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STATE OF ALASKA
THE LEGISLATURE

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May, 1986

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Jeanie Henry

House Special Committee on Fisheries, 5/7/85, 8:30 am

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

April 25, 1985

MEMORANDUM

TO: Representative Peter Goll

FROM: Katherine Hazard KH
Legislative Analyst

RE: Salmon Interception by Foreign Fleets
Research Request 85-321

You requested information about the economic value of Alaska-bound salmon intercepted by the foreign fishing fleets. You asked specifically for: 1) the estimated ex-vessel value of the intercepted fish based upon the average weight and price per pound of commercially caught salmon; 2) the estimated wholesale value of the intercepted fish; 3) the estimated revenue which would accrue to the State of Alaska through the Fisheries Business Tax if these fish were processed in Alaska; and 4) the area of origin and number, by species, of salmon intercepted by the foreign fishing fleets.

Steve Pennoyer and Charles Meacham Jr., of the Department of Fish and Game, provided information for these estimates. They are preparing a table of their calculations which will be forthcoming.

SUMMARY

Estimates of the economic loss to Alaska from interception of Alaska-bound salmon by Japanese mothership and landbased driftnet fisheries are:

Ex-vessel value ..... $ 16.1 million

First wholesale value ..... $ 30.5 million

Fisheries Business Tax Loss $643,000

The ex-vessel values for all salmon sold to processors in 1983 was $320.6 million. The first wholesale value for salmon in the state in 1983 was $726.4 million. Thus the estimated loss from interception of salmon is approximately 5 percent of the ex-vessel value, and approximately 4 percent of the first wholesale value.

INTRODUCTION

The calculations of estimated losses are based solely on Japanese mothership and landbased driftnet fisheries interceptions. Estimates of the number of Alaska-originating salmon intercepted by the foreign fishing fleets are incomplete because much of the information is still unknown. The greatest number of salmon are caught by the Japanese mothership (MS) and Japanese landbased driftnet (LB) fisheries. It is for these two fisheries that the most data are available. There are two other fisheries of relevance; the Taiwanese fishery and the foreign and joint-venture trawlers.

Very little is known about the number of salmon caught by the Taiwanese fishery. There is no information on the species composition or origin of these fish. Foreign and joint-venture trawlers caught an estimated 19,700 chinook, 36,400 chum and 400 other salmon during 1983. Mr. Meacham said that although there are no data on the origin of these fish, probably all of them are Alaska-bound.[1] Nothing is known of the size or age composition of these fish, so for several reasons, there is not currently a reliable means of calculating how many of these fish could, if not intercepted, be caught by Alaska fisheries.

According to Mr. Meacham,[2] estimates of salmon catches in 1983 for the North Pacific foreign fleets were:

Japanese mothership	9.4 million
Japanese landbased	15.8 million > 25.2 million
Taiwan	3.5 to 4 million
Foreign and Joint-Venture Trawlers	56,500

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[1] An outline entitled "High Seas Salmon Interception Fisheries", included in the packet of information submitted to us with your research request, had incorrect figures listed for intercepted salmon. The outline had no source listed. Steve Pennoyer, of the Department of Fish and Game, said that 16,000,000 is the number of salmon caught by the Japanese landbased fisheries, and 8-9,000,000 is the number of salmon caught by the Japanese mothership fisheries. These are not the number of intercepted fish. He did not know the origin of the data for the Taiwanese and Other fisheries.

[2] Charles Meachum, Alaska Department of Fish and Game in Anchorage: Telephone number, (907) 267-2112.

JAPANESE MOTHERSHIP AND LANDBASED DRIFTNET FISHERIES

Number Caught

Estimates of the number of salmon caught by Japanese mothership and landbased driftnet fisheries fleets are listed in Table 1. These catch data are reported in the International North Pacific Fisheries Commission documents.

Number Intercepted

Estimates of the number of salmon intercepted are also shown in Table 1. The interception figures for sockeye are based on the mean percentage intercepted of the total catches for the years from 1978 to 1981, in which studies were done. These percentages were applied to the 1983 sockeye catch to derive an interception estimate. Estimates for chinook are based on studies done from 1982-84 by the Fisheries Research Institute on contract to Fish and Game.[3]

Mr. Meacham provided estimates of the number of chums intercepted by the MS fisheries, but there are no estimates of chum intercepted by the LB fisheries. However, Dr. Harris said that essentially none of the chum caught by the LB fisheries are of North American origin.

Although total catch figures are available from the International North Pacific Fisheries Commission documents, there are no estimates of the number of pinks intercepted. Mr. Meacham and Dr. Harris both said that an insignificant amount of the pink salmon caught by the Japanese fleets are of North American origin.

Dr. Colin Harris of the Fisheries Research Institute at the University of Washington, would not make estimates of the number of cohos intercepted.[4] He said that significant numbers are taken by the mothership fishery, but he did not know of a reliable way to estimate the numbers. Mr. Meacham provided rough estimates of cohos intercepted.

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[3]Rogers, Donald E. et al. 1984, "Origins of Chinook Salmon in the Area of the Japanese Mothership Salmon Fishery", FRI-UW-8408, Final Report to the Alaska Department of Fish and Game, Contract No. 84-0152, Fisheries Research Institute School of Fisheries, University of Washington, Seattle, Washington.

[4]Dr. Colin Harris, Fisheries Research Institute, University of Washington, (206) 543-7281.

Dr. Harris also stated that most of the cohos intercepted by the LB fleet are of western origin. He said, however, that many of the Bristol Bay cohos are unexploited anyway, so that it would be hard to say that cohos intercepted by the Japanese fleet yield an economic loss to Alaska. For this reason cohos are excluded from the values reported in the summary on page one of this memorandum.

Area of Origin

Studies by the Fisheries Research Institute provide estimates of the area of origin for chinook salmon caught by mothership and landbased driftnet fisheries. In 1983, an estimated 200,000 Alaska-bound chinook salmon were intercepted by the Japanese MS and LB fisheries. Of these an estimated 75,000 (37%) were from western Alaska stocks, 106,000 (53%) from central Alaska and 19,000 (9.5%) were of Southeast Alaska or British Columbian stocks.[5]

According to Dr. Harris, the great majority of the 427,000 sockeye, 44,000 chum and the cohos intercepted by the Japanese fleets are of western or central Alaska origin.

Estimated Loss of Salmon to Alaska Due to Interception

An estimated 1,099,000 salmon of Alaska origin are intercepted by Japanese mothership and landbased fisheries. To calculate the pounds of salmon available inshore if these salmon had not been intercepted, the natural mortality, drop-out rate and growth rate must be applied to the numbers intercepted. Together these factors comprise the yield loss multiplier.[6]

Natural Mortality: Not all of the fish caught on the high seas would have survived to return to Alaska waters, particularly since many of the fish intercepted are immature and would have several years on the high seas before returning to their origin.

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[5]The Bristol Bay area is in the Central Region, as classified in the Alaska 1983 Catch and Production Commercial Fisheries Statistics, Statistical Leaflet No. 36.

[6]These factors and the formula are described by Richard J. Major in greater detail in the International North Pacific Fisheries Commission Document 2558.

Drop-out Rate: The drop-out rate accounts for fish which are caught in the Japanese fisheries nets, but drop-out as the nets are hauled in. These salmon die as part of the fishery, but are not included in the catch figures. For the drop-out rate, a multiplier of between 1.33 and 2.00 is used by Fish and Game.

Growth Rate: Many salmon caught on the high seas are immature. The growth rate accounts for the estimated increase in size between the time the salmon are caught on the high seas and the time they would have been caught if allowed to progress to inshore waters.

The formula used by Fish and Game is:

> interception number x mean wt. on high seas for each species x yield loss multiplier = total lbs. available inshore.

This formula yields the estimated total pounds of salmon that would be available inshore. These figures are presented in Table 2. Because, as indicated by Dr. Harris, interception of cohos may have no economic effect on the Alaskan fishery, two sets of calculations were made: one without intercepted cohos and one including intercepted cohos.

There is an estimated loss of 10.14 million lbs. of chinook salmon. Assuming that 90 percent of these are of western or central origin, 9.12 million lbs. of the intercepted chinook were from this region. In 1983 the commercial catch of chinook in central and western Alaska was 11.06 million lbs.

There is an estimated loss of 5.85 million lbs. of sockeye; 296.11 million lbs. were landed by the commercial fleet in central and western Alaska in 1983. For chum, an estimated .72 million lbs. were intercepted by the Japanese fleet; 68.49 million lbs. were landed by the commercial fishery in western and central Alaska.

Ex-vessel Value

The ex-vessel value was calculated by multiplying the estimated number of pounds of each species by the statewide average price in 1983.[7]

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[7]Alaska 1983 Catch and Production Commercial Fisheries Statistics, Statistical Leaflet No. 36, December 1984, Alaska Department of Fish and Game.

Wholesale Value

The wholesale value was calculated by multiplying the ex-vessel value by 1.9. The prices to fishermen and the wholesale values vary from year to year. In 1983, the wholesale value for all salmon was 2.26 times greater than the ex-vessel value. Prices to fishermen were low in 1983, and the ratio was higher than usual. Between 1978 and 1983 the ratio has varied from 1.88 to 2.26.

Fisheries Business Tax

The Fisheries Business Tax on salmon ranges from 3 percent to 5 percent of the ex-vessel value, depending upon how the fish are processed. It is not possible to estimate how fish currently intercepted by foreign fleets would be processed if allowed to progress to Alaska waters. Based on the estimates of ex-vessel values, revenue from the Fisheries Business Tax would range from $482,452 to $804,086.

In 1983, revenue from the Fisheries Business Tax was $20,516,686. In 1984 revenue from the Fisheries Business Tax was $18,979,226. The mean estimated value of lost revenue is 3.3 percent of the mean revenue from 1983 and 1984.

* * * * *

Time constraints for completion of this memorandum precluded more detailed analysis and literature review. Statistics for 1984 are not currently compiled, but could be obtained through further research effort. Please let us know if you have further questions or would like a more detailed analysis.

KH

Attachments

Table 1. Total Catches and Interception of Salmon by Japanese Fleets in Thousands of Fish -- 1983

Species	Japanese Mothership Only		Japanese Landbased Only		Japanese MS and LB		% of Total Catch
	Intercepted	Total	Intercepted	Total	Intercepted	Total	Intercepted
sockeye	336	1,655	91	828	427	2,483	17.2
chinook	67	87	133	178	200	265	75.5
chum	44	3,081	0	2,395	44	5,476	0.8
pink	0	4,324	0	11,308	0	15,632	0.0
coho	74	297	354	1,122	428	1,419	30.2
total	521	9,444	578	15,831	1,099	25,275	4.3

Source: Department of Fish and Game.

Prepared by the House Research Agency, April 1985

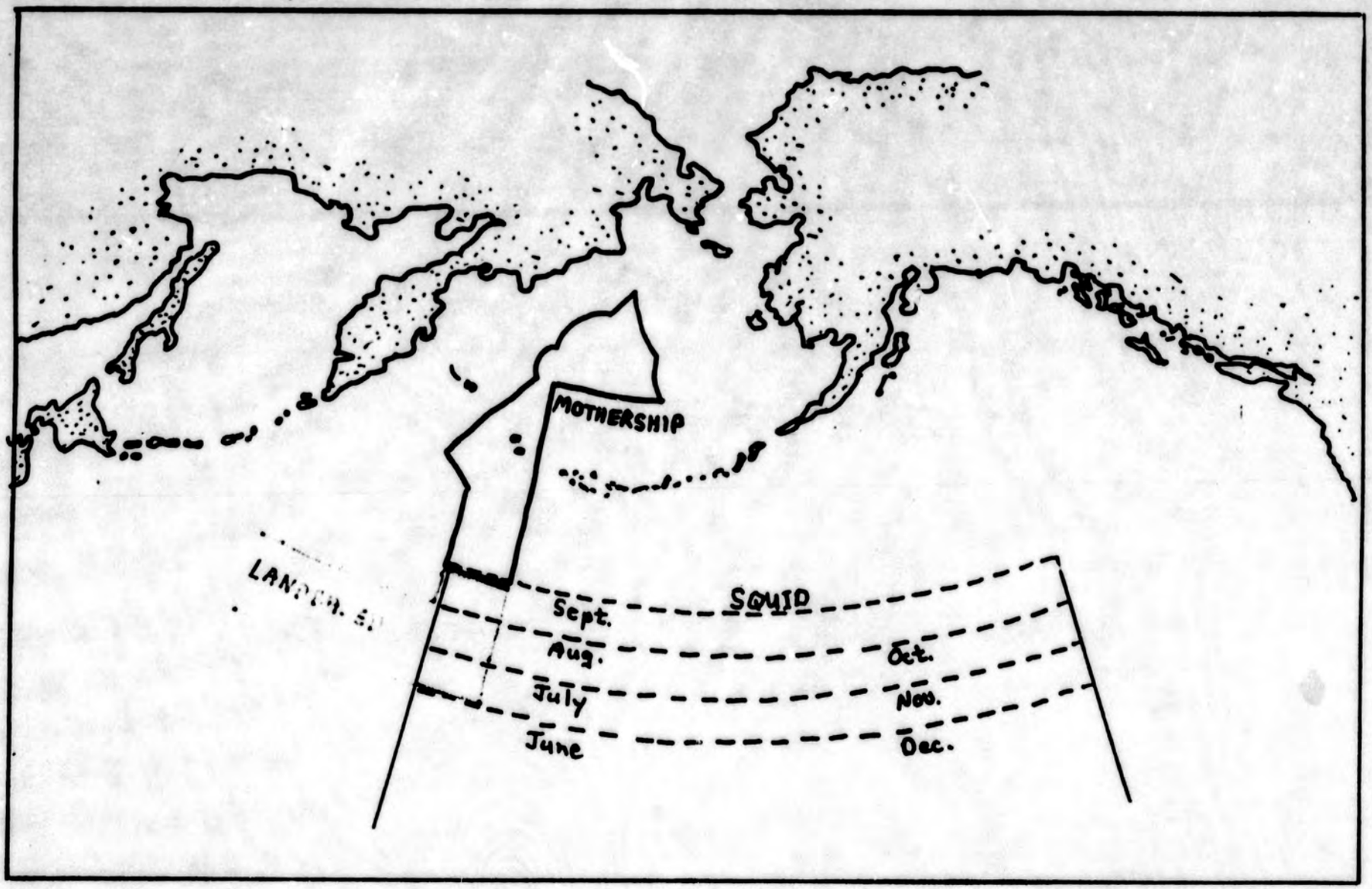
Table 2

Estimated Value of Salmon Intercepted by Japanese Mothership and Land-based Driftnet Fisheries

	Salmon Loss in Pounds			Mean Price Per Pound	Ex-vessel Value	Wholesale Value
	MS	LB	Total			
Sockeye	4,680,000	1,172,000	5,852,000	.70	$ 4,096,000	$ 7,782,400
Chinook	3,001,000	7,134,000	10,135,000	1.16	11,756,600	22,337,540
Chum	716,000	NA	716,000	.60	229,120	435,328
Coho	1,162,000	3,907,000	5,069,000	.60	3,041,000	5,777,900
Subtotal (w/out cohos)	8,397,000	8,306,000	16,703,000		$16,081,720	$30,555,268
Total (w/ cohos)	9,559,000	12,213,000	21,772,000		$19,122,720	$36,333,168

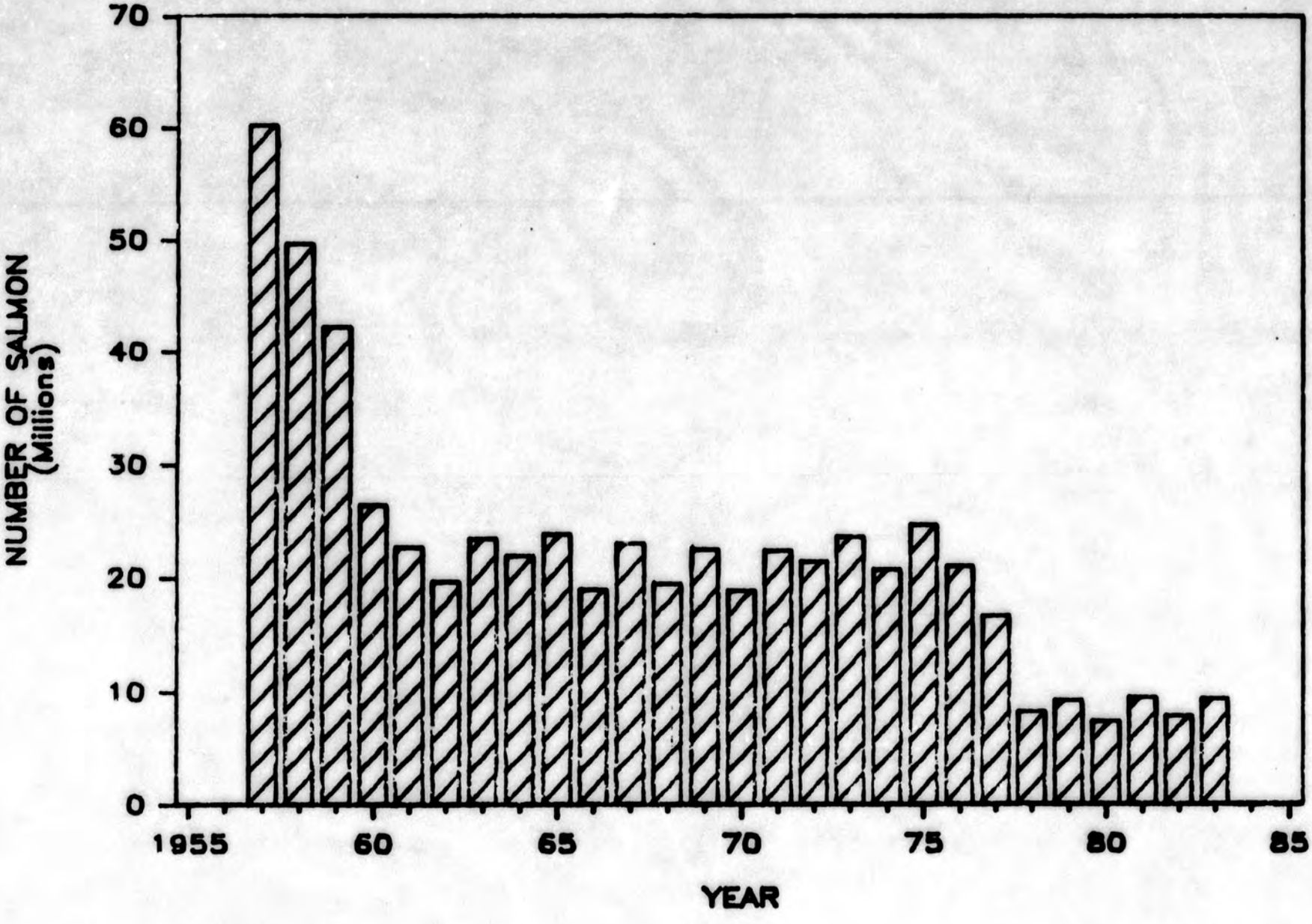
Source: Department of Fish and Game.

Prepared by the House Research Agency, April 1985

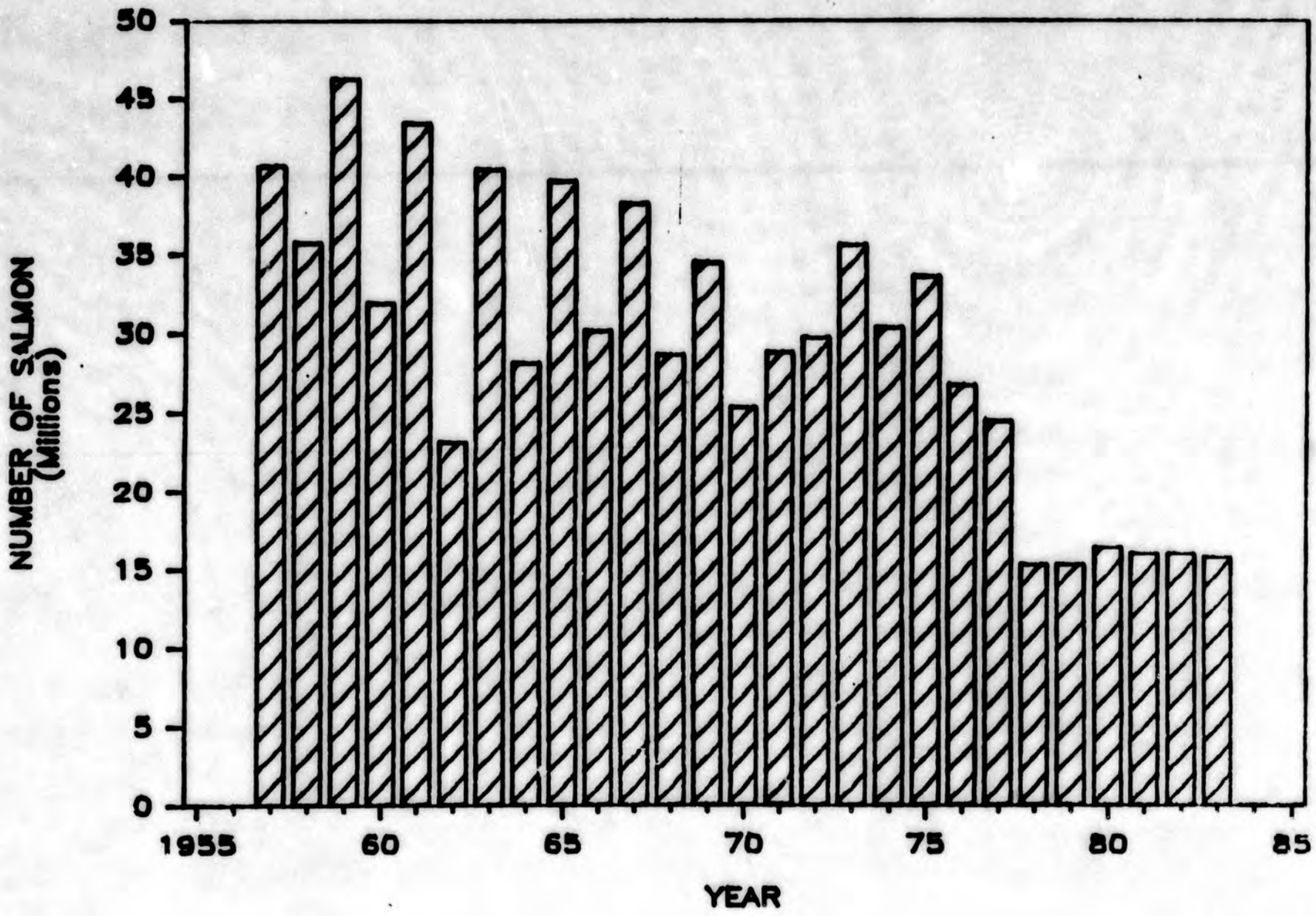

MOTHERSHIP
LANDING S.
SQUID
Sept.
Aug.
July
June
Oct.
Nov.
Dec.

	SQUID GILLNET	SALMON LANDBASED GILLNET	SALMON MOTHERSHIP GILLNET
VESSELS	534	209	172
MESH SIZE	4 1/2 INCH	4 1/2 INCH	4 1/2 INCH
MILES NET (APPROX.)	10,000	3,000	1,500
SEASON	JUNE-DEC.	MAY-JULY	JUNE-JULY
CATCH (1981)	82,000 TONS SQUID	16 MILLION SALMON	10 MILLION SALMON

HIGHSEAS MOTHERSHIP SALMON CATCH

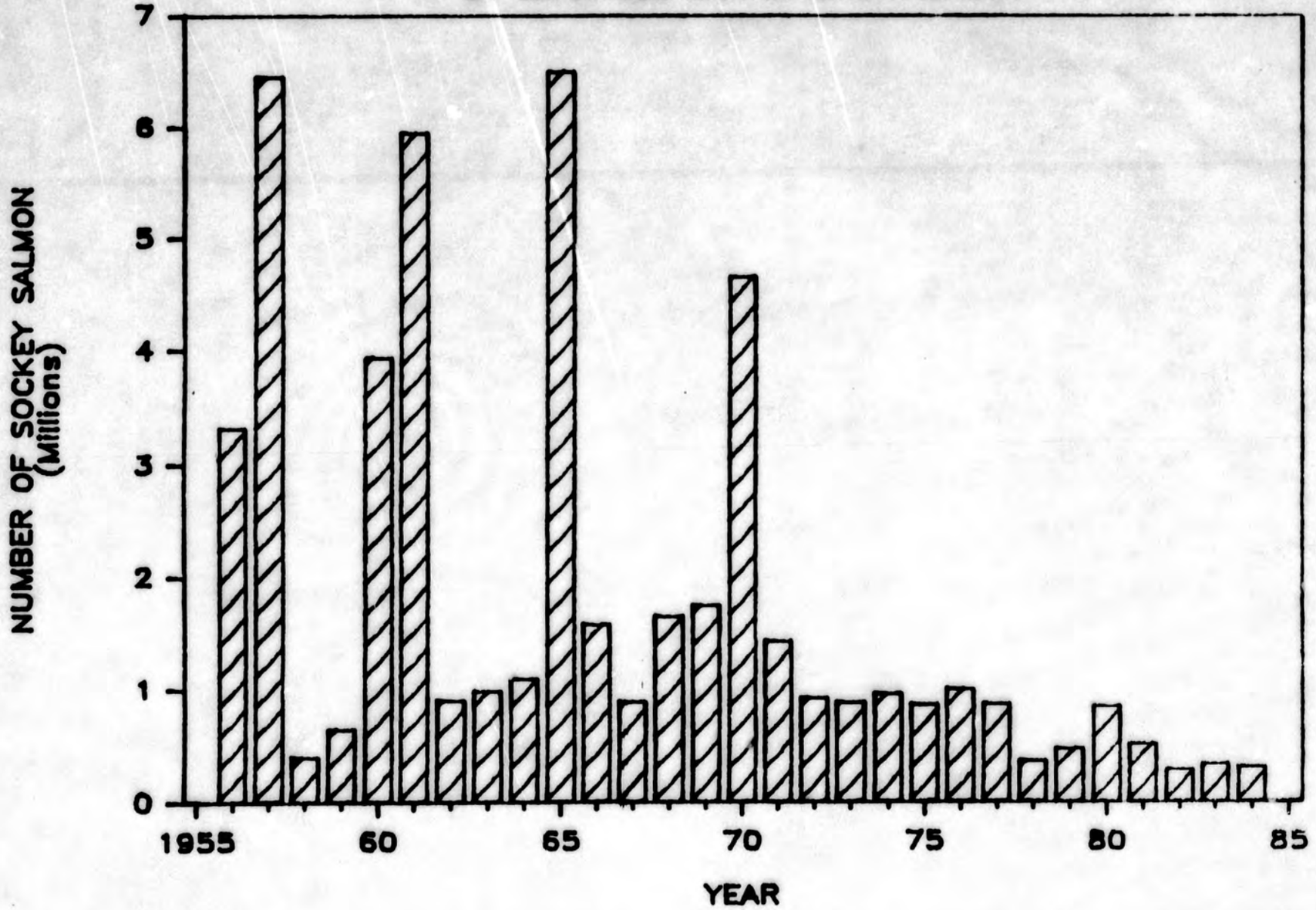


HIGHSEAS "LANDBASED" SALMON CATCH

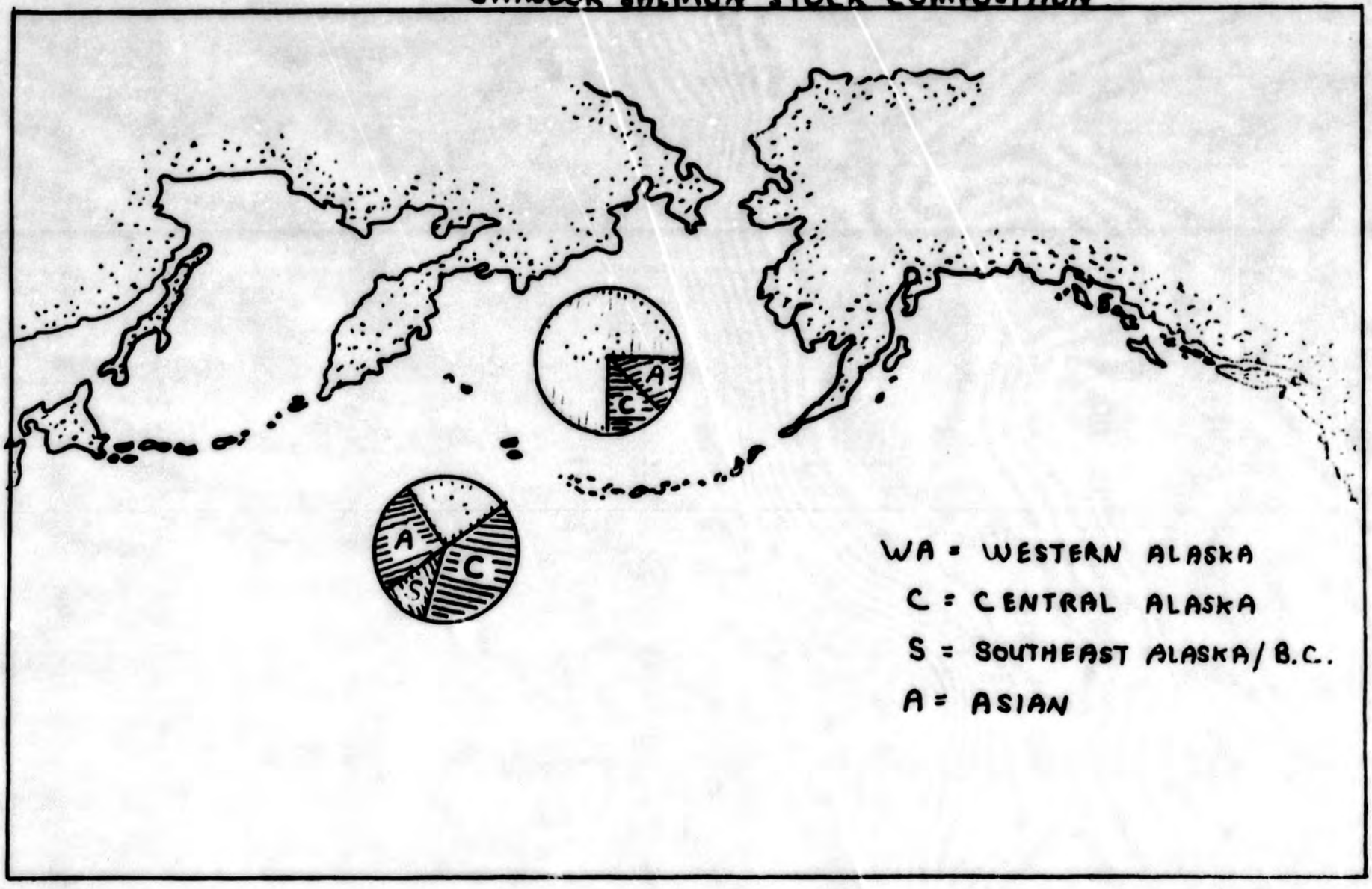


SOCKEYE SALMON INTERCEPTIONS

BY JAPANESE MOTHERSHIP FISHERY



CHINOOK SALMON STOCK COMPOSITION



CENTRAL ALASKA CHINOOK INTERCEPTIONS

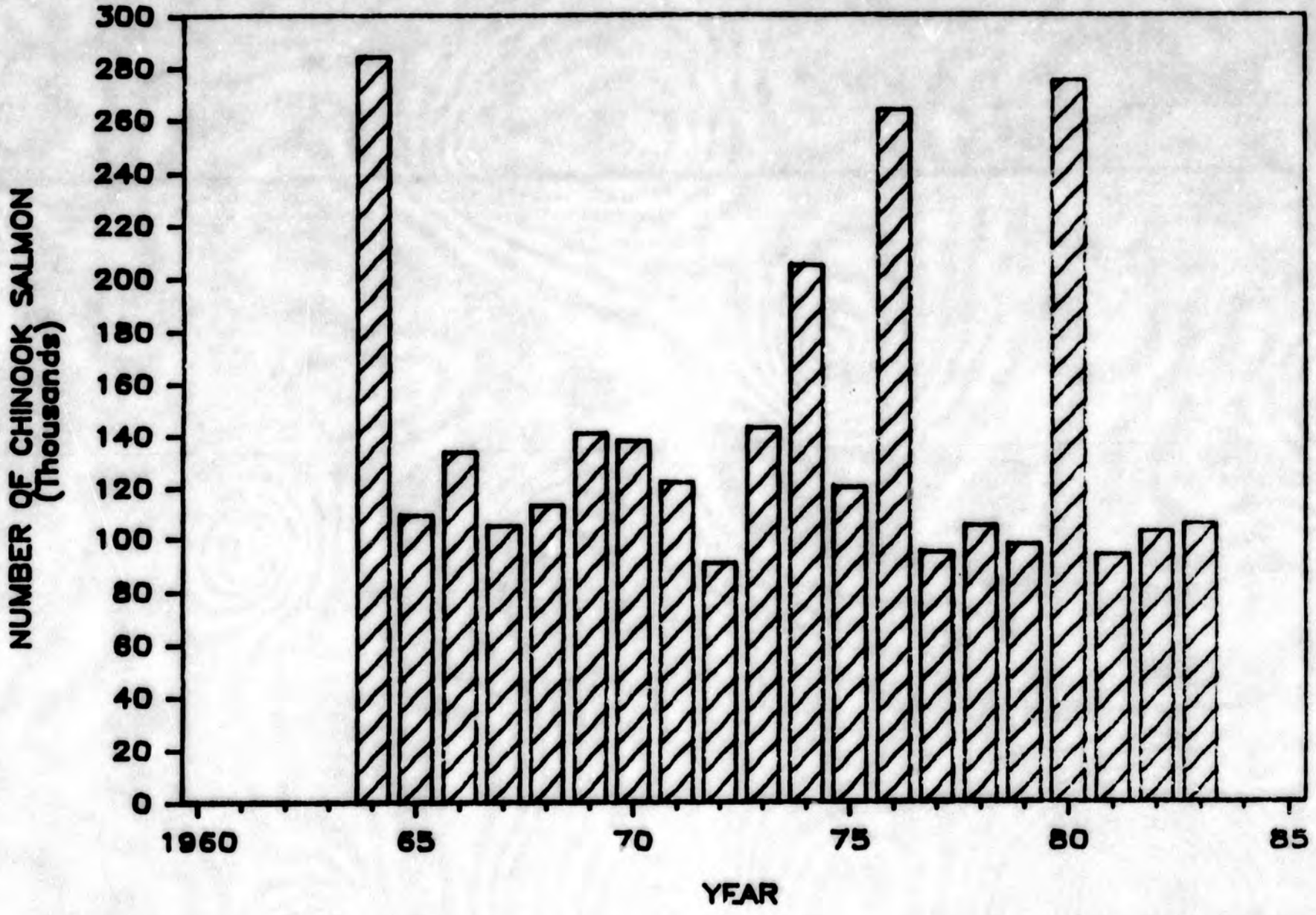


Table . Salmon catch (in thousands) by the Japanese mothership (MS and landbased driftnet (LB) fisheries, 1957-1983.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Year	MS	LB	MS	LB	MS	LB	MS	LB	MS	LB	MS	LB
1957	20,000	494	31	33	11,908	4,081	27,881	35,551	442	526	60,358	40,685
1958	12,026	888	46	45	18,787	9,155	15,546	24,833	3,393	785	49,798	35,706
1959	9,125	832	68	42	12,859	9,045	18,856	35,129	1,423	1,178	42,331	46,226
1960	12,879	1,601	180	113	10,517	8,684	1,885	20,129	962	1,346	26,423	31,873
1961	12,998	1,173	31	79	6,128	6,104	3,263	34,559	284	1,454	22,704	43,369
1962	10,590	154	122	124	6,372	7,577	1,139	14,021	1,532	1,289	19,755	23,165
1963	8,903	18	87	102	5,858	7,538	6,732	31,255	1,895	1,492	23,475	40,405
1964	7,097	108	410	195	8,641	8,956	2,281	17,247	3,535	1,624	21,964	28,130
1965	12,038	159	185	93	6,036	8,330	4,429	29,142	1,177	1,913	23,865	39,637
1966	7,254	703	208	112	8,562	11,848	2,553	16,032	469	1,458	19,046	30,153
1967	8,087	2,566	128	110	6,837	11,078	7,781	23,051	226	1,329	23,059	38,134
1968	6,373	2,769	362	88	8,107	8,457	3,823	15,899	898	1,421	19,563	28,634
1969	5,935	2,495	554	83	7,721	4,908	6,972	23,610	1,306	3,328	22,488	34,424
1970	6,944	2,966	437	101	9,638	6,585	1,726	13,403	180	2,259	18,925	25,314
1971	3,554	3,026	206	134	9,968	6,250	8,202	16,977	454	2,373	22,384	28,760
1972	3,184	3,711	261	103	13,373	8,598	3,795	14,839	614	2,421	21,421	29,672
1973	2,613	3,308	119	162	7,857	7,614	12,018	20,650	989	3,794	23,596	35,528
1974	2,282	3,155	361	186	9,283	12,179	7,756	11,242	1,085	3,559	20,767	30,321
1975	2,171	2,969	162	135	7,367	11,480	14,654	15,347	356	3,550	24,710	33,481
1976	2,266	3,291	283	201	10,436	10,646	7,207	10,879	828	2,751	21,020	26,690
1977	1,508	1,289	93	146	5,996	6,230	9,100	15,041	79	1,722	16,778	24,428
1978	1,882	1,292	105	210	3,802	3,488	1,853	7,846	609	2,512	8,251	15,349
1979	2,186	756	126	161	3,277	2,661	3,405	11,190	281	1,199	9,275	15,349
1980	2,412	787	704	160	3,098	2,697	561	11,612	656	1,205	7,431	16,461
1981	2,224	859	88	190	2,539	2,509	4,094	11,292	615	1,209	9,560	16,059
1982	1,738	723	107	165	3,217	2,930	1,654	11,035	1,183	1,201	7,899	16,054
1983 1/	1,655	828	87	178	3,081	2,395	4,324	11,308	297	1,122	9,445	15,831

1/ Preliminary

Table 21. Coastal catches and estimated high seas (MS + LBDN = mothership + landbased driftnet) catches of chinook salmon, 1964-83 (in thousands of fish).

	Coastal (commercial)				High seas (MS + LBDN)			
		Alaska						
Year	Asia	West	Cent	SE	Asia	West	Cent	SEBC
1964	160	260	22	357	101	219	285	13
65	107	263	31	287	47	126	109	5
66	93	208	24	308	54	130	134	8
67	91	284	26	301	39	93	105	6
68	83	259	20	332	77	262	113	7
69	122	288	38	314	108	384	141	9
70	141	291	33	322	98	340	138	9
71	183	283	45	334	57	159	122	7
72	197	224	42	287	61	209	91	7
73	210	177	30	344	45	87	143	8
74	172	180	29	347	90	244	205	10
75	223	126	28	301	40	128	120	11
76	196	242	49	242	58	159	264	5
77	310	296	40	310	55	86	95	1
Means	163	242	33	313	66	188	148	8
78	314	350	55	389	69	99	105	42
79	279	410	41	374	74	114	98	0
80	126	320	29	320	96	438	275	55
81	157	503	47	267	86	85	94	13
82	178	503	83	286	65	86	103	18
83	219	481	101	288	65	75	106	19
Means	212	428	59	321	76	149	130	24

Alaska State Legislature

House of Representatives

SPECIAL
COMMITTEE ON FISHERIES

Pouch V
State Capitol
Juneau, Alaska 99811
(907) 465-4833

HEARING DATE: May 7, 85

HJR 37
HJR 43

NAME (Please Print)	ADDRESS	REPRESENTING	TESTIFY (Yes or No)	PHONE NUMBER
Eric Eckholm	175 S. Franklin #312	USA Coalition	yes	586-3105
Steve Pennoyer	Box 3-2000 Juneau	ADF+G	yes	465-4100
Larry Cotter	307 So. Franklin Juneau	ILWU	yes	
Janet Fries		Rep Heinemann	No	
Egon E. Krygier	9342 Northland	Alaska Trollers Assoc	yes	586-9400
Kirk Lauber	321 Highland Dr.	Pacific Seafood Processors Assn	YES	586-6366

Official Business

Alaska State Legislature

House of Representatives

Pouch V
Juneau, Alaska 99811

Phone:
(907) 465-4924

Special Committee on Fisheries

May 7, 1985

Honorable Ted Stevens
United States Senator
522 Hart Building
Washington, D.C. 20510

Dear Senator Stevens:

The House Special Committee on Fisheries is strongly opposed to the imposition of Coast Guard user fees proposed in the current Senate budget.

While some services performed by the Coast Guard may be appropriate for coverage by user fees, the Fisheries Committee believes that the services identified in Senate Concurrent Resolution 32 fall are essential services for which user fees are not appropriate.

Specifically, we strongly object to user fees for services relating navigation aids, vessel inspections and search and rescue.

In addition, the Fisheries Committee strongly objects to the proposed fee schedule. The fees are very discriminatory towards smaller commercial fishing vessels, many of which are involved in marginally economic fisheries.

While the user fees might be considered a nuisance for the larger commercial vessels, ($1,215 for vessels over 100 gross tons), the $540 annual fee for commercial fishing vessels under 5 gross tons is very onerous and could put some fishermen out of business.

We respectfully urge you to oppose the Coast Guard user fee proposal. Should you fail to prevent its enactment, please attempt to revise the fee schedule to protect the smaller vessel operators.

Sincerely,

Representative Peter Goll

House Special Committee on Fisheries
Coast Guard User Fees/2-2-2

c.c. Senator Frank Murkowski
Representative Don Young
John Katz, Office of the Governor

COMMITTEE REPORT

HOUSE

(7)

5/2/85

7/8

FURTHER: RESOURCES

Date: 5-7-85

The Committee on HOUSE SPECIAL COMMITTEE ON FISHERIES has had HJR 43

Relating to the interception of Alaska salmon on the high seas.

under consideration and recommends:

[X] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[ ] replace with CS for ____________ [ ] same title [ ] new title

and recommends ____________

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note [ ] Zero Fiscal Note Attached

[ ] reports it back without recommendation

[ ] referred to the ____________ Committee

MEMBERS SIGNING DO PASS	MEMBERS HAVING OTHER RECOMMENDATIONS:
Roger L. Jenkins	Al Adams No Rec
Mike Navarre	
Katie Hurley	
John Binkley	
Pete Dunn	
David W. Thompson	

Pete Dunn

CHAIRMAN