

The German Salmon Fishery in the South-Eastern
Baltic in the Season 1962-63

by

R. Kändler



Since 1958 reports on the yields of the German salmon fishery in the eastern Baltic have been published in some papers presented at the Council Meetings (1958, No. 40; 1959, No. 33; 1961, No. 23; 1962, No. 55) in order to provide continuous information on the statistical data collected at the Kiel fish market (cf. R. Kändler and M. Lümann, Ber. Dtsch. Wiss. Komm. Meeresforsch., 14, 1957).

The German salmon catches in the last season 1962/63 (August 62 - June 63) amounted to 130.0 tons, i.e., less than 2/5 of those in the previous season 1961/62 (339.1 tons), and even inferior to the small landings in 1959/60 (169.1 tons) and in 1955/56 (140.0 tons). This heavy decline was caused by the severe frost during the last winter. From the beginning of January to the end of March, the east coast of Schleswig-Holstein was blocked by ice, preventing the fishermen from going out fishing. When the ice had melted, they could not make up for the loss of three of the best fishing months, as only two months remained for salmon fishing.

The monthly catches in 1962/63 are shown in Table 1, compared with those in 1961/62 and the average in 1954/62:-

Table 1. Monthly catches of salmon landed in Schleswig-Holstein.

Month	1962/63		1961/62		Average 1954/62	
	tons	%	tons	%	tons	%
September	4.9	3.8	3.6	1.1	1.5	0.6
October	11.5	8.9	25.8	7.6	11.7	4.7
November	24.7	19.0	73.7	21.7	49.3	19.7
December	35.5	27.3	94.4	27.8	61.6	24.6
January	-	-	43.4	12.8	38.6	15.0
February	-	-	23.0	6.8	23.9	9.5
March	-	-	36.2	10.7	31.0	12.7
April	21.5	16.5	13.5	4.0	18.8	7.5
May	30.3	23.3	19.6	5.8	12.6	5.0
June	1.6	1.2	5.9	1.7	1.8	0.7
Total	130.0	100.0	339.1	100.0	250.8	100.0

The first months of the fishing season 1962/63 were disappointing. Until the end of the year, 76.6 tons were landed, i.e., 121 tons less than in the previous season, and only 62% of the average catch in 1954/62. In contrast to this bad beginning, relatively good catches were obtained in April and May 63. In these months - some landings in the first days of June included - 53.4 tons were caught, i.e., 14.4 tons more than in April/June 62, and 161% of the average in 1954/62. The mean catch per trip rose from 475 kg in November/December 1962 to 570 kg in April/May owing to the use of drift nets.

The average size of the salmon landed at the Kiel fish market decreased remarkably in the course of the season from 4.75 kg in October to 3.57 kg in May (gutted weight). The mean weight of 3.73 kg for the whole season is the lowest ever recorded since exact information became available. Further details on the size composition of the salmon landings are given in Tables 2 and 3.

Table 2. Size composition of salmon landed at the Kiel fish market in the fishing season 1962/63.

Market category guttled weight (kg)	I > 8	II 7-8	III 5-7	IV 3-4	V 2-3	VI 1-2	Average weight (kg)
	Number %						
Sept./Oct. 1962	10.8	9.7	21.4	26.0	23.4	8.7	4.65
Nov./Dec. "	9.5	6.9	10.3	21.7	35.8	15.8	3.87
April 1963	7.5	5.9	11.3	45.2	24.8	5.3	4.04
May/June "	4.7	3.9	6.5	43.4	33.4	8.1	3.55

The percentages of larger salmon (> 5 kg, market categories I-III) decreased heavily from 41.9 % in Sept./Oct. 1962 to 15.1 % in May/June 1963, whereas the quantity of smaller fish (2-5 kg, m. cat. IV-V) increased from 49.4 % to 76.8 %. The proportion of the smallest fish (1-2 kg) varied and was lower in April/June 63 (7.0 %) than in September/December 62 (14.5 %). These changes in the size composition of the catches are the effect of two concerted processes: the growth of the age-group A. 1+ from the autumn to the spring (Figure 1), and the migration from the feeding grounds to the spawning rivers in early spring.

The quantities of each market category landed at the Kiel fish market in the fishing seasons 1961/62 and 1962/63 are shown in Table 3:-

Table 3. Salmon landed at the Kiel fish market in 1961/62 and 1962/63 (in metric tons)

Market category	I	II	III	IV	V	VI	Total
Sept./Dec. 1961	18.9	8.8	17.3	71.4	19.9	1.4	137.7
Jan./June 1962	14.5	5.5	13.3	64.9	16.9	1.1	116.2
Sept./Dec. 1962	11.3	7.0	9.5	10.3	10.4	3.1	51.6
Apr./June 1963	6.4	4.0	5.9	18.5	9.1	1.3	45.2

Even when compared with the landings in September/December 1961, the fishery resulted still in good catches in the first half-year 1962. The deficit of 21.5 tons was shared by all market categories nearly to the same extent. In the second half of 1962, the decline continued for nearly all weight groups. The market category IV dropped to 1/6 of its former amount which could be taken as a sign of poorness of the smolt year-class 1961 (age-group A. 1+). It is quite unusual that the quantities of the market categories I-V differ so little. Owing to the loss of three months by ice-bound harbours, the first half-year 1963 brought a further decrease in the landings of larger salmon which was only partly compensated for by an increase in the weight-group IV.

If the data collected at the Kiel fish market are converted to the total landings and the catch per trip, the following figures are obtained for the larger and smaller salmon categories (above and below 5 kg):-

Table 4. Number of salmon above and below 5 kg in weight, caught by German fishermen in 1960/61 - 1962/63.

Fishing season	Total number	> 5 kg	< 5 kg	Average number per trip		
				Total	> 5 kg	< 5 kg
1960/61	55400	23500	31900	124	53	71
1961/63	90300	15400	74900	191	32	159
1962/63	33500	8100	25400	125	30	95
Mean 1954/55 to 1961/62	57500	20300	37200	142	50	92

The particular situation of the salmon stock in 1962/63 may be seen from the figures in Table 4 which completes a former statement (C.M. 1961, No. 23, Table 5). The weight limit at approximately 5 kg separates the age-group A. 1+ from A. 2+. As the number of still older fish in the catches is small - 2-5 % on an average -, the relation between the quantities of the weight-groups IV-VI and I-III (reduced by 10 % for older fish) reflects the relation between these most important age-groups in each fishing season. Within the last three seasons this relation has changed from 100:66 (1960/61) to 100:18 (1961/62) to 100:29 (1962/63); the average for eight fishing seasons for which information is available, is 100:49. This relationship between the age-groups A. 1+ and A. 2+ indicates the rate of reduction within one year. It amounts to about 50 % (total mortality coefficient $Z = 0,7$) and is caused by fishing, natural mortality and spawning migration. The mean number of salmon caught per trip was equal in 1960/61 and 1962/63 and only $2/3$ of that in 1961/62 when the rich smolt year-class 1960 became fishable. The following year-class, 1961, was of intermediate strength as may be seen from the mean number of smaller fish (<5 kg) per trip in 1962/63. Although the mean catch per trip only allows a rough estimation of the density of fish, it gives some information about the strength of the smolt year-classes entering the fishable stock as A. 1+ year old fish. According to our data, the smolt year-classes 1955 and 1960 were rich, 1953, 1957, 1959, and 1961 intermediate, 1956, 1958 and especially 1954 poor.

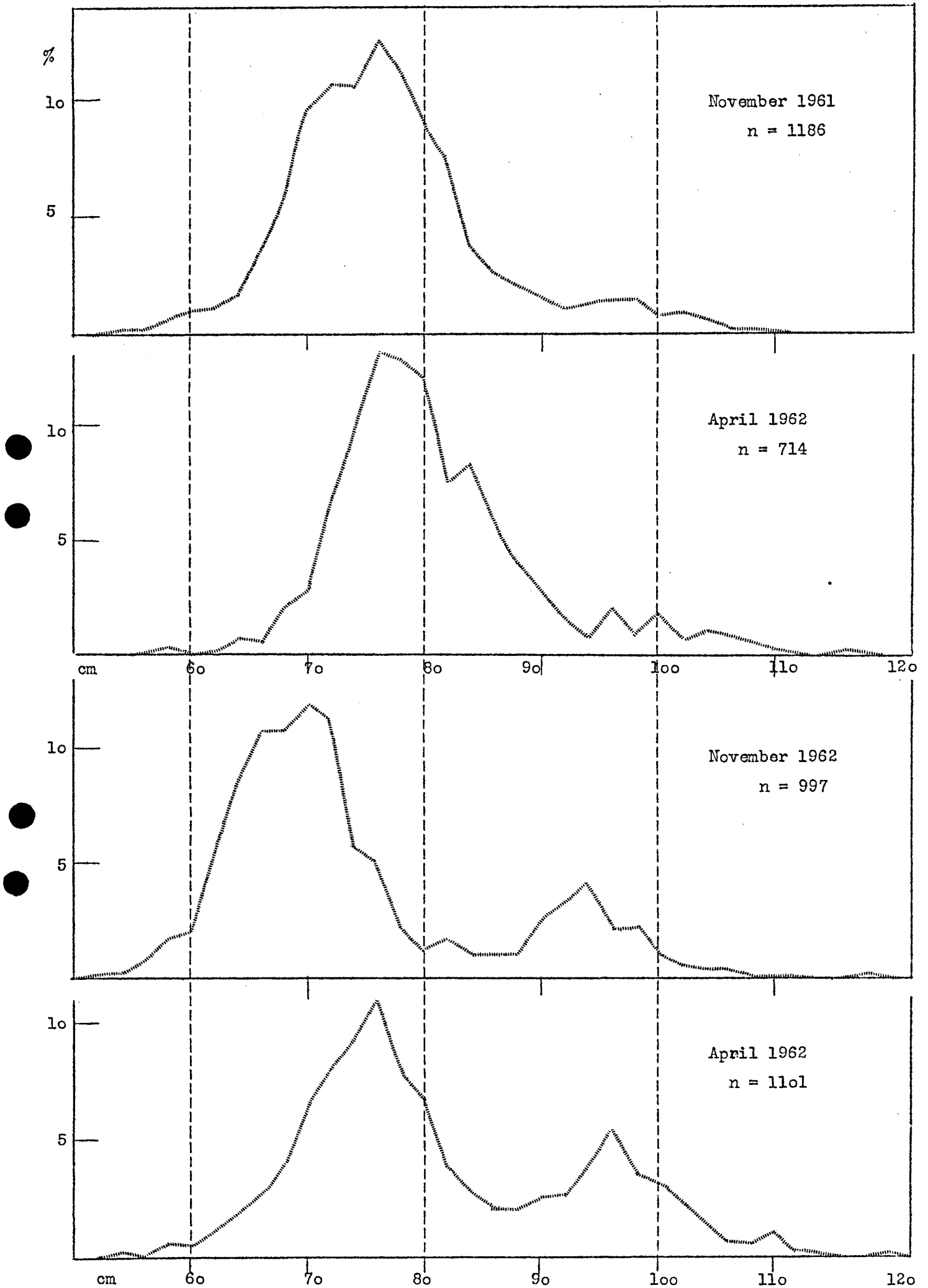


Figure 1. Length distributions of salmon landed at the Kiel Fish Market in November 1961 - April 1962