

## Review of New Zealand SBT Fisheries for the 10<sup>th</sup> Annual CCSBT Meeting

### 1. Introduction

Since the start of the domestic SBT fishery handline, trolling and longline have been used to target SBT in the EEZ. In recent years nearly all of the SBT catch has been by surface longline with small catches by trolling. The domestic fishery is composed of a wide range of vessel types including many small owner-operated boats and 4–5 low temperature Japanese distant water longliners chartered by a New Zealand company. Both the chartered vessels and the New Zealand owner-operated vessels fish competitively against New Zealand's SBT catch allocation.

Fishing for SBT in 2001/02 was primarily conducted off the west coast of the South Island and along the east coast of the North Island between 37° and 42° S. In 2001/02 SBT catches exceeded our national allocation of 420 t. with landings post-closure of the season (midnight 20 June 2002) resulting in a total annual catch of 452 t, an over catch of 32 t. To compensate for the over-catch of national allocation in 2001/02, New Zealand reduced its SBT catch limit to 387 t for 2002/03 . The SBT fishing season was closed 28 June 2003 (midnight) and the final catch in 2002/03 was 388 t.

### 2. Operational Constraints on Effort

#### *Voluntary measures*

Since 1994 the New Zealand fishing industry has implemented voluntary measures with respect to longline fishing that are detailed in a "Code of Practice". Specific measures include gear specifications, environmental standards, operational practices and closed areas. The intent of the measures is to minimize:

- bycatch (eg of seabirds and marine mammals);
- catch of SBT smaller than 20 kg;
- impacts on other domestic tuna fisheries, and
- gear conflict among SBT longline vessels.

Other measures that are used but not part of the "Code of Practice" include catch limits by area, changing areas when bird bycatch reaches a specific level, using multiple "tori" lines and longer lines than specified in regulations, night-setting, and the use of pneumatic "bird-scaring" cannons.

#### *Regulatory measures*

New Zealand continues to impose the previously agreed national catch limit of 420 tonnes (whole weight). This catch limit is a competitive limit among all license holders. Regulations specify the annual catch limit and make it an offence to take SBT once the catch limit has been reached. The catch limit applies within and outside New Zealand fisheries waters for the "fishing year" which extends from 1 October to 30 September. In the few years when the catch limit has been exceeded, it has been reduced in the following year by an equivalent amount.

Until midway through the 2000/01 fishing season the SBT quota has applied to the catch of both southern bluefin tuna (*Thunnus maccoyii*) and Pacific bluefin tunas (formerly *Thunnus thynnus*, now recognized as *Thunnus orientalis*). The quota restriction on Pacific bluefin tuna was removed late in the 2000/01 SBT season when it was demonstrated that Pacific bluefin could be readily distinguished from SBT in catches based on morphological characteristics. SBT landings reported prior to June 2001 distinguished between northern and southern bluefin despite the fact the catches of both were counted against the SBT quota. Catches reported as northern bluefin were most likely Pacific bluefin. The quota restriction on northern bluefin tuna (*Thunnus thynnus*) was removed in 2002.

New Zealand is engaged in consultations with stakeholder groups to introduce SBT and other highly migratory fish species into the Quota Management System (QMS). SBT is currently scheduled for introduction into the QMS on 1 October 2004.

### **3. Catch and Effort**

Table 1 gives the estimated SBT catch by gear type since 1990 and clearly shows that since this time the New Zealand SBT fishery has essentially been a longline fishery. Longline effort now dominates the fishery and catches by handline and trolling are negligible components. Total SBT catches are summarised by calendar year and fishing year (1 October to 30 September) in Table 2. Figure 1 shows the effort trend (in millions of hooks) for the longline fishery from 1989 to 2002, the most recent complete year of processed data. It is clear from this figure that total domestic longline effort, measured in millions of hooks, has increased exponentially since the early 1990s. The increase in effort is attributable to the growing number of New Zealand owned and operated longliners that primarily target bigeye tuna. In contrast, the longline effort targeting SBT has been stable since 1989 (average = 1.4 million hooks per year). The total number of longline hooks set each year is now slightly more than 10 million and sets targeting SBT account for about 20% of all longline effort.

### **4. Historical Catch and Effort**

Figure 2 shows the trend in SBT nominal CPUE since 1980 by fleet. The foreign licensed fleet CPUE shows a decline throughout the period fished except in 1985, 1990 and 1995, the last year when the fleet fished in the EEZ. CPUE for the chartered fleet (beginning in 1989) and the domestic owner-operator fleet (beginning in 1991) are highly variable. Nominal CPUE throughout the 1990s is not regarded as a very good indicator of abundance because of changes in operational practices and areas fished by each fleet.

### **5. Annual Fleet Size and Distribution**

The New Zealand longline fleet has broadened its area of operation and now fishes most areas of the east and west coasts of both the North and South Islands. The total number of longliners fishing in 2002 was 156 vessels, 67% of which were small longliners (< 50 GRT). This represents an additional 24 longliners fishing in 2002 relative to 2001 and a slight decrease in the proportion of smaller longliners < 50 GRT.

SBT target fishing by longline primarily occurs off the west coast of the South Island and along the east coast of the North Island. SBT also comprises a significant bycatch in the bigeye target fishery in the Bay of Plenty but is also targeted by domestic owned and operated vessels primarily between 37° and 42° S. Figure 3 shows the position of all longline sets targeting SBT in 2001/02 (charter and owner-operator vessels combined).

### **6. Historical Fleet Size and Distribution**

The New Zealand SBT fishery began off the west coast of the South Island as a winter small boat handline and troll fishery in the early 1980s. These methods have comprised only a minor component of the fishery since 1990. During the 1980s to mid-1990s most longlining was conducted by foreign licensed longliners from Japan. However, declining catch rates, shortened seasons of availability and reports of increased operating costs in the EEZ resulted in the foreign licensed fleet ceasing operations in 1995. Domestic longlining began in 1991 and has steadily increased up to at least 2002, although most effort is not targeted at SBT. The change in vessel numbers and in vessel size composition is shown in Figure 4. The change in vessel numbers is essentially linear since 1989.

## 7. Fisheries Monitoring

### *Observer coverage*

Observer coverage has been 100% in the charter fleet for several years. However, the small size of domestic owned and operated vessels and short trips has made it difficult for the Ministry of Fisheries (MFish) to realise the 10% target for observer coverage in this fleet. As a consequence, observer coverage has typically been low. However, a target of 10% observer coverage for this fleet and 100% coverage for the charter fleet has been agreed. Coverage during the 2001/02 fishing year resulted in 29 % of all longline hooks set targeting SBT observed (95% of hooks in the Charter fleet and 6% of domestic owner-operator vessels. Realignment of MFish observer allocation should result in continued improvements in coverage of domestic owned and operated longline vessels. Observer coverage on vessels using handline or trolling is not planned because the contribution of these methods to the total catch is negligible.

### *RTMP coverage*

MFish operates an in-season catch monitoring system for SBT. This system requires that on-shore processing companies and freezer vessels (including all of the chartered fleet) report their catch by e-mail or fax during the season to MFish. Weekly reporting is required once 25% of the catch allocation is reached and daily reporting is required when 50% of the catch allocation has been reached. Reports are collated and analysed by MFish with the season being closed as close as possible to reaching our national allocation. All SBT permit holders are then notified that the season is closed and that it would be an offence to take southern bluefin tuna for the remainder of the fishing year.

### *Biological information*

Observers from the MFish Scientific Observer Programme are responsible for collecting biological data on SBT and bycatch data for catch characterisation. In 2001/02, otoliths were collected from 1203 SBT and observers recovered 11 tags (10 CSIRO tags and 1 Japanese tag). Otoliths are stored at NIWA and tag recovery data were provided to the tagging agency. Length, weight (both processed and whole weights) and sex are recorded regularly for SBT and all major fish bycatch species. In total stomach contents were collected from over 2322 SBT and 3004 SBT were measured.

## 8. Other Factors

### *Import/export statistics*

Statistics on the export of SBT are compiled by Customs and summarized by the Department of Statistics. Export statistics are further summarized by the New Zealand Seafood Industry Council and maintained as a database for economic evaluations of New Zealand fisheries.

### *Markets*

The only market for SBT caught in the EEZ is the Japanese sashimi market and all fish of suitable quality are exported. Domestic consumption is negligible.

### *Mitigation*

New Zealand regulations specify that all tuna longline vessels shall use seabird-scaring devices (“tori-lines”). The minimum standard for “tori lines” is the same as specified by CCAMLR. The domestic fishing industry has a voluntary code of practice advocating night setting for all tuna longlining and for the large tuna longline vessels a limit on total incidental mortality of “at risk” seabirds has been set.

### *Recreational and Indigenous Catches of SBT*

Recreational fishing for SBT is limited. There are records of recreational catch from both the North and South islands. Historical catches may well have been higher. There are no estimates of SBT catches by Maori non-commercial fishing.

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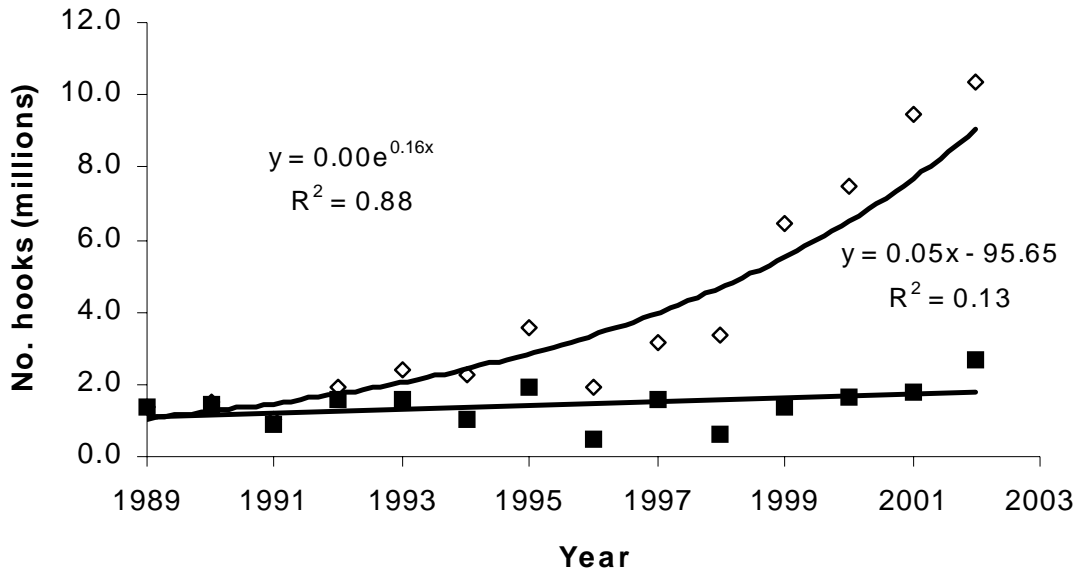
**Table 1.** Summary of SBT catch (t.) by method since 1990, estimated catches are scaled to Licensed Fish Receiver landing reports to reflect total landings.

<b>Year</b>	<b>Troll</b>	<b>Longline</b>	<b>Misc.</b>	<b>Total</b>
1990	49.3	314.7	165.2	529.2
1991	8.6	149.7	6.2	164.5
1992	9.5	261.3	8.4	279.2
1993	0.0	215.0	1.7	216.6
1994	0.4	276.1	0.5	277.0
1995	4.2	429.6	2.6	436.4
1996	2.0	136.8	0.4	139.3
1997	2.2	329.6	1.8	333.7
1998	6.8	328.7	1.6	337.1
1999	2.2	456.8	1.7	460.6
2000	0.7	379.6	0.0	380.3
2001	0.2	358.3	0.0	358.5
2002	0.7	449.6	0.0	450.3

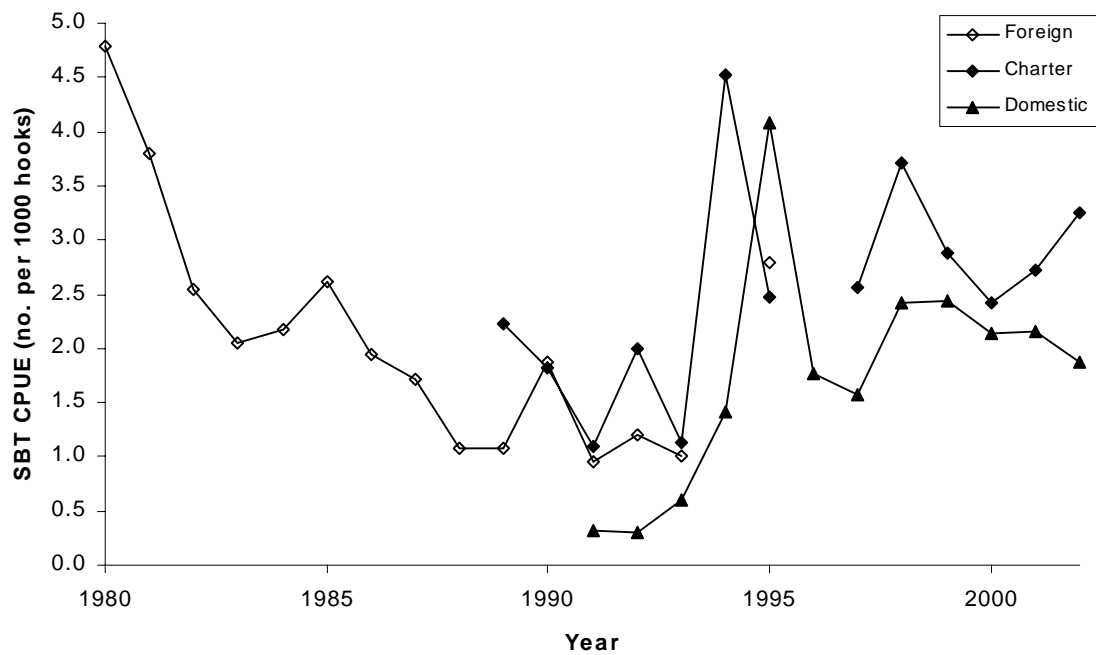
**Table 2.** Total landings of SBT (t.) by calendar and fishing years from Licensed Fish Receiver Reports.

<b>Cal. Yr.</b>	<b>t.</b>	<b>Fish. Yr.</b>	<b>t.</b>
1980	130		
1981	173		
1982	305		
1983	132		
1984	93		
1985	94		
1986	82	1986/87	60
1987	59	1987/88	94
1988	94	1988/89	437
1989	437	1989/90	529
1990	529	1990/91	165
1991	164	1991/92	279
1992	279	1992/93	216
1993	217	1993/94	277
1994	277	1994/95	435
1995	436	1995/96	140
1996	139	1996/97	333
1997	334	1997/98	331
1998	337	1998/99	458
1999	461	1999/00	381
2000	380	2000/01	362
2001	358	2001/02	452
2002	450	2002/03	388

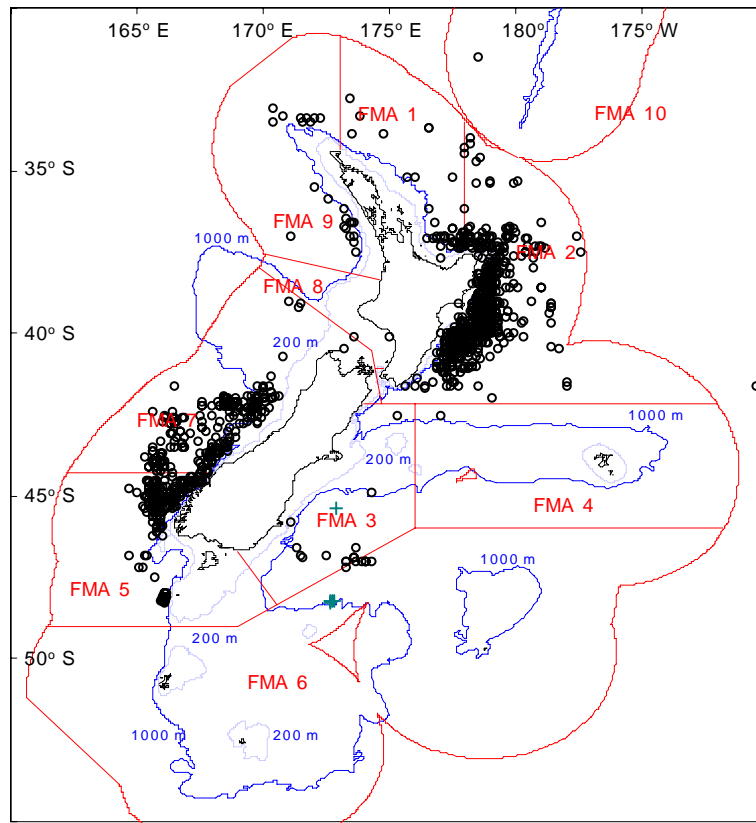
**Figure 1.** New Zealand domestic longline fishing effort (millions of hooks set) since 1989 by target (charter and domestic owner-operated vessels combined), open diamonds = all targets, filled squares = SBT target sets.



**Figure 2.** Nominal CPUE (no. per 1000 hooks) of SBT where SBT is targeted by fleet since 1980.



**Figure 3.** Distribution of longline sets targeting SBT in fishing year 2001/02 (Charter and owner-operated vessels combined).



**Figure 4.** Changes in the New Zealand longline fleet size composition (GRT).

