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Data on the Shrimp Fishery at East Greenland in 1985 Compared to Earlier Years

by

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INTRODUCTION

For 1985 STACFIS advised a total allowable catch of 5,000 tons of shrimp in the Denmark Strait area (including fishing grounds on the Icelandic side of the mid-line). A regulatory TAC of 6,090 tons was set for the Greenland part of the area, while the total reported catches reached 6.299 tons.

In 1985 23.5% of the reported catches were taken in the second half of the year, in contrast to earlier years, where only a minor proportion was caught in this period.

In 1985 logbook data from two trawlers fishing at East Greenland from January to April has been available to the Greenland Fisheries and Environment Research Institute.

The present paper updates the information given by Carlsson (1983; 1984; 1985) on catches and analysis of commercial fishery data.

MATERIALS AND METHODS

Total catches and numbers of vessels in the shrimp fishery were compiled by nation and month based on the obligatory weekly reporting to Greenland authorities by all vessels above 80 GRT. Logbook data from two trawlers fishing from January to April was analysed to show the distribution of hauls and catches in 1985 and monthly distribution of catches, hauls and mean catch rates. Monthly mean catch rates together with rates of by-catches from 1980 to April 1985 were calculated from logbook data available.

Neither observer data nor shrimp samples were available from the shrimp fishery at East Greenland in 1985.

RESULTS AND DISCUSSION

Reported catches in 1983 and 1984.

Table 1 shows reported catches of shrimp by nation and month in 1984

and 1985, and Table 2 the corresponding numbers of reporting vessels. Vessels smaller than 80 GRT are assumed not to join the fishery (Carlsson, 1985), and the tables should therefore represent the total shrimp fishery.

In 1985 the fishery was more evenly distributed over the year compared to earlier years, with 23.5% of the catches taken in the second half of the year compared to 0, 14.9 and 1.6% in 1982, 1983 and 1984 respectively. In January and February some fishing occurred, while the highest catches were obtained in March and April. A total of 47 vessels joined the fishery compared to 41 in 1984. As in this year, the highest no. of vessels was on the fishing grounds in March and April.

#### Geographical distribution of the fishery.

Figure 1 shows the distribution of hauls by statistical unit, based on logbook data from January to April, and Figure 2 the distribution of total catches. Figure 3a-d gives the distribution of hauls and mean catch rates by month. The fishery took place in the central parts of the main fishing area, with far the highest activity in statistical unit KD113. The fishery is more widespread than in the 1984 logbook data, indicating that ice has not been as big a problem as in February and March 1984 (Carlsson, 1985). In January and March some fishing is recorded south of 65°N and west of 31°W, but this must be a misrecording, as water depth in this area is ab. 2,000 meters according to available sea charts.

No further information on environmental conditions in 1985 (ice cover, etc.) is available.

#### Catch and effort.

The highest total catch reported in the available logbook data was obtained around statistical unit KD113 (Figure 1 and 2), where also the highest mean catch rates are found (Figure 3a-d). Table 4 shows the mean catch rates of shrimp by month in a south to north grid (7.5 minute latitude scale) based on logbook data from 1980 to 1985, Table 5 the corresponding numbers of hours trawled (the misreported catches to the southwest of the main fishing area show up in "strip-unit" JK and JL, but should not be considered). As in 1983 and 1984, the data for 1985 does not show the northward shift in the fishery throughout the fishing season that was found in 1980, but the decline in catch rates is evident as in earlier years.

Figure 5 shows the monthly mean catch rates based on logbook data in the main fishing area (Carlsson, 1984), updated with data from 1985. Spring peak catch rates were not as high in 1985 as in 1984, but a steady decline is evident from January to April similar to earlier years. Catch rates for the respective months are 311, 302, 271 and 222 kg per hour, based on 647, 610, 697 and 625 hours of trawling. The mean level is similar to that found in the same months in 1982 and 1983.

#### By-catches.

By-catches reported in the available logbook data are shown in Table 6 and compared to logbook-catches of shrimp. In 1985 only small amounts of redfishes are reported.

#### CONCLUSIONS

Reported catches of shrimp in 1985 from the Greenland part of the Denmark Strait totalled 6,299 tons, which is the highest catch figure since the fishery started in 1978 except for 1980. In 1985, 47 vessels joined the shrimp fishery, i.e. with a (reported) mean catch of 134 tons per vessel. The fishery took place throughout the year except in July, with a larger proportion than earlier observed of the catch (23.5%) being taken in the second half of the year.

Logbook data from January to April shows a wider distribution of the fishery in the central parts of the main fishing area than in 1984, indicating that ice was not as big a problem for the fishery as in that year.

As in earlier years peak catch rates were obtained in January, however not reaching the levels of 1980 and 1984. The mean catch rate level is similar to that found in Greenland data for 1982 and 1983.

Reported by-catches in the East Greenland shrimp fishery were at a very low level in 1985.

#### REFERENCES

Carlsson, D.M., 1983. Data on the shrimp fishery at East Greenland, 1980-82. NAFO SCR Doc., No. 83/I/9, Ser.No. N647.

Carlsson, D.M., 1984. Data on the shrimp fishery at East Greenland in 1983 compared to earlier years. NAFO SCR Doc., No. 84/I/5, Ser.No. N774.

Carlsson, D.M., 1985. Data on the shrimp fishery at East Greenland in 1984 compared to earlier years. NAFO SCR Doc., No. 85/I/12, Ser.No. N946.



Table 4. Mean catch of shrimp (kg/hour) by month at East Greenland in a south to north grid (7.5 minute latitude scale) based on log-books of 8 trawlers in 1980, 5 trawlers in 1981 and 1982, 2 trawlers in 1983, 1 trawler in 1984, and 2 trawlers in 1985.

	8004	8005	8006	8007	8008	8009	8010	8011	8104	8105	8106	8203	8204	8205	8303	8304	8401	8402	8403	8501	8502	8503	8504
KN	-	-	-	-	-	-	-	97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KM	-	-	-	-	-	-	-	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KL	-	-	-	-	-	-	233	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK	-	-	-	-	-	-	149	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KJ	-	-	-	-	-	-	63	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KH	-	-	-	-	-	0	130	169	80	189	-	-	-	-	-	-	-	-	-	-	-	-	-
KG	-	-	-	-	80	243	100	43	355	0	-	50	-	-	243	37	-	-	-	-	-	-	-
KF	0	0	163	92	14	173	101	82	332	0	114	129	-	-	286	159	-	-	-	419	-	-	-
KE	-	-	-	-	-	-	148	104	118	318	124	215	0	-	-	-	-	-	-	387	109	-	-
KD	312	337	120	86	-	250	35	195	588	332	-	153	150	86	-	-	-	-	279	269	228	248	
KB	-	-	-	-	13	-	9	98	513	278	31	166	182	176	-	-	672	172	-	325	396	231	222
KA	725	414	127	-	-	-	0	-	447	249	-	196	183	157	0	-	728	356	249	338	340	147	149
JZ	768	357	118	-	-	-	0	-	418	254	-	172	182	148	0	-	223	-	204	380	384	179	211
JX	-	-	-	-	11	-	-	0	120	279	-	131	213	253	-	-	390	-	-	403	353	-	222
JV	-	-	-	-	-	-	-	-	267	-	-	143	201	265	-	-	-	-	-	524	-	-	-
JT	-	-	-	-	-	-	-	-	162	-	-	115	202	291	-	-	-	241	-	123	-	-	-
JS	-	-	-	-	-	0	-	-	225	-	-	86	129	278	-	-	-	-	-	160	-	-	-
JR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JL	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JJ	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JH	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JF	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JD	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BZ	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BX	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BV	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HT	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HX	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
																						489	594

Table 5. No. of hours trawled by month in a north to south grid at East Greenland based on logbook information (see Table 4).

	8004	8005	8006	8007	8008	8009	8010	8011	8104	8105	8106	8203	8204	8205	8303	8304	8401	8402	8403	8501	8502	8503	8504
KN	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KM	-	-	-	-	-	-	48	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KL	-	-	-	-	-	-	28	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK	-	-	-	-	-	-	21	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KJ	-	-	-	-	-	-	14	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KB	-	-	-	-	1	14	39	4	5	-	-	-	-	-	97	8	-	-	-	-	-	-	-
KG	-	-	-	-	3	81	336	5	7	4	-	-	-	-	95	223	-	-	-	29	-	-	-
KF	3	2	7	19	7	198	427	33	47	2	-	4	2	-	-	-	-	-	-	52	6	-	-
KE	-	-	23	37	-	155	236	80	82	5	3	10	1	-	-	-	-	-	-	333	321	424	327
KD	1	44	23	4	-	34	17	158	309	115	-	48	59	4	-	-	-	-	-	86	68	78	83
KB	-	313	65	-	8	-	11	31	448	114	3	175	132	7	-	-	54	-	-	77	105	61	54
KA	14	495	101	-	-	-	3	-	362	166	-	179	298	7	6	30	312	67	152	57	57	7	86
JZ	17	323	68	-	5	-	2	-	81	118	-	124	180	12	5	18	-	-	-	12	21	-	75
JX	-	116	28	-	10	-	-	-	2	89	-	78	277	80	-	4	3	-	-	15	-	-	-
JV	-	2	-	-	-	-	-	-	-	236	-	87	300	348	72	43	-	-	-	16	-	-	-
JT	-	2	-	-	-	-	-	-	-	62	-	55	275	663	257	183	-	-	63	-	-	-	-
JS	-	-	-	-	2	-	-	-	-	3	-	4	44	274	9	9	-	-	-	-	3	-	-
JR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JL	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JK	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JJ	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JH	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JF	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JD	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RZ	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BX	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HK	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 6. By-catches by species and month reported in logbooks from the Denmark Strait shrimp fishery, compared to the corresponding shrimp catches.

SPECIES	8004	8005	8006	8007	8008	8009	8010	8011	8104	8105	8106	8203	8204	8205	8303	8304	8401	8402	8403	8501	8502	8503	8504
Redfishes	0.8	4.0	0.1	-	1.1	0.2	0.4	-	-	10.5	-	-	-	-	-	1.0	-	20.1	1.5	0.3	0	0.5	0.2
Capelin	2.2	22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sand lance	-	2.7	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed	-	1.4	0.8	-	-	0.2	0.5	-	-	-	-	-	-	-	3.7	0.8	-	-	-	-	-	-	-
Total bycatch	3.0	30.8	0.9	-	3.1	0.4	0.9	-	-	10.5	-	-	-	-	3.7	1.8	-	20.1	1.5	0.3	0	0.5	0.2
Corresponding shrimp catch	23	507	44	4	1	87	125	67	653	240	1	124	301	386	182	76	63	111	63	201	184	189	139
Bycatch in % of shrimp catch	13.0	6.1	2.1	-	620.0	0.5	0.7	-	-	4.4	-	-	-	-	2.0	2.4	-	18.1	2.4	0.1	0	0.3	0.1

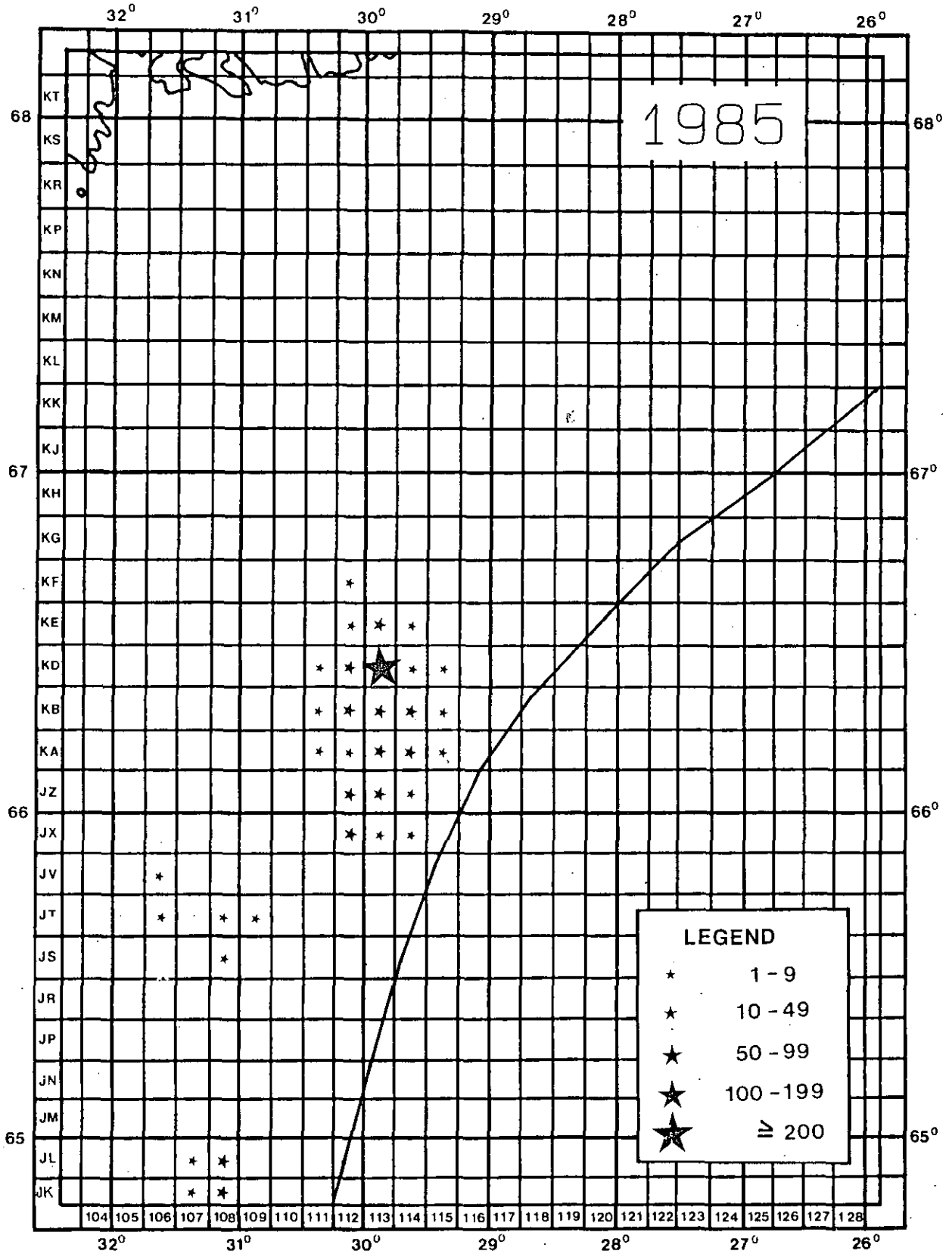


Figure 1. Distribution of hauls by 2 trawlers in the shrimp fishery at East Greenland in January to April 1985, based on logbook information.



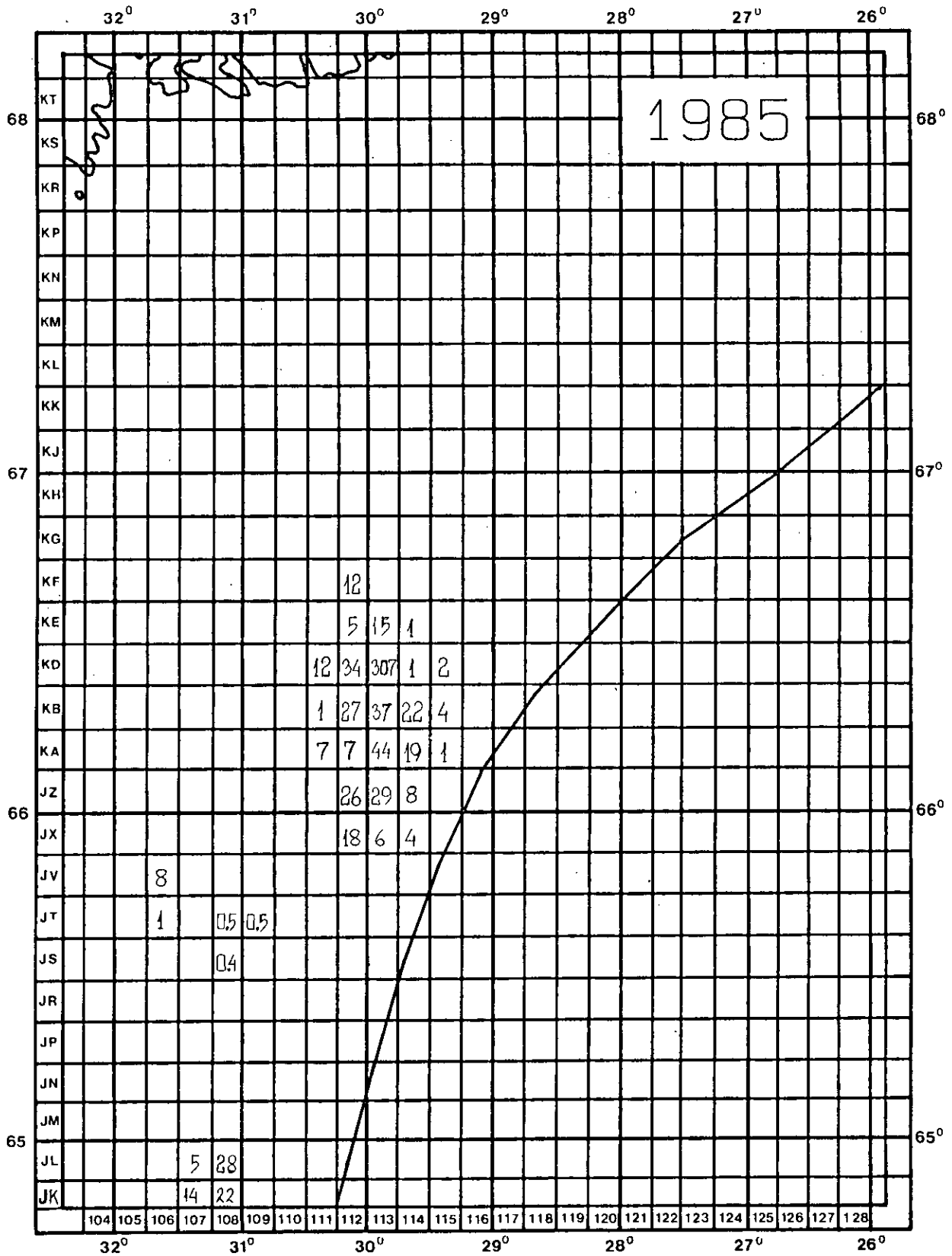


Figure 2. Distribution of total catches of shrimp (tons) by 2 trawlers fishing at East Greenland in 1985, based on logbook information.

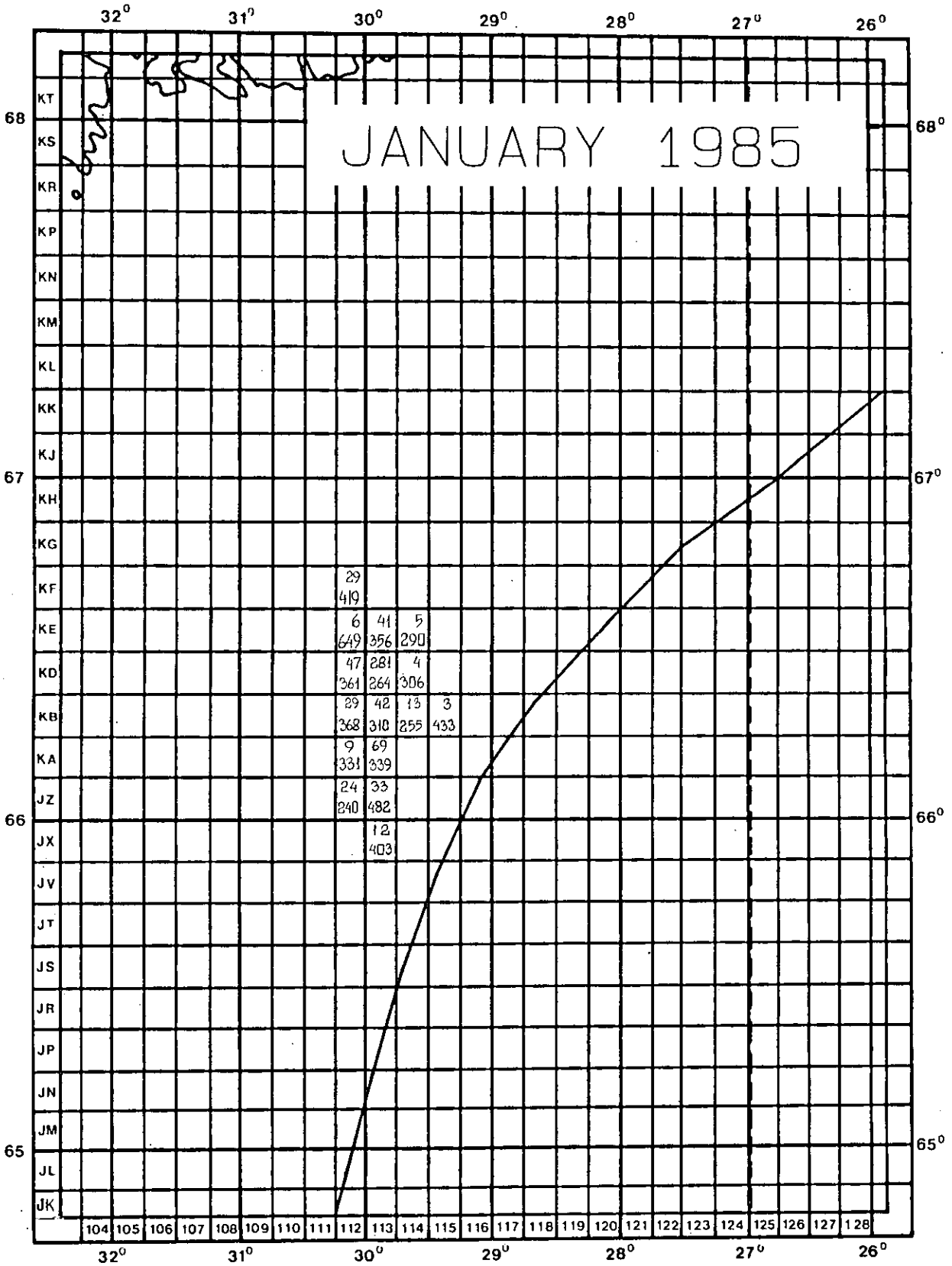


Figure 3a. Distribution of effort and mean catch of shrimp per hour in January 1985 based on logbook information from 2 trawlers. Upper figure in each statistical is no. of hours trawled, lower figure the mean catch rate (kg/hour).

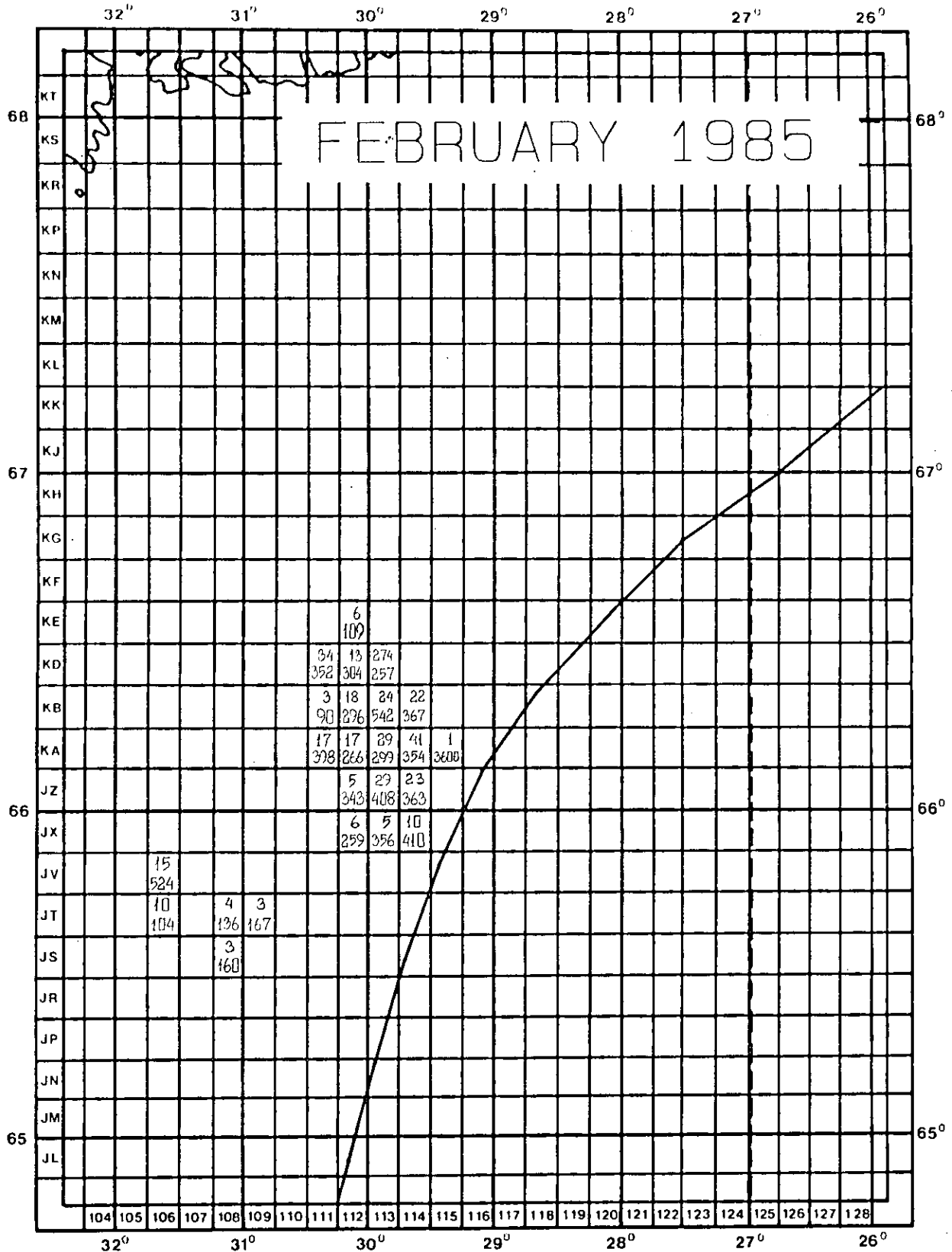


Figure 3b. Distribution of effort and mean catch per hour of shrimp in February 1985 based on logbook information from 2 trawlers. Upper figure in each statistical is no. of hours trawled, lower figure the mean catch rate (kg/hour).

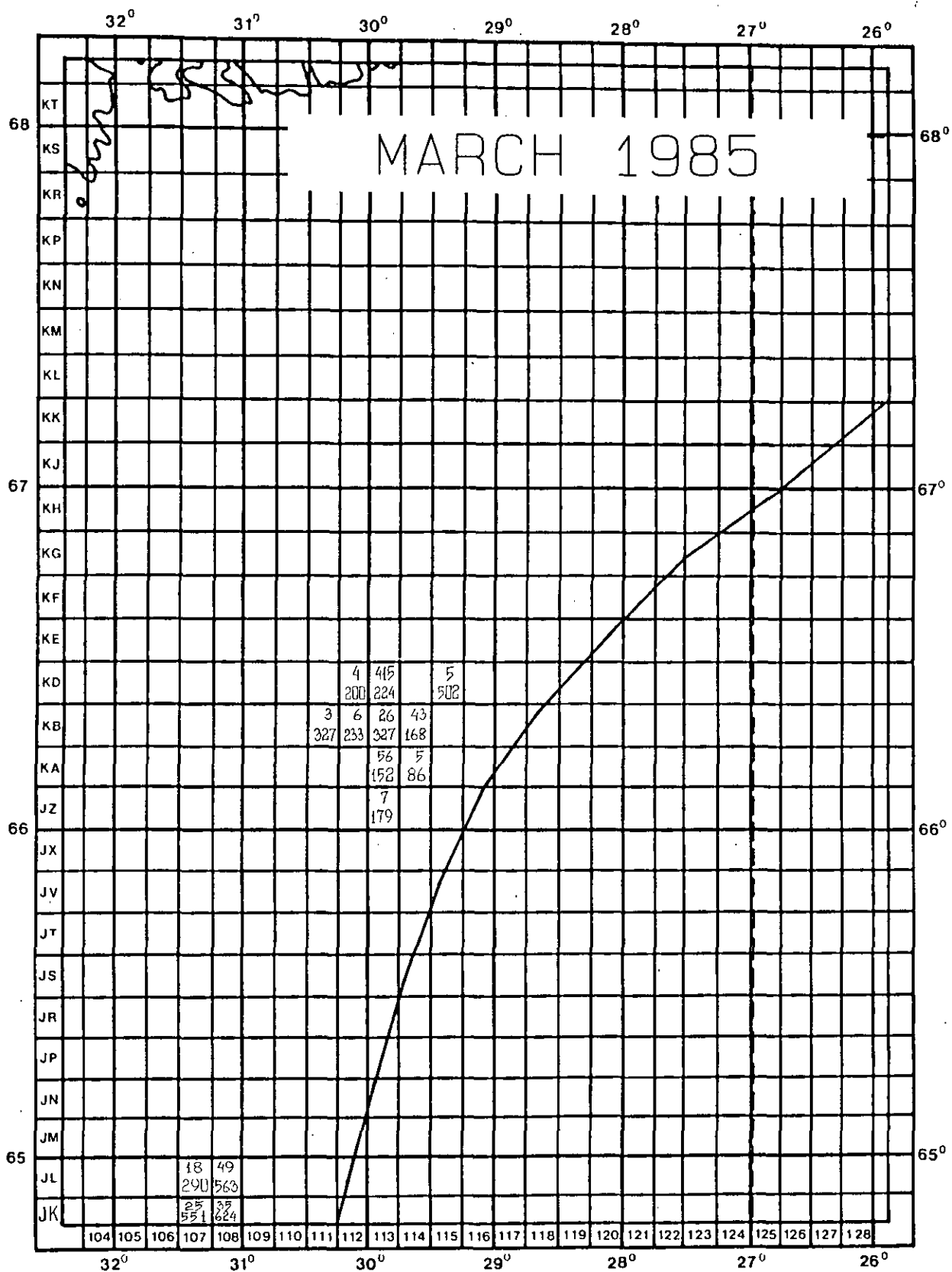


Figure 3c. Distribution of effort and mean catch per hour of shrimp in March 1985 based on logbook information from 2 trawlers. Upper figure in each statistical is no. of hours trawled, lower figure the mean catch rate (kg/hour).

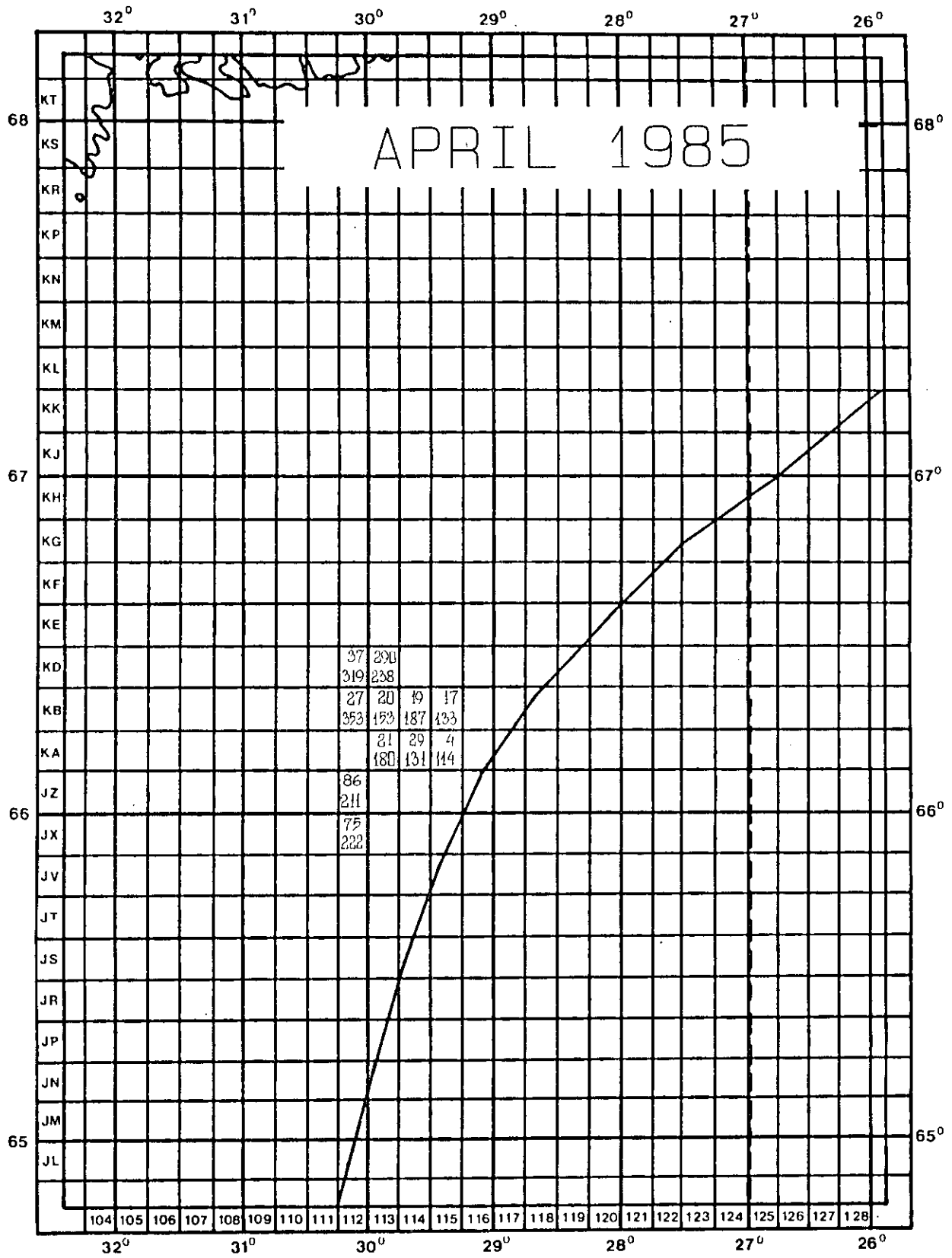


Figure 3d. Distribution of effort and mean catch per hour of shrimp in April 1985 based on logbook information from 2 trawlers. Upper figure in each statistical is no. of hours trawled, lower figure the mean catch rate (kg/hour).

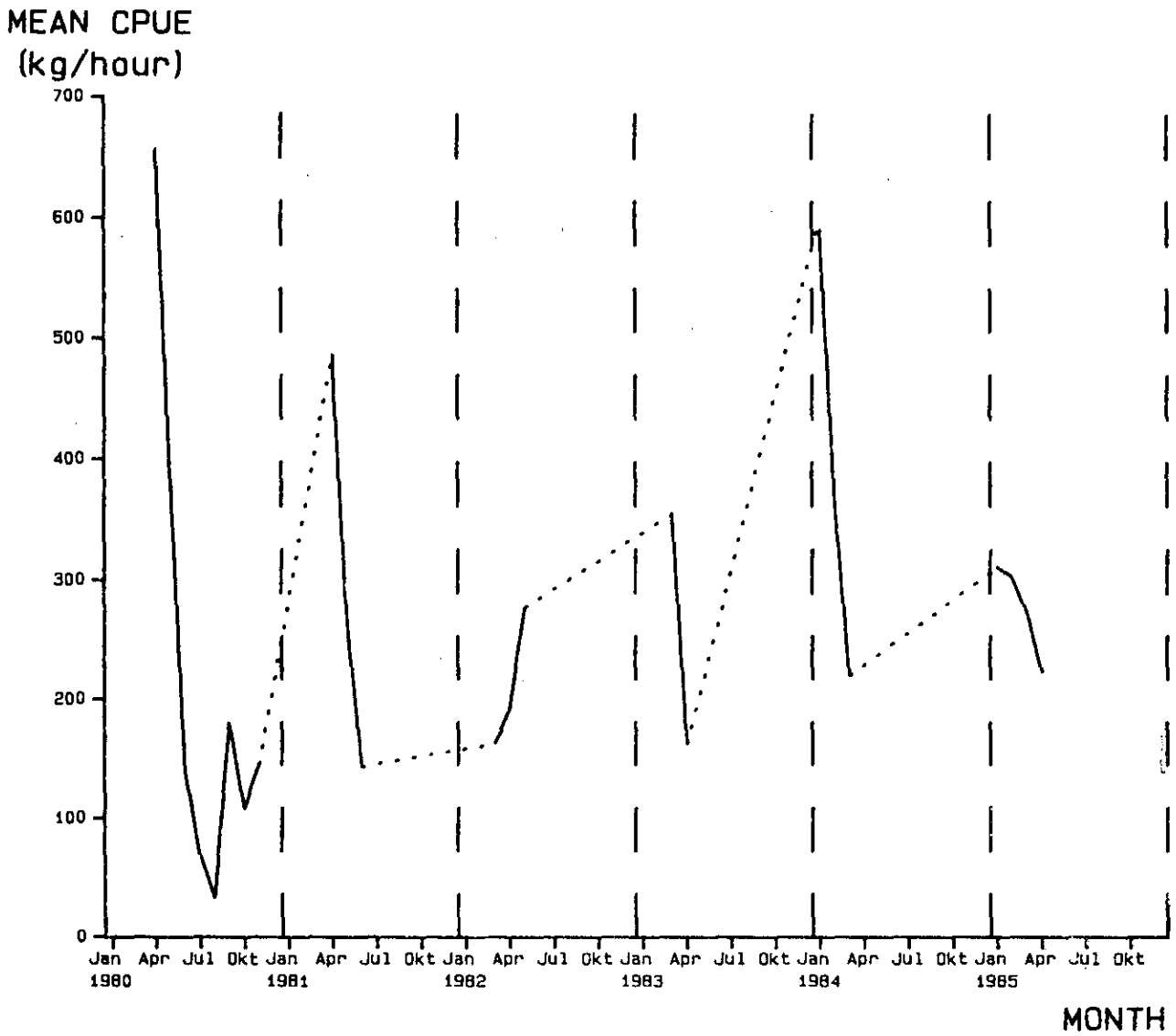


Figure 4. Monthly mean catch rate of shrimp (kg/hour) in the main fishing area at East Greenland from April 1980 to April 1985 based on logbook information (Table 3 shows the corresponding no. of hours trawled).