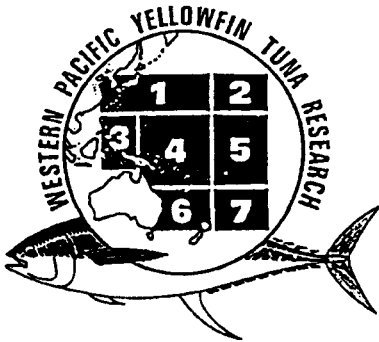


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**EFFECTS OF INTRODUCTION OF MONOFILAMENT LONGLINE GEAR
ON BIGEYE AND YELLOWFIN TUNA CATCHES
IN NEW CALEDONIA**

by

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Up to 1993 all the local longline vessels operating in the waters of New Caledonia were using the traditional (japanese-style) gear. In 1994 monofilament was introduced in the fishery as 3 longliners of this type were registered. 2 more such vessels were imported from France in 1995.

Last year 5 vessels (of a total of 8) were so using a monofilament longline and targeting mainly for bigeye and yellowfin tuna to be exported to the japanese sashimi market.

Their fishing trips are usually limited to 6 days during which 4 longline sets are made. Due to their cruising range these vessels can't operate far from their landing port and thus have a coastal activity.

A. Catches in the five last years

The breakdown of the catches reported by the New Caledonia longline fishery is shown in table 1.

Table 1: Catches from the New Caledonia longline vessels

<i>tonnes (%)</i>	1992	1993	1994	1995	1996 (*)
yellowfin tuna	333 (26%)	387 (29%)	390 (24%)	749 (53%)	723 (56%)
bigeye tuna	24 (2%)	95 (7%)	70 (4%)	92 (6%)	190 (15%)
albacore	692 (54%)	755 (56%)	840 (53%)	332 (23%)	187 (14%)
others	232 (18%)	101 (8%)	300 (19%)	246 (18%)	198 (15%)
Total	1,281 (100%)	1,338 (100%)	1,600 (100%)	1,419 (100%)	1,298 (100%)

(*): Figures for 1996 are estimates.

↑
*Departure of
from 14 vessels.*

It can be noted that:

- yellowfin has become the main species caught since 1995 whereas albacore was predominant until 1994;
- the proportion of bigeye increased sharply in 1993.

B. CPUE of yellowfin and bigeye tuna

The efficiency of the monofilament longline in targetting for bigeye and yellowfin can be assessed by comparing the CPUE of these species caught by the traditional (japanese style) and the monofilament gears.

Table 2: Trends of annual CPUE (kilo per hundred hooks) by traditional (up) and monofilament longlines (down)

traditional monofilament	1992	1993	1994	1995	1996
yellowfin tuna	18.0	25.4	39.5 12.6	34.2 12.6	28.9 12
bigeye tuna	1.3	1.6	1.4 3.6	2.2 5.1	2.5 6.1

Table 2 shows that:

- for yellowfin, the traditional longline remains much more efficient than monofilament;
- monofilament justifies its reputation in targetting bigeye (more than twice as efficient as the traditional gear).

It must be also noted that CPUE of bigeye has increased by 70% from 1994 to 1996 due partially to the better know-how of the crews.

C. Average weights of bigeye tuna

In 1994 and 1995 the catch of small bigeye was reported frequently in the monofilament longline fishery when compared with the traditional gear.

The 1996 data don't confirm the previous ones: the average weight of the "monofilament bigeye" increased slightly from 1995 to 1996 and is now higher than that of the "traditional bigeye" (see table 3 below).

It should noted, however, that an important decrease of the average weight of the "traditional bigeye" might be caused by modifications in the environmental conditions in the western tropical Pacific.

Table 3: Trends of average weight of bigeye tuna (kilo) caught by traditional (up) and monofilament longlines (down)

traditional monofilament	1992	1993	1994	1995	1996
bigeye tuna	41.0	41.3	46.0 34.4	33.7 28.1	21.4 29.7