	0
RIB 9	Auckland (West)	9	2	9
RIB 10	Kermadec	10	0	0
RIB ET				14
Total			1664	1162

### 6. FOR FURTHER INFORMATION

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