

**YELLOWFIN TUNA
FISHERIES OF THE NORTH-
EASTERN AUSTRALIAN
FISHING ZONE**

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*Background paper presented at the inaugural meeting of the Western Pacific
Yellowfin Tuna Stock Assessment Group (Port Vila, 18-19 June, 1991)*

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SUMMARY

The appearance of yellowfin tuna off the east coast of Australia varies seasonally and from year to year. Catches of yellowfin tuna are often linked to the incursion of warm water (18-22°C) from the Coral Sea along the east coast.

Catches of yellowfin tuna in the north-eastern Australian fishing zone (AFZ) range between 1000 and 5000 t each year. The dominant fishing method is longline. The Japanese reported 75% (by weight) of the total yellowfin tuna catch in the 1988 season. Australians using longline reported 19% of the total. Small catches of yellowfin tuna are also taken by recreational anglers (probably less than 5% of the total) and by a variety of other methods, such as poling, purse seine and trolling.

The Australian fishery generally takes larger yellowfin tuna (e.g., yellowfin tuna are over 30 kg on average in the Japanese longline fishery) than the surface fisheries in other areas of the Western Pacific. Monitoring programs are established for all of the main fishing methods, except angling.

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INTRODUCTION

Waters off the east coast of Australia provide convenient fishing for tunas and marlins, partly because of the narrow continental shelf of some areas and ease of access to oceanic waters. A variety of fishing methods are used to catch yellowfin tuna in Australia, including commercial longlining and recreational angling.

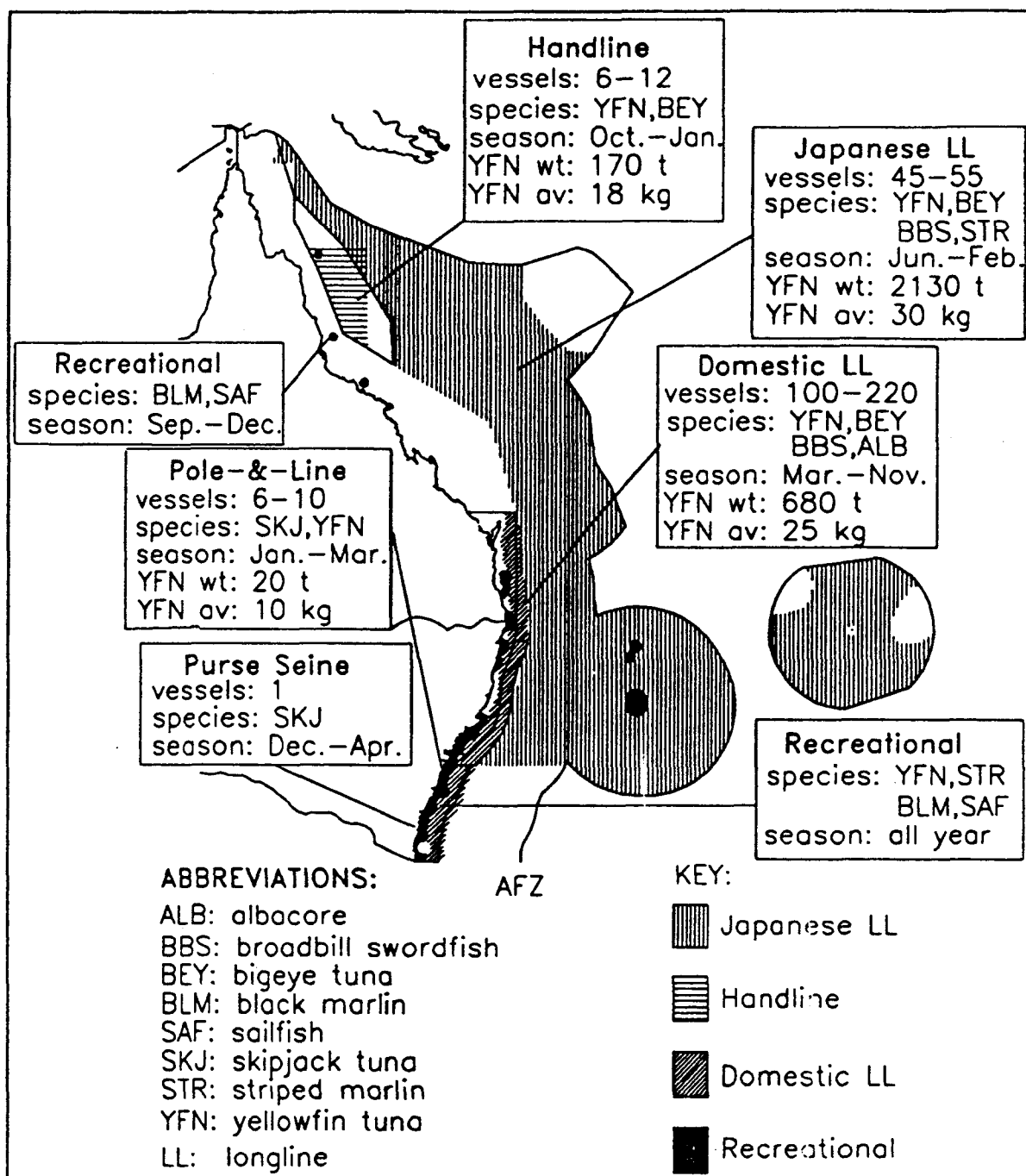


Figure 1. The eastern Australian fishing zone showing the location of tuna fisheries (extracted from Anon. 1989).

The yellowfin tuna fishery is managed by the Commonwealth Government of Australia under the Offshore Constitutional Settlement¹. The Commonwealth manages the tuna and billfish fisheries of the north-eastern AFZ (Figure 1) through consultation with the fishing industry, angling representatives and state governments. The East Coast Tuna Management Advisory Committee (ECTUNAMAC) is the formal vehicle for such consultation.

This paper describes the methods used to fish for yellowfin tuna in the north-eastern¹ AFZ. Fishing activities of Australians for yellowfin tuna in areas beyond the AFZ are also described. programs for collecting and validating data are outlined for each fishing method.

RECREATIONAL ANGLING

History

Tunas, including yellowfin tuna, and marlins have been taken by anglers off eastern Australia since the early 1900s (Table 1). During the 1970s boats capable of operating offshore became available at reasonable prices and angling for tunas and marlins grew in popularity. The popularity of angling for yellowfin tuna is also related to the ease of access to fishing grounds. The continental shelf less than 12 km wide in some places along the south-east coast and yellowfin tuna may be caught from the shore.

Fishing Activities

The appearance of yellowfin tuna in eastern Australian waters varies seasonally and from year to year. Consequently, angling is spread over a wide geographic area and catches depend on season and targeting. Yellowfin tuna have outstanding fighting qualities, although large marlins are generally considered the ultimate angling prize.

Each year thousands of anglers fish for tunas and marlins off eastern Australia. The recreational fishery may be divided into three components: clubs and organised events, charter boat operations, angling not associated with organised activities or charter boats. (Figure 2).

Monitoring Programs

There is no program for routinely collecting catch (i.e., landings) and effort data from anglers targeting yellowfin tuna. In 1989 the Commonwealth Department of Primary Industries and Energy engaged a private consultant who investigated methods of collecting catch and effort data from anglers catching tunas and marlins off eastern Australia (see West 1990 and Ward 1991). The Australian Fisheries Service is considering possible funding schemes for a monitoring program.

¹The 'eastern AFZ' is defined as all waters east of 140°E bounded by the Australian fishing zone. The term 'north-eastern AFZ' is sometimes used in this report to refer the area of the eastern AFZ which is north of 40°N.

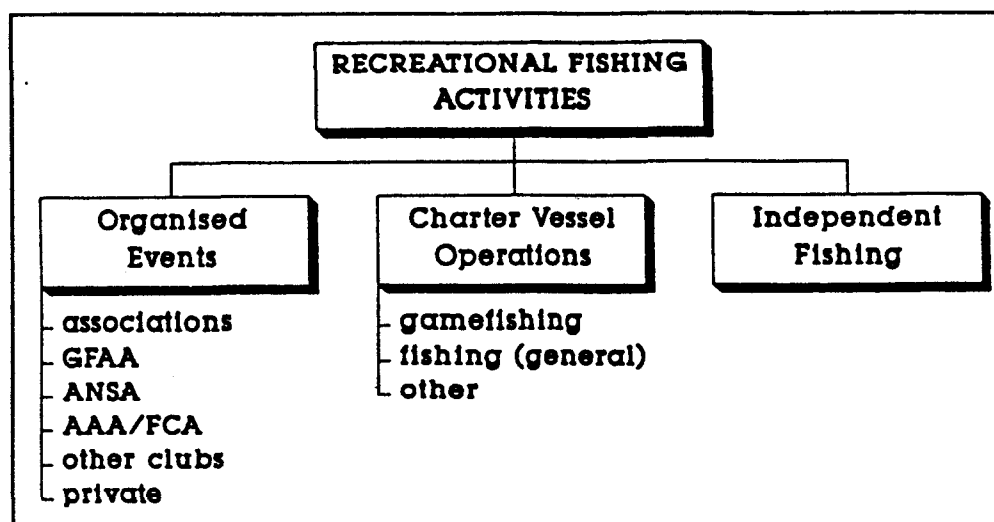


Figure 2. Components of the recreational fishery for tunas and billfishes (from Ward 1991).

Most angling organisations and management agencies in Australia encourage anglers to tag and release excess catch. Many anglers who target yellowfin tuna voluntarily tag and release them under the New South Wales Cooperative Gamefish Tagging Programme. The New South Wales Agriculture and Fisheries² maintains a database of release and recapture information. The program was established in 1973 and by June 1990, anglers had reported tagging over 7468 yellowfin tuna (J. Mathews, Fisheries Research Institute, 13 June, 1991). The number of yellowfin tuna reported tagged and released has increased over the years. Over 2233 yellowfin tuna were tagged and released² during 1988/89 (Ward 1991). The popularity of tagging may be attributed to angler organisations encouraging tag and release, increased targeting of yellowfin tuna by anglers, increased numbers of anglers and improvements in fishing equipment.

Catches

Fishing effort for yellowfin tuna tends to be concentrated on organised events, such as tournaments, competitions and point-score days. A survey of angler clubs in eastern Australia (West 1990) indicated that they landed over 2887 yellowfin tuna in 1988/89. Angler clubs based in New South Wales accounted for 69% of the yellowfin tuna landed. Clubs affiliated with the Game Fishing Association accounted for 72% of the yellowfin tuna landed during 1988/89. There is no information on yellowfin tuna catches by charter operators or independent anglers. However, the catch of yellowfin tuna by charter operators and independent anglers is believed to be smaller than the catch reported for the organised component.

²Note that tag-and-release figures include non-club members, charter operators and, occasionally, commercial fishermen.

Table 1. Notable events in the history of the yellowfin tuna fishery off eastern Australia.

Recreational Fishery	Domestic Longline Fishery	Japanese Longline Fishery	Pole & Purse Seine Fishery	Handline Fishery	1910	<ul style="list-style-type: none"> Organised angling for marlins and tunas commences off eastern Australia.
					:	
					:	
					1930	<ul style="list-style-type: none"> First gamefishing clubs formed.
					:	
					:	
					1938	<ul style="list-style-type: none"> Gamefishing Association of Australia established.
					:	
					:	
					1950	<ul style="list-style-type: none"> Japanese longliners commence fishing for tunas and billfishes in the area that is now the eastern AFZ.
					1955	<ul style="list-style-type: none"> Introduction of pole and live-bait fishing for SBT (occasional catches of yellowfin tuna).
					1960	<ul style="list-style-type: none"> Publication of Japanese catch and effort data commences.
					1965	<ul style="list-style-type: none"> Japanese commence handlining for yellowfin tuna in the north-western Coral Sea.
						<ul style="list-style-type: none"> Australian National Sportfishing Association formed.
					1970	<ul style="list-style-type: none"> Experimental fishing for tunas conducted off eastern Australia using a variety of methods, including longline. NSW Cooperative Tagging Programme established.
					1975	<ul style="list-style-type: none"> Purse seine successfully used in conjunction with poling for SBT. Targeting of bigeye tuna and yellowfin tuna by Japanese longliners increases. Declaration of AFZ; mandatory reporting of catch & effort; progressive restriction of Japanese activities. Publication of Japanese catch and effort data ceases.
					1980	<ul style="list-style-type: none"> Growth in angling for yellowfin.
						<ul style="list-style-type: none"> Successful export of fresh yellowfin to sashimi markets leads to rapid growth of domestic longline fishery. SBT surface fishery fails.
					1985	<ul style="list-style-type: none"> ECTUNAMAC formed. Domestic longline fishery closed to new participants under interim management arrangements. Purse seine fishery closed to new participants under interim arrangements.
					1990	

AUSTRALIAN LONGLINE

History

A longline fishery has existed off New South Wales since 1954. It expanded rapidly during the 1980s following the successful export of yellowfin tuna to the fresh-chilled-sashimi markets of Japan. Besides yellowfin tuna, Australian longliners also target bigeye tuna and broadbill swordfish.

Fishing Craft and Operations

In 1991, 164 vessels were endorsed to longline off north-eastern Australia. Most of these vessels supplement longlining for yellowfin tuna with activities in other fisheries, such as droplining. Other longliners are mostly 10-20 m in length. They normally fish within 50 nautical miles of the coast, setting 300-600 hooks around sunrise or, sometimes, sunset. Yellowfin tuna are stored on ice and trips are usually of one or, occasionally, two days duration.

Fishing activity is closely linked to the seasonal movement of warm water along the Australian east coast. Many fishermen follow sea surface isotherms of 18-22°C. The fishing season commences in July or August off northern New South Wales (30°S). Activity gradually spreads southwards as the east Australian current strengthens and water warms. The fishery concentrates on the far south coast of New South Wales (35-38°S) by early winter (April-June). This area accounts for the bulk of the longline catch of yellowfin tuna. However commercial catches are reported in late-summer from as far south as 39°S and occasionally 42°S.

Several large, ex-Japanese longliners have been active in the fishery since 1987. Their operations are similar to those of Japanese longliners (see below) and they are not permitted to fish within 50 nautical miles of the coast.

Monitoring Programs

Diplock (1987, unpub.) reported catches during the early development of the fishery. A logbook was introduced for the longline fleet in 1988. Less than 50% of fishermen endorsed to longline off the east coast had logbooks before 1989. Field officers were employed in 1989 to regularly visit fishermen and to distribute and collect logbooks. By 1990 approximately 85% of fishermen had been issued with logbooks (Dendrinis & Skousen, in prep.).

Catch and effort data for each day's fishing and, sometimes, size data (length or weight) are reported for each fish in the logbook (Appendix 1). Information on fishing craft and gear details are also recorded in the logbook (Appendix 1).

Table 2. Summary of yellowfin tuna catches (t, whole weight) in the area that is now the eastern Australian fishing zone, 1951-89. See Appendix 1 for important information regarding data constraints, processing and sources.

SEASON	JAPANESE LONGLINE	JAPANESE HANDLINE	DOMESTIC LONGLINE	POLE & PURSE SEINE	OTHER METHODS	ANGLING	TOTAL
1951	na	-	-	-	na	na	na
1961							
1962	4 070	-	-	-	na	na	4 070
1963	4 149	-	-	-	na	na	4 149
1964	2 945	-	-	-	na	na	2 945
1965	4 942	252	-	-	na	na	5 194
1966	3 531	208	-	-	na	na	3 739
1967	1 403		-	-	na	na	1 403
1968	1 146	155	-	-	na	na	1 301
1969	1 621	202	-	-	na	na	1 823
1970	1 654	16	-	-	na	na	1 670
1971	2 774		na	na	na	na	2 774
1972	965		na	na	na	na	965
1973	1 461		na	na	na	na	1 461
1974	1 715		na	na	na	na	1 715
1975	750		na	9	na	na	759
1976	475		na	0	na	na	475
1977	379		na	31	na	na	410
1978	1 152		na	0	na	na	1 152
1979	1 141	35	na	0	na	na	1 176
1980	1 270	0	na	0	na	na	1 270
1981	3 337	94	na	5	na	na	3 436
1982	1 796	0	na	4	na	na	1 800
1983	3 028	448	109	5	na	na	3 590
1984	3 232	116	308	0	78	na	3 734
1985	1 847	146	744	14	8	na	2 759
1986	1 385	95	446	1	18	na	1 945
1987	2 820	244	1 132	4	49	na	4 249
1988	3 665	35	930	32	52	131	4 845
1989	2 101	21	588	70	48	na	2 828

na: caught, but no estimate available

-- fishery did not exist or assumed to be no major catch

The Fisheries Research Institute, New South Wales Agriculture and Fisheries, is developing systems for validating logbook data. Validation is through state returns ('Form 49s') and records from fishermen's cooperatives, fish markets, exporters and other processors.

Catches

Catches of yellowfin tuna by Australian longliners peaked at approximately 1300 t³ in 1987/88. More recently, involvement of some fishermen has declined due to high costs (especially for air freight) and low catch rates. Over 900 t of yellowfin tuna were caught in 1988/89 falling to 563 t in 1989/90. Accurate catch estimates were not available for 1990/91, but are likely to be higher than 1989/90 catches. Significant catches of yellowfin tuna have been made south of the management area (39-41°S, 148-150°E) and some catches may go unreported.

Yellowfin tuna caught by Australians using longline tend to be smaller (25 kg processed in 1987-89, and 28 kg processed in 1989/90) on average than those caught by the Japanese (30 kg processed).

JAPANESE LONGLINE

History

The Australian longline fishery was founded on longline fishing techniques used for many years by the Japanese. The Japanese have fished with longline for tunas and billfishes off the east coast of Australia since the early 1950s. Japanese fishing operations have been restricted since the declaration of the AFZ in 1979. Nevertheless, the Japanese longline fishery remains the major fishery taking yellowfin tuna in the AFZ. It accounts for 70% or more of yellowfin tuna taken in the north-eastern AFZ. Other species targeted by the Japanese include bigeye tuna, broadbill swordfish and striped marlin. The catch is sold at frozen-sashimi markets in Japan.

Fishing Operations and Catch

On average, 60 Japanese longliners have operated in the north-eastern sector of the AFZ each year during the 1980s. Each longliner fished for 64 days and set 170 000 hooks on average.

Japanese longliners usually commence fishing in the eastern AFZ during May and June, leaving the area towards the end of the year, while a few vessels may continue fishing until February of the following year. Catches and levels of activity in the Japanese longline fisheries in the eastern AFZ are at their lowest during April. During the 1980s annual catches of yellowfin tuna have ranged between 1270 and 3665 t, with no apparent trend (Table 2).

³All weights quoted in this paper are whole weights unless otherwise stated. The large catch in 1987/88 is partly attributed to catches by several large Japanese-style longliners.

Monitoring Programs

From 1962 to 1980 the Japanese published catch and effort data (Fisheries Agency of Japan 1962-80). The data were published for 5° squares by 10-day period. Logbook and radio reporting systems for Japanese longliners operating in the AFZ were established in November 1979. The Japanese must record catches and activities each day in a logbook (Appendix 2). Catches by handline (see below) are also recorded in the logbook.

The Japanese are also required to report their position by radio each day. Prior to November 1990 they reported catches by radio for six day periods; they now report catches for two day periods. Fishing craft and gear details are recorded in forms (Appendix 2) distributed by fishing companies on behalf of the Government of Australia. Information on fishing craft and gear are also available from licensing forms.

Under the AFZ Observer Program, Australian fisheries officers and scientists are regularly placed on Japanese longliners operating in the AFZ to collect biological data and verify logbooks and radio reports.

JAPANESE HANDLINE

In 1965 the Japanese, using handline (and pole-and-line) fishing techniques, established a fishery for yellowfin tuna and bigeye tuna in the north-western Coral Sea (Hisada 1973). Handlining activity occurred in most years since 1965 in the area bounded by 14°S and 18°S, near the Great Barrier Reef. Hisada reported handlining in another area, further west (18-20°S, 152-153°E) in 1968.

Fishing activity and catches of yellowfin tuna by handline are sporadic. Four vessels have reported catches of yellowfin tuna on average each year. In the vicinity of one or two-hundred tonne of yellowfin tuna are taken by handline catches each year. Catches exceeded 400 t in 1983 (Table 2).

POLE-AND-LINE AND PURSE SEINE

Yellowfin tuna are a by-catch of the pole-and-line and purse seine fishery for skipjack tuna off the far south coast of New South Wales (35°-38°S). Most vessels have logbooks and complete them (Appendix 3, 4).

Skipjack are poled and purse seined during January-March. The season has extended into May recently. The fishery recently underwent a boom. The skipjack tuna catch had traditionally been 100-200 t, but rose to 1200 t in 1988/89, 3350 t in 1989/90 and 6000 t in 1990/91. Over 20 vessels were fished in the 1990/91 season. Five of these vessels were purse-seiners (D. Bateman, Heinz-GreenSeas Cannery, 12 June, 1991).

Regulations now restrict the yellowfin tuna by-catch of purse-seining and poling to less than 5%. The by-catch of yellowfin tuna is quite small anyway, amounting to less than 80 t in recent years (Table 2).

DISTANT WATER PURSE SEINING

Several Australian operators have purse seined in areas beyond the AFZ since 1987. In 1990 six Australian purse seiners were licensed to fish in the economic zones of Papua New Guinea. Four of these were also licensed to fish in the Federated States of Micronesia.

OTHER COMMERCIAL OPERATIONS

Yellowfin tuna are taken by commercial fishermen using a variety of other methods, including trolling, handlining and droplining. Information on catches by other methods is rudimentary. New South Wales catch returns ('Form 49s') indicate that 40-80 t of yellowfin tuna were taken by methods other than longlining, purse seining or poling in the late-1980s (Table 2).

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APPENDIX 1: DATA SETS AND METHODS

Fishing Season

Japanese longliners usually commence fishing in the eastern AFZ during May and June, leaving the area towards the end of the year, while a few vessels may continue fishing until February of the following year. Catches and levels of activity in the Japanese longline fisheries in the eastern AFZ are at their lowest during April. Consequently data were presented in terms of twelve-month fishing seasons, commencing on 1 April and finishing on 31 March.

The Australian longlining season may extend over the entire 12 months. Many vessels commence fishing off northern New South Wales, following warm waters southwards over the early summer. Activity is centred on south-eastern Australia by late summer. However the season may extend into May or June, then continue into activities off northern New South Wales again. Other fishing activities, such as poling and angling generally occur over summer. Consequently a 'financial year' (1 July-30 June) was used as the fishing season for these methods.

Japanese 5° Square Data

Published Japanese longline data in terms of 5° squares were the only source of catch data for the period 1962-80. The 5° squares do not correspond exactly to the eastern AFZ, and consequently, each 5° square straddling the AFZ was reduced according to the proportion of the area lying outside the AFZ. This is arbitrary because catch rates in nearby areas can be quite dissimilar.

Estimation of Weight

Dressed weights were available for the Japanese longline fishery from late-1983 and onwards. For earlier years weights were calculated using the post-1983 average processed weight (30.01 kg). Although average weights were relatively stable during 1984-89, the use of an average weight to estimate catches assumes that:

- (1) size composition of the stock has remained constant during 1962-79 and 1984-89 size composition is representative of catches during 1962-79; and
- (2) that fishing practices influencing size composition of the catch, e.g., areas and seasons of operation, depth of set, have not changed.

Hence, catch in terms of weight should be used with extreme caution. It is likely, for example, that average weight during the early 1960s was higher than 30.01 kg

Dressed weights for Japanese and Australian longline catches were then raised by a factor of 1.15 to give whole weight.

Pole-and-line and Purse Seine

Yellowfin tuna catches by pole-and-line and purse seine for 1988/89 and 1989/90 were kindly provided by D. Bateman (Heinz-GreenSeas Cannery, 12 June, 1991). Catches prior to 1989 are from Australian Bureau of Statistics Records.

Angling Catch

West (1989) in a survey of angler clubs in eastern Australia indicated that they landed over 2887 yellowfin tuna in 1988/89. He suggested that angler clubs landed about 70% of all yellowfin tuna. Using an average weight of 35 kg (from anecdotal reports by anglers) this equates to 131 kg whole weight.

Catches by Other Methods

Form 49 data for landings of yellowfin tuna in New South Wales were provided by B. Pease, Fisheries Research Institute (13 September, 1990). Each monthly report may be for several fishing methods used by the fisherman over the time. The proportion of catch attributed to one method only was estimated. The proportion was then applied to catches by mixtures of methods to estimate the catch by that method. Note that the Form 49 data is only for landings in New South Wales.

Australian Tuna Longline Log (ALØ2)

Log Number		Boat Name		Australian boat registration No.	
1	c	0195			
4	5	8			19
Date		Skipper		State of registration (first two initials)	
				23	24

Shot Details					Catch (Total) Data										Activity if not Longlining												
					*Indicator for weights A - Est. whole B - Est. processed C - Act. whole D - Act. processed					Number of Fish (Total)		Export Weight (kgs)		*ABC or D Domestic Weight (kgs)		*ABC or D Number of Discards											
Moon Phase	Latitude				Tuna - Yellowfin	YFI												Did not fish today <input type="checkbox"/> or Have not fished for the period [] to []									
Start Position	Longitude (quad)				Bugeye	BET												In port because: Broken down <input type="checkbox"/> Weather <input type="checkbox"/> Other []									
Surface Temp (°C)					Albacore	ALT												At sea but not longlining because of: Weather <input type="checkbox"/> Other <input type="checkbox"/> Other fishing - trawling [] - trapping [] - prawning []									
Line Shot Started (eq 1300)					Sth. Bluefin	SBT												Port Code []									
Bottom Depth (m/f)					Skipjack	SKT												Comments []									
Current Direction (eq NE)					Broadbill	BBL																					
No. of Hooks Set					Martin - Black	BKM																					
No. of Hooks per Float					- Blue	BLM																					
Depth of Deepest Hook (m-f)					- Striped	STM																					
Soak Time (hrs)					Sailfish	SAF																					
Line Patrolled (Y or N)					Spearfish	SPF																					
Bait		Bait Type			Other Fish	OTH																					
Redbait []	Bar Tail []				Shark - H. Head	SHH																					
Yellowtail []	Squid []	Fresh []			- Mako	SHM																					
Gummy Mackerel []	Mixed []				- Whaler	SHW																					
Jack Mackerel []	Other []	Frozen []			Other	SHO																					
List other in comments																											

Species Code	Fish Number	Weight (kgs)	Length (cms)	Mkt E or D	Species Code	Fish Number	Weight (kgs)	Length (cms)	Mkt E or D	Species Code	Fish Number	Weight (kgs)	Length (cms)	Mkt E or D	Species Code	Fish Number	Weight (kgs)	Length (cms)	Mkt E or D

Primary Industries and Energy 10/2/93 March 1993	Tag Recoveries (see form at back of book)	Tag Numbers
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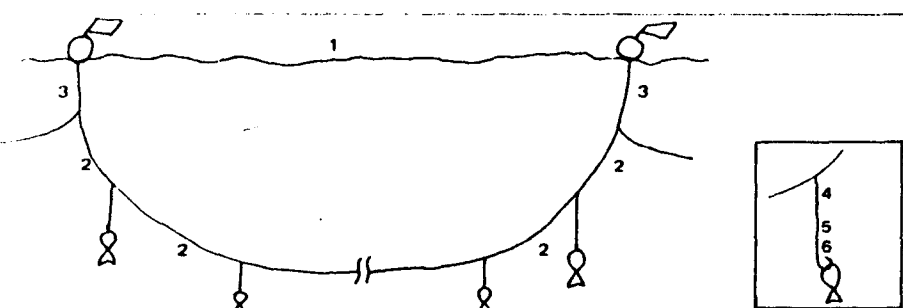
Commonwealth of Australia
 Fisheries Regulations 16(1)

Gear and Boat Details

Australian Tuna Longline Log

Commonwealth of Australia
Fisheries Regulations 16(1)

Log Number	0195	Boat Name		Boat Registration No.	
				LFB	
		Skipper		State of Registration (first two initials)	

Gear Details	Boat Details
1. Distance between floats <input type="text"/> metres	Power <input type="text"/> kw
2. Length of main between branch lines <input type="text"/> metres	Fuel capacity <input type="text"/> litres
3. Length of float line <input type="text"/> metres	Maximum fish carrying capacity <input type="text"/>
4. Length of branch line <input type="text"/> metres	Deck box capacity <input type="text"/> tonnes
5. Length of sekiyama <input type="text"/> metres	Boat dimensions (m) — Length <input type="text"/> Beam <input type="text"/> Depth <input type="text"/>
6. Length of leader (trace) <input type="text"/> metres	
7. Number of branch lines per basket <input type="text"/>	
Type of line — nylon monofilament <input type="checkbox"/> kuralon <input type="checkbox"/>	
	Fishing Details Principal operations of vessel Royal Red prawn trawling <input type="checkbox"/> Finfish trawling <input type="checkbox"/> Sharking <input type="checkbox"/> Other prawn trawling <input type="checkbox"/> Danish seining <input type="checkbox"/> Scalloping <input type="checkbox"/> Other (please specify) Method of storing catch Freezer <input type="checkbox"/> Ice <input type="checkbox"/> Brine <input type="checkbox"/> Storage temperature <input type="text"/> °C Facsimile receiver Yes <input type="checkbox"/> No <input type="checkbox"/> Satnav facility available Yes <input type="checkbox"/> No <input type="checkbox"/> Sea surface temperature recorder Yes <input type="checkbox"/> No <input type="checkbox"/>

Owner Details	Skipper Details	Please return to: Logbook Co-ordinator Australian Fisheries Service Department of Primary Industries and Energy G.P.O. Box 858 CANBERRA A.C.T. 2601
Name	Name	
Address	Address	
Phone	Phone	

3183

まぐろはえなわ漁業操業日誌

信 号 符 号

ナーストラリア 魚果水産

VESSEL NAME:

[illegible]

AUSTRALIAN LICENCE No.:

オ-ストリリア通 策 許可番号

NAME OF CAPTAIN

船 長 名

* Large -- over 40 kgs, Mediums - 25 to 40 kgs, Small - less than 25 kgs

注： 船名及び船長名はローマ字で記入して下さい。

ながら「くろの」大は、中「中」1139p.

“小”は字下げ下（それぞれホラ・ハラ抜き）を記へして下さい。

中 國 郵 政 (CHINA POSTS) 總 局 (T.S.O.)

[illegible]

On each day write number of fish caught by species on Line A, and weight of fish caught by species on Line B (Give weight in tonnes - for example "0.567" - and use processed weight)

「A」 行には毎日の魚種別漁獲尾数を記入して下さい

“B” 日に日加日の魚地別漁獲重量と、これを日製品重量全一の単位と、

[illegible]

Department of Primary Industry
Japanese Longline Tuna Catch Record
Japanese/English (V4) August 1990 T1 84
PI0281-8/80

GEAR STRUCTURE OF LONG LINE
AND
IMAGINED CATENARIAN OF THE LINE

オーストラリア漁業局提出用漁具図

DATE OF REPORT

提出日

15 8 1986
DAY MONTH YEAR
日 月 年

VESSEL NAME (船名) CHIKO MARU No 71

RADIO CALL SIGN (信号符号) 7 J T M

NAME OF CAPTAIN (船長名) SHOZO SUZUKI

TYPE A

Target species BIGEYE TUNA

漁獲対象魚

Duration from 11 5 1986

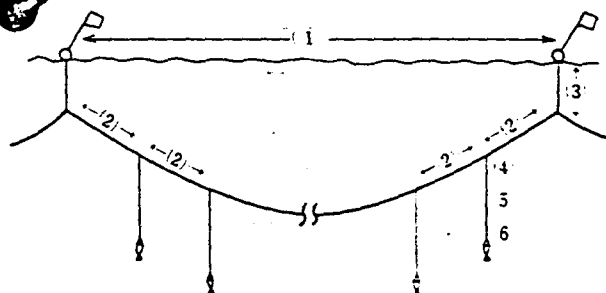
期間から DAY MONTH YEAR

日 月 年

to 28 5 1986

まで DAY MONTH YEAR

日 月 年



- (1) Distance between floats うきとうきとの間隔 280 M
- (2) Length of main line between branch lines 幹線の枝線を付ける間隔 40 M
- (3) Length of float line うけ縄の長さ 15 M
- (4) Length of branch line 枝線の長さ 20 M
- (5) Length of Sekiyama セキヤマの長さ 10 M
- (6) Length of Wire leader 釣元ワイヤーの長さ 2 M
- (7) Number of branch lines per basket 鉢当りの枝線数 2 M

TYPE B

Target species BIGEYE TUNA

漁獲対象魚

Duration from 20 5 1986

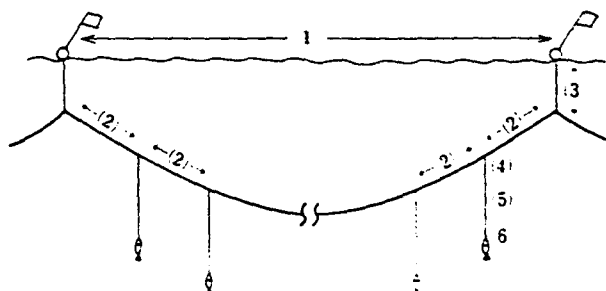
期間から DAY MONTH YEAR

日 月 年

to 31 7 1986

まで DAY MONTH YEAR

日 月 年



- (1) Distance between floats うきとうきとの間隔 280 M
- (2) Length of main line between branch lines 幹線の枝線を付ける間隔 40 M
- (3) Length of float line うけ縄の長さ 10 M
- (4) Length of branch line 枝線の長さ 20 M
- (5) Length of Sekiyama セキヤマの長さ 10 M
- (6) Length of Wire leader 釣元ワイヤーの長さ 2 M
- (7) Number of branch lines per basket 鉢当りの枝線数 2 M

この報告は、オーストラリアの「まぐろはえなわ操業日誌」とともに下記へ送付して下さい。

LOGBOOK CO-ORDINATOR
FISHERIES DIVISION
DEPARTMENT OF PRIMARY INDUSTRY,
CANBERRA A.C.T. 2601
AUSTRALIA

Starting Date for Page

Day Month Year (19..)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
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Boat Name:

Skipper:

Australian Boat
Registration Number

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
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State of
Registration (three
initials of
State Name)

ACTIVITY (every day)			BAITING (fill in on days baiting finishes)		SEARCHING (fill in on days when you are searching)		ESTIMATED CATCH (fill in on days when you catch fish)										ACTUAL LANDINGS (fill in on days when you land fish)																																																				
			A		B		C		D																																																												
			Main species of bait caught:		Noon Position (local time)		Number of hours spent searching (to nearest hour)		Type of Searching:		1 - 3		13 - 15		16 - 18		19 - 21		Surface Temperature where fish taken		If purse seiner helped give code (see front of book)		22 - 24		25 - 27		28 - 30																																										
			P P Y M						1. Without air support 2. With air support		B C D S B F		Southern Bluefin Tuna		Other Species (see front of book for codes)		Code: Code:				S B F		Southern Bluefin Tuna		Other Species (see front of book for codes)		Code: Code:																																										
			Number of hours spent baiting (to nearest hour)		Latitude		Longitude		Number of Patches		Catch (tonnes)		Fish Average Weight (kg)		Catch (tonnes)		Catch (tonnes)		Code				Landings (tonnes)		Landings (tonnes)		Landings (tonnes)																																										
			Code		Deg. Min.		Deg. Min.		Code		Found Fished								Code																																																		
Day	Month	Code	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

Notes:
Write where necessary

Tag Recoveries:
(see forms at back of
book also;
please complete details
on these)

Tag No.

Date

TUNA POLE & BAIT LOG

Log. No.

0	0	9	C	4	3	5	3	0	0	0	0
1	4	5	8	9	12						

VESSEL DESCRIPTION

Date/...../19...

State of Registration

Insert Boat Registration Number in box.

13	14	15	16	17	18	19	20	21	22
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(first 2 initials of State Name)

Boat Name: Skipper:

Poling Experience (Years)

Power (kw) 23 26

Length (m) 27 28

Gross Tonnes 29 31

Usual Cruising Speed (knots) 32 33

Maximum Range (naut. miles) 34 37

Fuel Capacity (litres) 38 42

Usual Number of Men Poling 54 55

AUTOMATIC MACHINES

Make

Number of Machines 56 57

BAITING GEAR

Type of Net

Length (m)

Drop (m)

Mesh Size (mm)

Maximum Fish Hold Capacity (tonne) 43 45
(including Bait Tanks when used to carry fish)

Deck Load Capacity (tonne) 46 47

Bait Capacity (scoops) 48 51

Average Weight of Scoop (kg) 52 53

SONAR (Y= Yes; N=No) 58

Make & Model

Range

ECHO SOUNDERS

Make & Model

Make & Model

Name & Address of Owner:

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.....
.....

Postcode

Phone:

Name & Address of Skipper:

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.....
.....
.....

Postcode

Department of Primary Industry
English 194 - PDE