

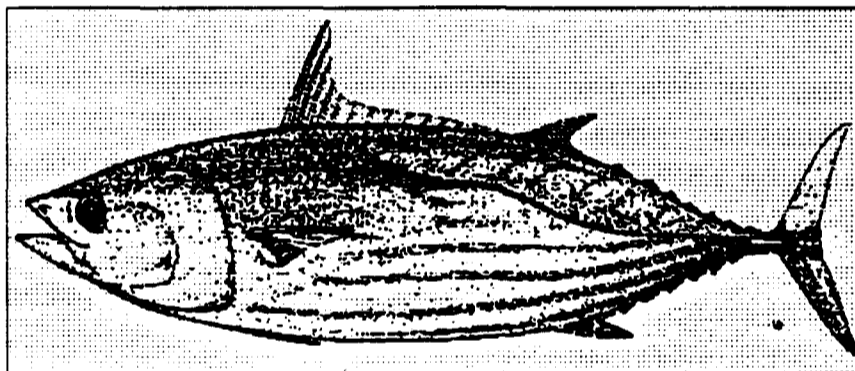
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On-board scientific trip for Korean Tuna Fishery

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Republic of Korea does not have formal observer program but for distant water fishery irregular on-board scientific trips have been carried out since 1991. Especially on-board scientific trips for Korean tuna fishery began in 1992. Table 1 shows the list of on-board scientific trip for Korean tuna fishery conducted in the Pacific Ocean.

Table 1. List of on-board scientific trip for Korean tuna fishery

Year	Fishery type	Area	Period
1992	Longline	Central Pacific	Dec. 23, 1991-Feb. 25, 1992 Aug. 26 - Oct. 13
1993	Purse seine	Western Pacific	Apr. 23 - Jun. 26
	Longline	Central Pacific	May 15 - Jul. 16
1994	Longline	Central Pacific	Apr. 20 - Jun. 23
1995	Purse seine	Western Pacific	May 23 - Jun. 13

The National Fisheries Research & Development Institute (NFRDI) introduced log-book system for Korean distant water fishery to collect fishery data such as catch, effort and biological data and also carried out on-board scientific trip to collect more detail data which can not collect through the log-book system.

This report briefly introduce the result of on-board scientific trip for Korean tuna purse seine fishery.

Korean tuna purse seine fishery started mainly targeting skipjack and yellowfin tunas with one vessels for the first time in the western Pacific Ocean in 1980. Since then, Korea has extended this fishery gradually by deploying more fishing fleets every year and the number of purse seiners was peaked at 39 vessels in 1990. Since then Korean purse seiners have been decreasing in the western and central Pacific area.

Scientific observers went on board 2 Korean purse seiners during May to June 1993 and June 1995, respectively. Each observation were performed near off Papua New Guinea and Solomon Islands (Fig. 1).

In 1993 total 37 set were monitored and they were composed of 34

free-school and 3 log school. The success rate of operation were 47% for free school and 100% for log school, respectively (Table 2). Catches of main species (skipjack tuna, yellowfin tuna and bigeye tuna) were amount of 856.2mt and skipjack and yellowfin were composed about 99%. This mean that target species for Korean purse seine fishery in the western Pacific Ocean are skipjack and yellowfin tuna (Table 3).

List of by-catch species observed and recorded by the observer are shown in table 4. The amount of by-catch was very small.

In addition, log-school catch and species composition data were collected by the NFRDI scientist placed aboard a Korean tuna purse seiner fishing in the high seas between the Papua New Guinea and Micronesia during the late May through the mid-June 1995.

During the scientific observation, in 1995 a total of 6 sets were made for log-school fishing but no sets were tried for free-school of tunas. The floating objects were from natural origin with four different sizes of logs; 3, 5, 8 and 15 m long (Table 5). A total of 14 species comprising skipjack, yellowfin, and bigeye tunas were caught during the scientific observation. Every set was successful with catches ranging from 9.5 to 60.5 mt/set. Skipjack and yellowfin were caught together in all sets on log-schools. Catch per set (CPUE) was high from both 3 m and 15 m logs. Re-settings were made on the same logs (both 3 m and 15 m) within 24 hours. The catches from re-settings were poor over the first sets but it was found that proportion of yellowfin catch was higher than that from the first sets (Table 5).

Log-school catch composition averaged 60%, 38% and 2% for skipjack, yellowfin, and bigeye, respectively (Table 6).

The 11 by-catch species were classified from catches taken at log-school fishing during scientific observation (Table 7).

Table 2. Catch (mt) and CPUE (mt/set) by fishing methods of the Korean tuna purse seine fishery during the scientific observation in the western Pacific from May to June 1993

Fishing method	No. of operation	Rate of success	Skipjack tuna		Yellowfin tuna		Total	
			Catch	CPUE	Catch	CPUE	Catch	CPUE
Free school	34	47	250.4	7.4	554.0	16.3	804.4	23.6
Log school	3	100	10.5	3.5	31.5	10.5	42.0	14.0
Total	37	51	260.9	7.1	585.5	15.8	844.4	22.8

* Fishing effort : 37 sets

Table 3. Catch and CPUE of tunas caught by Korean tuna purse seine fishery during scientific observation from May to June 1993

Species	Catch (mt)	Catch (number)	CPUE (mt/set)
Skipjack (<i>Katsuwonus pelamis</i>)	260.9	76,287	7.1
Yellowfin (<i>Thunnus albacares</i>)	585.5	34,041	15.8
Bigeye (<i>Thunnus obesus</i>)	9.8	852	0.3
Total	856.2	111,180	23.1

* Fishing effort : 37 sets

Table 4. Catch in number and weight (kg) in set of by-catch species during scientific observation from May to June 1993

Species	Catch in number	Catch in weight
Unicorn filefish (<i>Aluterus monoceros</i>)	2,220	1,110
Trigger fish (<i>Pseudobalistics</i> spp.)	1,833	1,100
Flyingfish (<i>Exocoetus monocirrhus</i>)	20	3
Wahoo (<i>Acanthocybium solandri</i>)	1	5
Striped marlin (<i>Tetrapturus audax</i>)	14	1,400
Remora (<i>Remora remora</i>)	18	14
Devilfish (<i>Modula japonica</i>)	3	240
Blueshark (<i>Prionace longimanus</i>)	23	1,150
Total	4,132	5,022

* Fishing effort : 37 sets

Table 5. Species composition for size of log and number of by-catch species during scientific observation in June 1995.

Size of log (m)	Total catch (t)	Species composition (%)			No. of by-catch species	Remark
		Skipjack	Yellowfin	Bigeye		
15	40.0	87.5	12.5	-	3	
15	9.5	5.3	94.7	-	5	re-set
3	60.5	47.9	50.4	1.2	9	
3	10.5	47.6	47.6	4.8	4	re-set
5	30.5	59.0	39.3	1.7	6	
8	36.0	69.4	27.8	2.8	6	

* Fishing effort : 6 sets

Table 6. Catch and CPUE of tunas caught by log-school fishery during scientific observation in June 1995.

Species	Catch (mt)	CPUE (mt/set)	CPUE (mt/day)
Skipjack (<i>Katsuwonus pelamis</i>)	112.5	18.8	6.6
Yellowfin (<i>Thunnus albacares</i>)	71.5	11.9	4.2
Bigeye (<i>Thunnus obesus</i>)	3.0	0.5	0.2
Total	187.0	31.2	11.0

* Fishing effort : 6 sets

Table 7. Catch in number and appearance in set of by-catch species in June 1995

Species	Catch in number	Appearance in set
Shark (Unidentified)	32	6
Rainbow runner (<i>Elagatis bipinnulata</i>)	483	5
Black marlin (<i>Makaira indica</i>)	5	4
Swordfish (<i>Xiphias gladius</i>)	1	1
Manta ray (<i>Manta birostris</i>)	2	1
Stingray (<i>Dasyatis centroura</i>)	1	1
Trigger fishes (2*) (<i>Pseudobalistis</i> spp.)	108	4
Great barracuda (<i>Sphyraena barracuda</i>)	2	2
Spangled emperor (<i>Lethrinus nebulosus</i>)	35	1
Oliver ridley sea turtle (<i>Lepidocchelys olivacea</i>)	2	1

* Fishing effort : 6 sets, () : Number of species

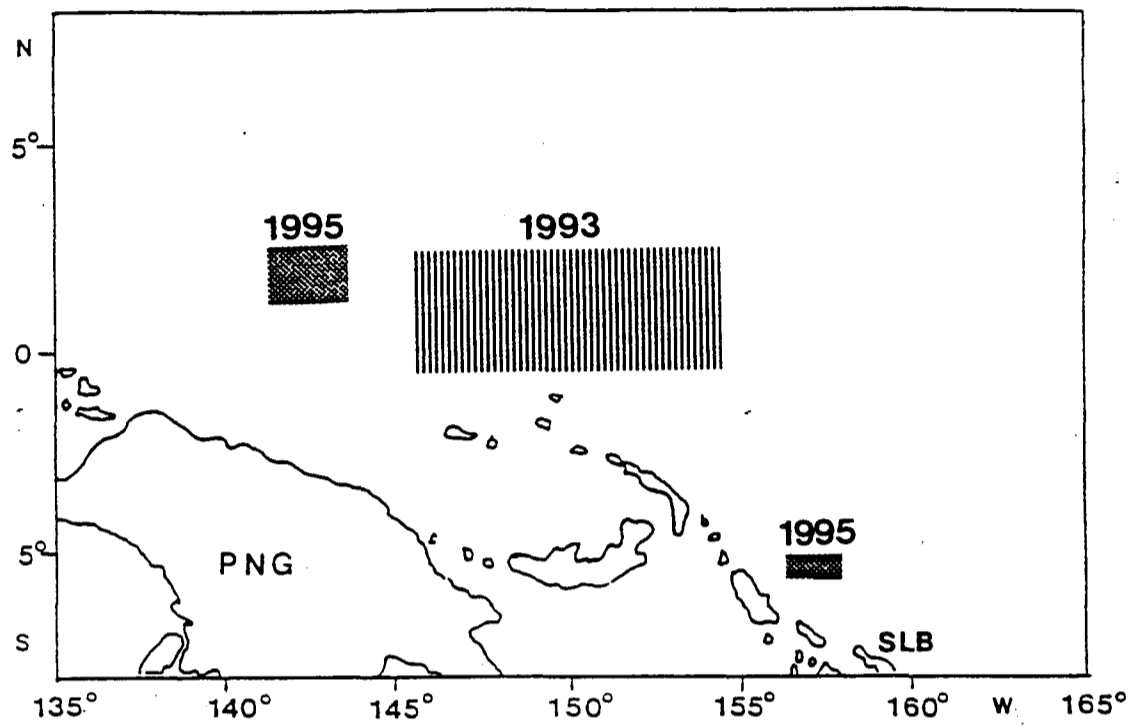


Fig. 1. Map showing the sampling area during the observation period in 1993 and 1995.
PNG: Papua New Guinea, SLB: Solomon Islands