

MARINE FISHERIES PROGRESS REPORT

JULY - AUGUST 1949

With the additional summer help on hand the field program has been in full swing during July and August. Sigurd Westheim has been made a permanent member of the marine fisheries group. Temporary workers are Jack Warbill and Lee Alvorsen at Astoria and Robert Livingstone in Newport.

ALBACORE

On July 19 the first albacore sample of the season was measured. It was at once apparent that the fish of the larger size group were in the majority. Figure 1 gives the length-frequencies of the albacore grouped into consecutive time periods until August 15. The large fish have continued to appear as a considerable proportion of the catch. Figure 2 shows all the length-frequencies up to August 15 grouped into one graph. The fish in the larger size group outnumber the fish in the smaller size group. This is the first season that the larger fish have appeared in any great numbers since post-war sampling was started in 1947. Some market samples have also been taken by Robert Livingstone at Newport. These samples will be included in the 1949 albacore report.

In addition to length-frequency samples three length-weight samples of 200 albacore each are being taken during the season. Two of these have already been taken, one at the beginning of the season, one at approximately mid-season, and the final sample will be made toward the last of the season.

During the 1948 albacore season a beginning was made on a racial study of the Pacific albacore. Morphometric data were collected on the largest of our

albacore for comparison with the large Japanese albacore which were being imported at that time. During this season (1949) morphometric data are being collected on all sizes of local albacore so that regression lines of various body proportions can be obtained. Data have been collected on local albacore ranging in size from 59 to 85 centimeters.

One of the members of the staff, Jack Tarbill, made a trip on the troll boat "Hazel" from July 28 to August 6 seeking albacore. On this trip stomach samples were taken which will be analyzed during the winter. Other general data were obtained which will be incorporated into the 1949 albacore report.

In spite of the appearance of the large fish in the catch, the landings for the season have been very poor. Catches were made southwest of Astoria at the beginning of the season, off Vancouver Island later, and at the present time (September 1) most of the boats are fishing off Southern Oregon and Northern California. The following table shows the July and August landings for two of the more important Astoria albacore canneries since 1944.

	C.R.I.A.		Union Fishermens Coop.	
	July	August	July	August
1944	250,650	1,338,658	1944	1,123,254
1945	214,911	1,130,572	1945	667,641
1946	81,261	390,913	1946	63,325
1947	156,271	431,790	1947	133,743
1948	266,513	401,293	1948	365,131
1949	97,699	249,834	1949	70,393

This table shows that the albacore catches are of the same magnitude as in the 1946 season which was the poorest season since the fishery became important in 1938.

CHINA TUNA.

Market length-frequency samples of the flat fish are being taken when possible. Because of the disagreement over prices it has been impossible to get regular samples. San Juan Fishing and Packing Company has been the only fish house which has been in operation at all regularly since the price dispute began in April. They are also the only Astoria company now accepting petrale and English sole with the exception of the new fishermen's coop. Unfortunately the San Juan boats are fishing almost exclusively off northern Washington and most of the co-op. boats are either doing the same or fishing for albacore. New England has been taking in large amounts of Dover Sole and turbot since reaching a price agreement on these two species in the last part of July.

The length-frequencies of petrale sole for 1949 are shown in Figure 3. Both the males and females appear to average a little shorter than in 1948. There is a greater proportion of females in 1949 than 1948 which may be due to the fact that a greater proportion of the fish were measured later in the season in 1949. There appear to be relatively more petrale females landed in Astoria during the winter than during the remainder of the season.

Figure 4 shows the length-frequency of the Dover Sole market samples for 1949. The sex ratio and size of the fish appear to be about the same as for the 1948 season. All of these length-frequency data will be examined more critically at the end of the summer season.

The length-frequency graph for English Sole in 1949 is shown in Figure 5. The sex ratio and size composition is again not much different from that of the 1948 season.

Tagging of bottom fish has been resumed in the 1949 season. Again because of the irregular fishing activity it has been very difficult to keep a sustained program underway. Table 1 shows the fish tagged in 1948 in the Astoria vicinity and the recoveries of these 1948 tags in the same year and in 1949. Table 2 gives the essential tagging information for 1949 and Table 3 is a combination of the two years. In 1949--3,459 bottom fish have been tagged off the Columbia River mouth making a total of 5176 fish tagged in the two seasons of operations. A few hundred tagged fish have also been liberated off Destruction Island and in the Newport vicinity.

The emphasis in tagging has been placed on the English, petrale, and Dover Sole. In the two seasons 1812 Dover Sole have been tagged, 2406 English Sole, and 577 petrale sole. There have been 31 recoveries of Dover Sole which is 1.7% of the fish tagged, 60 recoveries of English Sole representing 2.5% of the tagged fish and eight recoveries of petrale sole or 1.4% of the fish which were tagged.

From the tables it appears that the English Sole shows some tendency to migrate, the petrale sole is possibly a little more migratory while the Dover Sole appears to be quite sedentary in habit. Not enough tags have been recovered to develop a pattern of migration.

The price dispute over bottom fish cut off almost entirely the supply of fillet scrap to the mink farmers. As a result the mink farmers became almost completely dependent on whole bottom fish. This whole bottom fish was supplied mostly by three or four boats at Astoria, one boat at Garibaldi and two or three boats in Newport. The scarcity of fillet scrap in the Astoria area continued until the last part of July when New England Fish Company came to a price agreement with the fishermen on Dover Sole and turbot and resumed

operations in Astoria on a large scale. At the present time (September 1) it is believed that little whole fish is being landed for mink food in Astoria. However, it is very difficult to obtain records of these transactions of whole fish since the fish are loaded directly into the mink farmers' trucks and hauled away. It is a matter of only an hour or so to unload a boat and since no records are sent to the Fish Commission the exact magnitude of the fishery for whole fish is hard to determine. Sampling is also difficult since it is never known when a boat will unload fish for mink food at one of the widely scattered docks. Methods of obtaining records of these catches will have to be devised.

At Garibaldi the Marion F. has been delivering whole bottom fish to the association of mink farmers who own the boat. At the present time these mink farmers have enough whole fish in storage to satisfy their needs at least temporarily.

In Newport whole bottom fish are still being brought in for mink food.

At the present time, then, deliveries of whole fish in the Astoria area are not large. This condition will probably continue as long as the less expensive fillet scraps are available. The mink food fishery in Newport must be watched closely and given some further study.

Sampling of the landings of whole fish for mink food has been carried out both in Astoria and at Newport. Table 4 shows the composition by species of the random samples taken in the Astoria area. These samples were taken from catches composed mostly of flat-fish. On occasion the Marion F. fishes exclusively for rock fish to be used for mink food. It is noted that almost 60% of the whole fish landed for mink food was composed of red sole. This species, at least up to the present, has not been used for human consumption because its small size makes filleting difficult. The other two important

species in this fishery are Dover Sole 27% of the landings, and English Sole 10% of the landings.

Table 5 gives the composition by species of the landings for mink food at Newport. About 80% of the catch is English Sole.

The length-frequency graph for the Dover Sole landed for mink food in the Astoria area is shown in Figure 6. The sex ratio is about the same as in the landings for food fish but the sizes are much smaller due partly to the fact that the smaller fish were not selected out at sea and partly also to the use of a smaller mesh in the cod end in some cases.

Figure 7 shows the length-frequency of English sole landed for mink food in the Astoria area. Here the proportion of males is much greater than in the landings of food fish. This is because the majority of the males do not grow to a size large enough to be used as fillet fish and are therefore discarded at sea. The fish of both sexes are smaller than in the food fish samples, again because of the lack of selectivity of sex and the use of a smaller meshed cod end in some cases.

Figure 8 shows the length-frequency distribution of the English Sole at Newport. Again the great majority of the males landed are mature fish smaller than the 32 centimeter discard size for food fish. However, there is a high proportion of females large enough to be used as food fish. Since the English Sole comprise about 80% of the mink food landings in Newport there is a considerable amount of potential food fish being used as mink food.

This entire mink food problem is being examined more thoroughly and a report will be submitted after the field work is completed for the summer.

A new otter trawl fishery for rockfish is being developed by the Yaquina Bay Fish Company in Newport. This company will try to compete with the ocean perch (Sebastes Marinus) filleted on the East Coast and the fillets are being marketed under the name of Newport Ocean Perch. The fish are scaled in a barrel scaler and filleted with the red skin left on. The fillets are wrapped in a transparent plastic with the red skin outward. The principal species in the landings is Sebastes Alutus, the rose fish or long-jawed rockfish with a small per cent of Sebastes Diploproa and Sebastes Alascanus mixed in with the catches. This company has asked that information concerning this new venture be kept confidential.

SOUFFIN SHARK

The tagging program carried out in cooperation with the shark fishermen is continuing. At the height of the season 33 Oregon shark boats were participating in the program. The Washington shark fishermen have asked for tags from the Washington biologists and as a result seven of their boats are also tagging fish. The fish tagged are the smaller males and some females which would ordinarily be discarded.

At the present time the Oregon boats have tagged at least 192 fish over an area extending from Point Conception in Southern California to Ketchikan, Alaska. This total will be increased somewhat after all the log books have been recorded. The distribution of the tagged fish into areas is as follows: Cape Flattery and northward, 60 tags; Eureka to Cape Flattery 44 tags; south of Eureka 88 tags. Only one tag has been recovered. The fish was tagged on August 5 off Cape Scott and recovered two days later in the same area.

Table 6 summarizes by months the catch data as compiled from the log books which have already been copied. In the area which includes Cape Flattery and extends to the north 93% of the sharks caught were males; in the area from Cape Flattery south including Lureka 94% were males and in the area south of Lureka 97% were males.

The log books show that most of the nets are 1200 fathoms in length and that the mesh size is usually 10 inches.

A more complete report on the soupfin fishery of Oregon will be submitted at the close of the season.

No pilchards have been landed in Oregon and the fleet has left for California. There were a number of boats and a scouting plane searching for pilchards but no fish were found. At this late date it is unlikely that pilchards will be landed in Oregon in 1949.

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Aquatic Biologists

Sigurd J. Westrheim

Tagged Fish Data
1948

	No. Tagged	No. recovered in 1948	Percent Rec. 1948	No. recovered in 1949	Percent Rec. in 1949	Total recover
lingham Sole	2					
osetta isolepis)						
rock-fish	9					
astodes melanops)						
rock salmon	3	1	33.3			1
fish	11	1	9.09	1	5.0	1
fish	40					1
fish	474	3	0.63	10	2.10	13
fish	819	28	3.41	13	1.59	41
nder	10					
God	32	1	3.12			1
ale	166	6	3.61	1	0.60	7
sole	7					
fish	18					
fish (green)	17			1	5.83	1
geon (white)	3					
Sole	11	1	9.09			1
fin	1					
Y-cheeked rock-fish						
stolobus alascanus)	1					
cod	4					
ot	1					
ow tailed rock fish	44					
recorded	44					

Total 1717 41 25 26 1.35 67

birds lost at sea

Table One
Tagged Fish Data
1948

	Percent total tags recovered	No. migrating 15 miles or less	Percent	No. migrating more than 15 mi.	Percent	Direction
ingham Sole (<i>eta isolepis</i>)						
rock-fish (<i>todes melanops</i>)	33.3	1	100	1	100	Cell
Black Salmon	9.09	1	100	1	100	North
h	5.0	13	100	10	24.3	6:S
h	1.59	31	75.7			
h	5.00					
er	3.12	1	100	5	71.5	2:N
od	4.21	2	28.5			
on (Green)	5.83	1	100			
on (White)						
ole	9.09			1	100	south
cheeked rock-fish (<i>tolobus alascanus</i>)						
od						
tailed rock fish						
	4.05					

All tagged fish liberated near mouth
of Columbia River.

Table 2

Tagged Fish Data 1949
(thru 20th August)

	No. Tagged	No. Recovered	Percent Recovered	No. Migrating 15 miles or Less	Percent	No. mig. over 15 m.	Per
ham Sole							
<u>ttta isolepis</u>)	7						
ock-fish	1						
des <u>melanous</u>	1						
salmon	1						
erpus <u>collettei</u>)	1						
h	1338	18	1.34	17	94.4	1	55
h	2						
Sole	1587	19	1.9	18	94.7	1	5
r	10						
d	1	1	3.84	1	100		
d	26						
	411	1	.24	1	100		
	11						
le	1						
b	1						
des pinniger	1						
sh	31						
le	6						
	2						
<u>inoculata</u>)	1						
d	1						
4	4						
tail Rock-fish	16						
	3459	37	1.06				

All tagged fish liberated
near mouth of Columbia R

Table 4
 KINK FEED 1949
 Astoria Area
 Summary of all Species found
 June 3 - Aug. 18

Dov	Eng	Pet	Rex	Bell	Species of whole fish		True Cod	Tom Cod	Shad	Gr. Rock	Bl. Rock	R. Rock	Sable L.
					Sand Dab	Fl (all spp.)							
61	13	2	105	1	3	1	1	1	1	1	1	2	
62	7		85		1	1	5						1
99	22	1	70										1
105	4		202	1		1	1						
30	35	1	100		7		1						1
45	70	5	313	10	8		4						
402	151	9	875	12	19	2	12	1	1	1	1	4	1
26.9	10.1	0.6	58.6	0.8	1.3	0.1	0.8	0.1	0.1	0.1	0.1	0.3	0.1

Percent

58.6
 26.9
 10.1
 1.3
3.4
 100.3

Table 5
 MINK FEED 1949
 Newport Area
 Summary of all Species found

Dov	Eng	Pet	Rex	Bell	Sand		Fl.	Rockfish	Ling	Turb.
					Sole	Dab				
3	43	4	2	1						
3	64	11	5	2	2	6	3			
	189	6	5	1		2				
10	24	1						1	4	2
16	320	22	12	4	2	8	3	1	4	2
4.1	81.2	5.6	3.0	1.0	0.5	2.0	0.8	0.3	1.0	0.5

Percentage

81.2
 5.6
 4.1
 3.0
 2.0
 1.0
 1.0
2.1
 100.0%

Table 6

Catch data for Soupfin Shark fishing boats - 1949

Area I:	April		May		June		July		August	
	Aver.	Total	Aver.	Total	Aver.	Total	Aver.	Total	Aver.	Total
Males							(147.4)	1521		
Females							(10.7)	118		
Total							(158.1)	1739		
No. Boats										11
Total Unclass.							(200.0)	200		
No. Boats										1
Total							(161.5)	1939		
No. Boats										12
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Area II.										
Males					(37.3)	262	(11.0)	44		
Females					(5.0)	15	(0.3)	3		
Total					(92.3)	277	(11.3)	47		
No. Boats						3				4
Total Unclass.						-		-		
No. Boats						-		-		
Total					(92.3)	277	(11.3)	47		
No. Boats						3				4
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Area III										
Males	(41.4)	207	(144.7)	1013	(131.0)	555	(1.0)	1		
Females	(1.4)	7	(5.4)	38	(4.3)	23	(0.0)	0		
Total	(42.8)	214	(150.1)	1051	(135.3)	678	(1.0)	1		
No. Boats		5		7		5	(1.0)	1		
Total Unclass.	(159.0)	159	(189.5)	379	(251.3)	754		-		
No. Boats		1		2		3				
Total	(62.2)	373	(158.9)	1430	(179.0)	1432	(1.0)	1		
No. Boats		6		9		8				1

Area I: Cape Flattery and Northward.

Note. Location indicates vicinity of fishing grounds.

Area II: Eureka to Cape Flattery.

Area III: South of Eureka.