

REPORT ON THE SAMPLING OF IMPORTS OF  
ATLANTIC-CAUGHT TUNAS IN PUERTO RICO, U.S. A.

by

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SUMMARY

Landings of Atlantic-caught tunas by foreign vessels in Puerto Rico, U.S.A., are sampled for length composition and species composition by personnel of the Southwest Fisheries Center. During August-December 1974 and March-September 1975, landings of French, Ghanaian, Japanese, Korean Panamanian and Spanish vessels were sampled. About 1,050 skipjack and 1,480 yellowfin tuna were measured for fork length during August-December 1974, and about 440 albacore, 100 bigeye, 850 skipjack and 2,140 yellowfin tuna were measured during March-September 1975. The length frequency compositions of the sampled landings were estimated and the results presented.

RESUME

Des débarquements de thonidés pris dans l'Atlantique effectués par les bateaux étrangers à Puerto-Rico (USA) sont échantillonnés par des membres du "Southwest Fisheries Center (SWFC)" en vue de déterminer leur composition par tailles et par espèces. D'août à décembre 1974 et de mars à septembre 1975, les débarquements de bateaux français, ghanéens, japonais, coréens, panaméens et espagnols ont été échantillonnés. Environ 1.050 listaos et 1.480 albacores ont été mesurés en longueur fourche d'août à décembre 1974, et environ 440 germons, 100 thons obèses, 850 listaos et 2.140 albacores de mars à septembre 1975. La composition de fréquence de taille des débarquements échantillonnés a été estimée et les résultats présentés.

RESUMEN

Los desembarcos de túnidos en Puerto Rico, USA, capturados en el Atlántico por barcos extranjeros, son sometidos a muestreo por el personal del "Southwest Fisheries Center," para determinar la composición por tallas y especies. Durante los meses de Agosto a Diciembre 1974 y de Marzo a Septiembre de 1975, se efectuó el muestreo de las capturas desembarcadas por barcos franceses, guineanos, japoneses, coreanos, panameños y españoles. De Agosto a Diciembre de 1974, se midió la longitud de horquilla de unos 1.050 ejemplares de listado y 1.480 de rabil; de Marzo a Septiembre de 1975 se midieron unos 440 ejemplares de atún blanco, 100 de patudo, 850 de listado, y 2.140 de rabil. Se calculó la composición de la frecuencia de tallas en las muestras, y se informó de los resultados.

Appendix Table reproduced in Data Record Vol. 7.

Appendice Tableau reproduit dans le Vol. 7 du Recueil de Données.

Appendice Cuadro reproducido en la Vol. 7 de la Colección de Datos Estadísticos.

Virtually all Atlantic-caught tunas, both domestic and foreign, that are marketed in the United States are landed and packed in Mayaguez and Ponce, Puerto Rico. Landings of U.S. vessels have been monitored and sampled since 1967 by the Inter-American Tropical Tuna Commission for the Southwest Fisheries Center (SWFC) under contract arrangements. Results of this monitoring and sampling program are found in Sakagawa and Lenarz (1972), Sakagawa (1974), Sakagawa et al. (MS<sup>1/</sup>), and in Data Records of the International Commission for the Conservation of Atlantic Tunas.

Catches of Atlantic tunas by foreign ships are delivered to Puerto Rico aboard transshipment vessels (refrigerated cargo ships) and they amount to tens of thousand tons annually (Table 1). These landings are classified as imported tuna, or "imports" and are monitored, but

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<sup>1</sup>Sakagawa, G.T., A.L. Coan and E.P. Holzapfel. MS. Length composition of yellowfin, skipjack, and bigeye tunas caught in the eastern tropical Atlantic by American purse seiners. Administrative Report No. LJ-75-71 Southwest Fisheries Center, La Jolla, Calif.

not sampled, by the Statistics and Market News Division of the National Marine Fisheries Service. Sampling of most of this imported catch is also not performed by the exporting countries. Because the landings of imports are large and biological information from the catch is important for evaluating the condition of the exploited stocks, SWFC designed a program of sampling the imports for biological information, i.e., length and species compositions. The program was initiated on a trial basis in August-December 1974 to determine whether a sampling program was feasible. Evaluation of the data from the trial period indicated that sampling was possible and valuable information could be obtained. Therefore, in March 1975 the sampling program was resumed as a regular SWFC activity, subject to annual review. In this report the results obtained from the program to date, October 1975, are presented.

#### SAMPLING PROCEDURES

Imported tuna are landed in Puerto Rico aboard transshipment vessels. The tuna are usually undressed and frozen when landed. Some imported tuna, however, are landed in dressed condition, e.g., gill and gutted with head, and gill and gutted without head.

Sampling of the landings is accomplished at dockside while the tuna are unloaded. Samples of 50 fish each of each species are drawn for fork length measurements. Each sample is drawn from the landing

of a single hold and ancillary information, such as catcher boat name, flag, gear, shipping port, and tonnage of catch recorded. Fish without heads are not sampled.

During the trial period of the sampling program, landings were closely monitored for species composition. Of particular interest was the possibility that small yellowfin tuna were landed as skipjack tuna. Also, because all bigeye tuna are landed in the U.S. as yellowfin tuna the extent of this mislabeling was of interest. The results of the monitoring indicated that mislabeling of small yellowfin tuna as skipjack was insignificant and not a general practice, but the mislabeling of bigeye tuna as yellowfin tuna was significant and contributing to a biased landing of yellowfin tuna. Sampling for species composition is therefore currently limited to primarily the yellowfin tuna landings.

The size of the species composition sample varies. For each sample, fish are drawn and identified until 50 yellowfin tuna have been drawn. The number of each species and the fork length of each fish in the sample are recorded. From this information, the proportion of bigeye tuna in the yellowfin tuna landing is determined.

#### SPECIES COMPOSITION OF YELLOWFIN TUNA LANDINGS

The results of sampling of the yellowfin tuna landings for bigeye tuna (Table 2), indicate that in some seasons a large proportion of

the yellowfin tuna landings contained some bigeye tuna. The amount of bigeye tuna in the landings, however, is relatively small. It ranges from <1% to 16% per season. These results were used to separate the bigeye landings from the nominal yellowfin tuna landings (Table 2).

#### SIZE COMPOSITION OF CATCH

All yellowfin tuna tonnages were adjusted for mixture of bigeye tuna and all landings of gill and gutted fish were converted to round weight by multiplication by the factor, 1.15.

Length-frequency samples were then used to estimate the size composition of fish in the sampled tonnages (Table 3) and the results were summarized by season (August-September 1974, April-June 1975, and July-September 1975) and gear (surface-baitboat and purse seine, and longline).

Highlights of the results (Appendix Tables 1-9) are: (1) primarily small yellowfin tuna were landed by baitboats and purse seiners; (2) one dominant modal group is represented in the skipjack landings (Figure 2); and (3) a wide range of sizes of albacore and bigeye tuna are landed.

#### LITERATURE CITED

- Sakagawa, G.T. 1974. Participation by Panamanian and U.S. seiners in 1972 tuna fishery of the eastern tropical Atlantic. Mar. Fish. Rev., 36(3): 10-13.
- Sakagawa, G.T., and W.H. Lenarz. 1972. American participation in tuna fishery of eastern tropical Atlantic. Mar. Fish. Rev., 34(11-12): 55-65.

Table 1. Landings (metric tons) by foreign vessels of Atlantic-caught tunas in Puerto Rico for 1970-74<sup>1</sup>

Year	Albacore	Skipjack	Yellowfin <sup>2</sup>	Total
1970	34,322	7,970	5,414	47,705
1971	26,258	13,709	9,832	49,800
1972	48,249	41,785	23,736	113,760
1973	45,654	32,934	20,106	98,694
1974	25,627	49,315	17,349	92,291

<sup>1</sup>Tonnage is based on actual weights, not adjusted for whether fish were gutted or not.

<sup>2</sup>Bigeye tuna are included with yellowfin tuna in landing weights.

Table 2. Tonnages (metric tons) of yellowfin tuna landings sampled for mixture of bigeye tuna

Year	Sampling period	Tonnage sampled			Percentage of yellowfin in mixed tonnage
		Total	Pure	Mixed	
1974	Aug-Dec	1012	338	674	96
1975	Apr-Jun	1115	71	1044	83
	Jul-Sept	604	575	29	100 <sup>1</sup>

<sup>1</sup>Less than 1% of the tonnage was bigeye tuna

Table 3. Foreign landings (metric tons) and number of fish sampled for length frequency in Puerto Rico, U.S.A., in 1974-75 by the Southwest Fisheries Center

Year	Sampling period	Gear	Country	Albacore		Bigeye		Skipjack		Yellowfin			
				Tonnage	# Fish	Tonnage	# Fish	Tonnage	# Fish	Tonnage	# Fish		
1974	August-December	Baitboat and purse seine	Ghana					18	50	6	50		
			France					388	100				
			Japan					282	150	854	123		
			Korea					96	100	36	50		
			Panama					100	50	92	150		
			Spain					3664	600				
			TOTAL					4548	1050	988	1485		
1975	April-June	Baitboat and purse seine	Japan			2	50	179	150	94	400		
			Korea			19	30	237	200	158	390		
			Panama					114	150	66	200		
			Mixed <sup>1</sup>					108	25	938	201	621	550
			TOTAL					129	105	1468	701	939	1540
	Longline	Korea	199	50									
		Mixed <sup>1</sup>	1868	243									
		TOTAL	2067	293									
		TOTAL	2067	293	129	105	1468	701	939	1540			
		TOTAL	2067	293	129	105	1468	701	939	1540			
July-September	Baitboat and purse seine	Ghana					78	100	22	150			
		Japan					103	100	54	51			
		Korea							29	50			
		Panama							376	250			
		Spain											
		Mixed <sup>1</sup>							121	50			
		TOTAL							540	150	604	601	
Longline	Mixed <sup>1</sup>	1058	150										
	TOTAL	1058	150					540	150	604	601		

<sup>1</sup>Catches were landed in Africa, stored and then shipped to Puerto Rico. The catcher vessels were not identified.

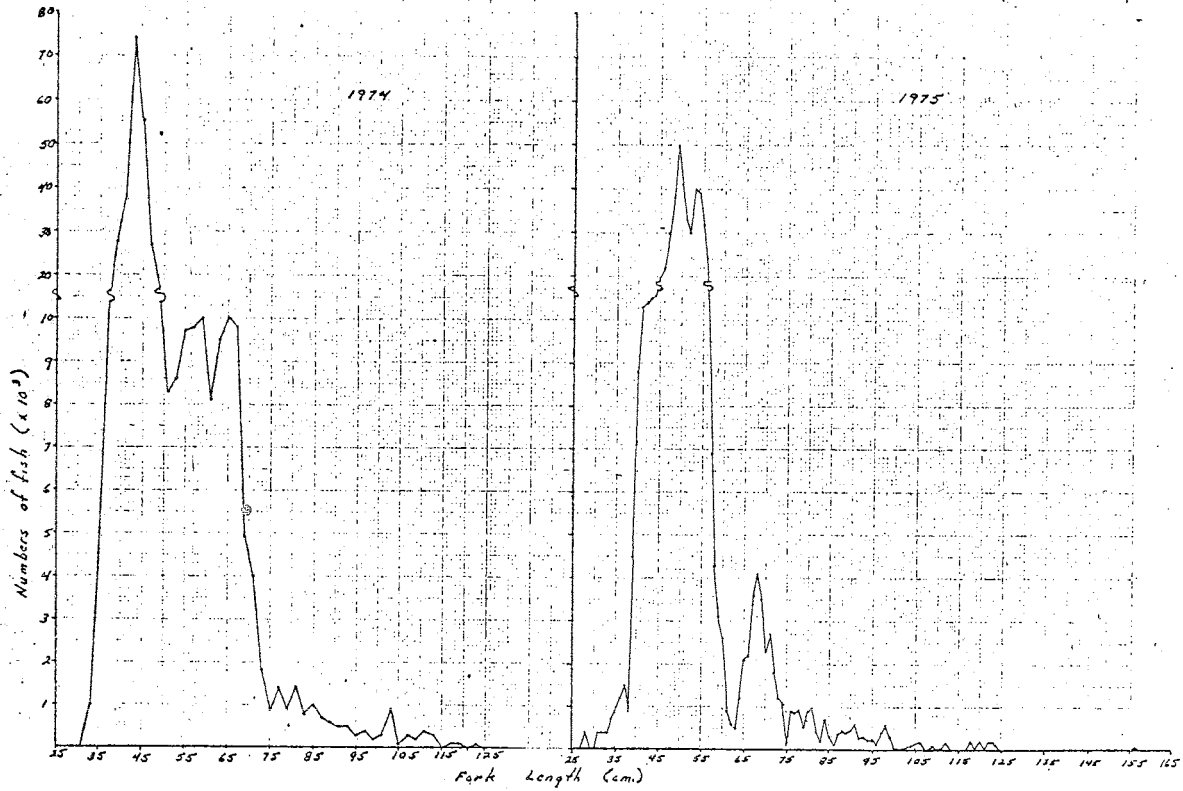


Figure 1. Length-frequency distribution of foreign landings of yellowfin tuna that were sampled during August-September 1974 and April-September 1975 in Puerto Rico

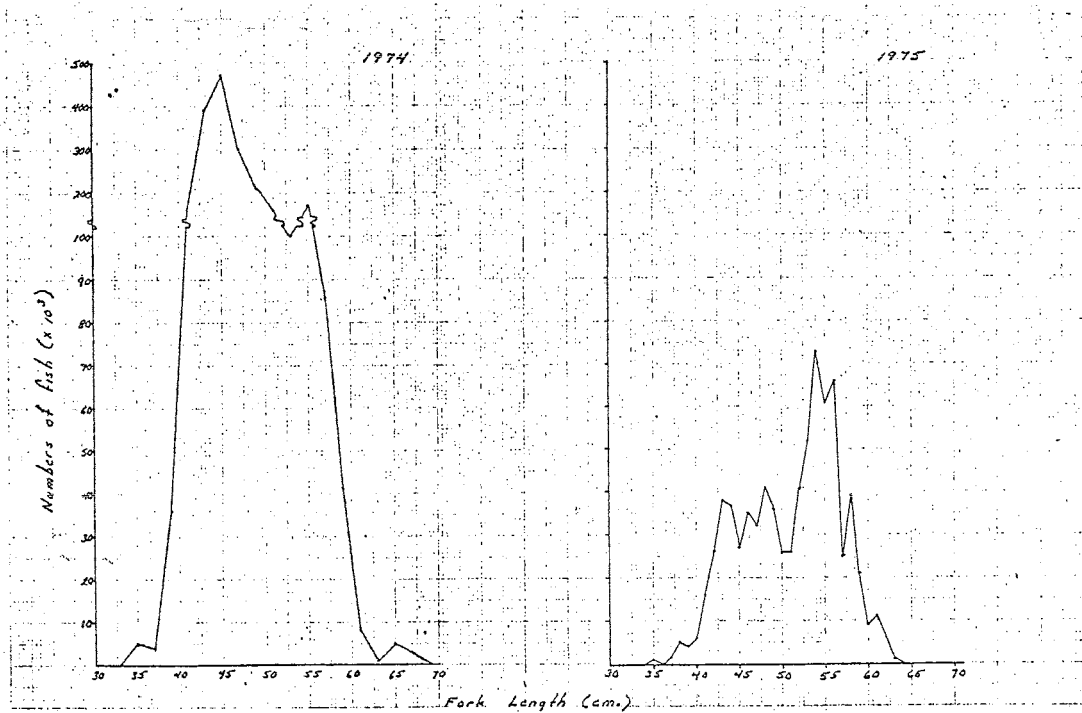


Figure 2. Length-frequency distribution of foreign landings of skipjack tuna that were sampled during August-September 1974 and April-September 1975 in Puerto Rico