1988年に北太平洋の沖合水域において行なった日本のさけ・ます調査の概要

Outline of Japanese Salmon Investigations in the Offshore Waters of the North Pacific Ocean in 1988

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水　産　庁
Fisheries Agency of Japan

この文書を引用する場合は下記による：
石田行正．1988．1988年に北太平洋の沖合水域において行なった日本のさけ・ます調査の概要．29頁．（第35回INPFC定例年次会議提出文書．1988年10月．日本，東京）．水産庁．遠洋水産研究所．日本．〒424清水市折戸5－7－1．

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本報告は，1988年6月から8月まで日本が北太平洋及びベーリング海の沖合水域において実施したさけ・ます調査の概要である。資料は現在分析中であり本報告は暫定的数値を含む。なお比較のために（ ）内に1987年の数値を示した。

Ⅰ．さけ・ます調査

1．母　　船

1988年の母船式さけ・ます流し網漁業は，1母船（3），43独航船（129）によって実施された。船団は6月1日に函館を出港し，7月21日に函館へ帰港した。母船への水揚げは6月8日に開始され，7月14日に終了した。この間34回（90）の船団操業が実施された（表1）。母船上での魚体測定尾数は，ベニザケ2,749尾（7,886），シロザケ1,037尾（2,713），カラフトマス1,020尾（2,693），ギンザケ0尾（896），マスノスケ441尾（2,451），計5,247尾（16,639）であった。

2．調　査　船

1988年に沖合水域において活動したさけ・ます調査船は11隻である（表2）。さけ・ます調査船が使用した漁具は流し網並びにはえなわである（図2）。

流し網調査は6月7日に開始され，8月6日に終了した。流し網調査回数は6月94回，7月74回，8月3回，計171回（180）であった（図3～5）。

はえなわ調査は6月4日に開始され，7月18日に終了した。はえなわ調査回数は6月162回，7月64回，計256回（240）であった（図6～7）。

標識放流尾数は，ベニザケ274尾（210），シロザケ4,930尾（3,146），カラフトマス1,330尾（3,276），ギンザケ1,020尾（879），マスノスケ55尾（50），スチール・ヘッド99尾(63)，計7,708尾（7,624）であった。

なお，スチール・ヘッド，ギンザケの脂鰭欠損魚から頭部標本を，またマスノスケ，ギンザケから寄生虫調査用の頭部標本を採集した。

3．共同調査による科学者の乗船

第3歓喜丸に加国科学者D. Welch，新りあす丸に米国科学者J. Light，S. Carver，おしょろ丸に米国科学者M. Muto，K. Myers，O. Mathisen，P. Poe　が乗船した。一方，加国調査船

Ricker 号に日本国科学者小倉が乗船した。また日ソ共同調査として北光丸にソ連科学者が乗船した。

Ⅱ．北西太平洋及びベーリング海におけるサケ科魚類の分布状況

調査船による10種類目合構成の非選択的調査用流し網（C網）による100反当り漁獲尾数を，魚種別，月別，1°x 5°海区別に図8～25に示した。これらの資料と過去の長年平均（1972～1987年）とを比較した（表3）。方法は高木（1986）に準じた。ただし，比較は月別・1°x 5°海区を基礎とした。

これによるとベニザケ，シロザケ，カラフトマスは各海域で過去の平均値より豊度が高かった。一方，ギンザケは北太平洋で豊度が低く，マスノスケはベーリング海で豊度が高かった。

文　　献

高　木　健　治　1986.

1986年に北太平洋の沖合水域において行なった日本のさけ・ます調査の概要　36頁．水産庁．遠洋水産研究所．

Table 1. Japanese salmon mothership activities in 1988.

Mothership	Gross tonnage	Number of catcher boats	Left Hakodate	Arrived fishing grounds	Left fishing grounds	Returned Hakodate	Days on fishing grounds	Days of fishing operations
Kizan maru	8,859.11	43	June 1	June 7	July 14	July 21	38	34

Table 2. Japanese salmon research vessel activities in 1988.

Vessel	Cruise	Left Date	Left Port	Returned Date	Returned Port	Duration 1st fishing	Duration Last fishing	Number of set Gillnet	Number of set Longline	Number of set Tagging
Hokushin maru	1	June 1	Kushiro	July 4	Kushiro	June 7	June 30	24	0	0
Oshoro maru	1	June 6	Hakodate	Aug. 18	Hakodate	June 14	July 21	27	3	1
Hokusei maru	1	June 1	Hakodate	June 15	Hakodate	June 7	June 12	6	0	0
	2	June 20	Hakodate	July 4	Hakodate	June 24	June 27	4	0	0
	3	July 11	Hakodate	Aug. 10	Hakodate	July 18	Aug. 6	13	0	0
Hokko maru	1	June 25	Kushiro	July 19	Kushiro	June 30	July 15	12	4	4
Iwaki maru	1	June 1	Onahama	July 15	Kushiro	June 9	July 10	31	0	0
Hokuho maru	1	June 6	Hakodate	Aug. 3	Kushiro	June 13	July 20	12	45	45
Wakatake maru	1	June 7	Hakodate	July 27	Hakodate	June 15	July 18	21	16	13
Kaiun maru	1	June 5	Kushiro	July 19	Kushiro	June 13	July 12	28	0	0
Shin-Riasu maru	1	June 1	Miyako	July 21	Kushiro	June 4	July 17	0	74	74
Etsuzan maru	1	June 1	Masaki	July 21	Kushiro	June 10	July 16	0	67	66
Kanki maru No.3	1	June 3	Yamada	July 7	Kushiro	June 8	July 2	0	47	47

Table 3. Comparison of relative abundance of salmon between 1988 and averages in the past.

Area	Year	Species				
		Sockeye	Chum	Pink	Coho	Chinook
North Pacific	1988	65	112	178	8	1
West of 175° E	1972-1987	32	40	157*	16	1
North Pacific	1988	79	112	32	15	1
East of 175° E	1972-1987	59	70	28*	30	1
Bering Sea	1988	165	190	43	0	38
	1972-1987	62	134	27*	0	10
Total	1988	85	124	107	9	7
	1972-1987	46	65	93*	18	2

* Data in even years were used for pink salmon.

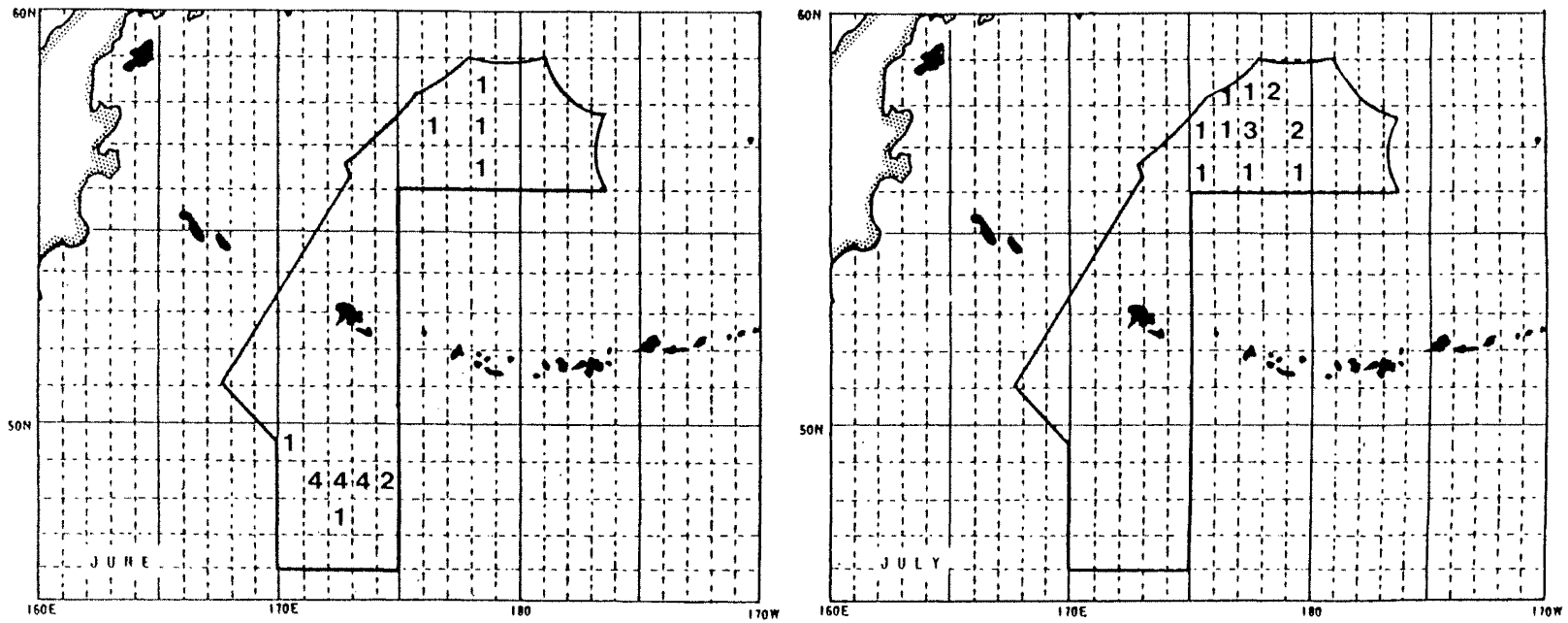

Figure 1. Noon positions of Japanese salmon mothership on landing days in June and July, 1988.

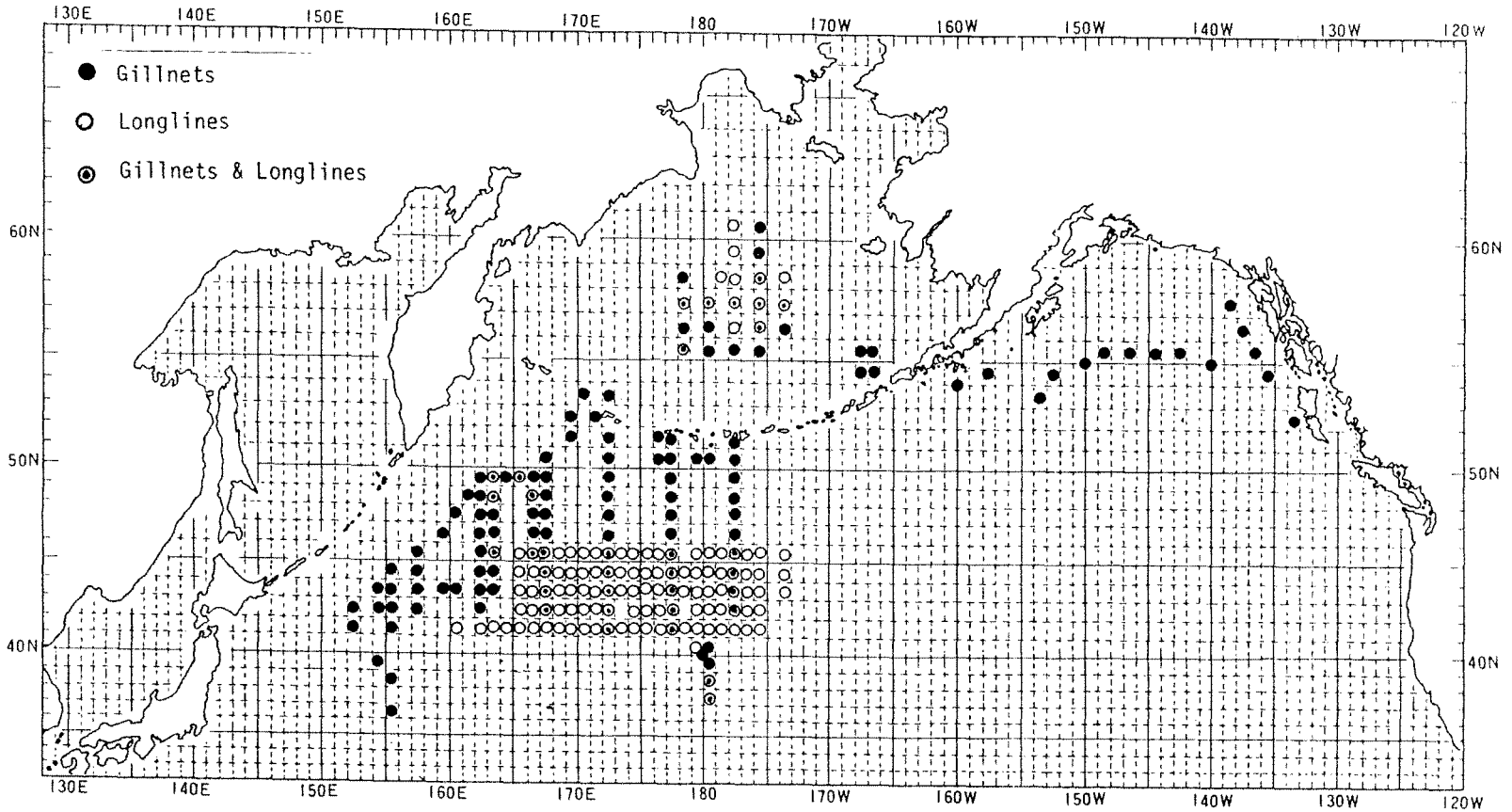

Figure 2. Fishing locations of Japanese salmon research vessels by gillnets and longlines, 1988.

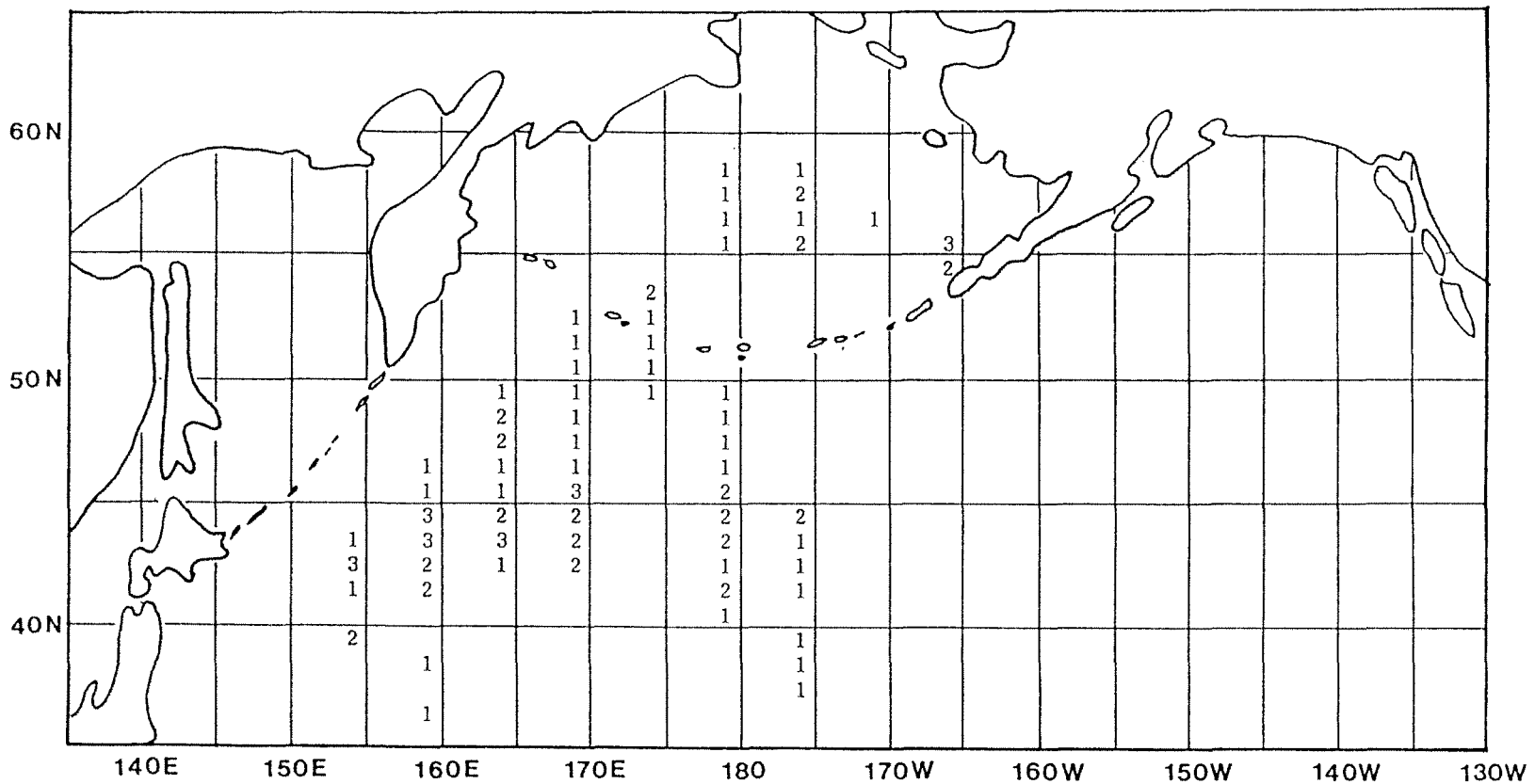

Figure 3. Gillnetting locations of Japanese research vessels in June, 1988.

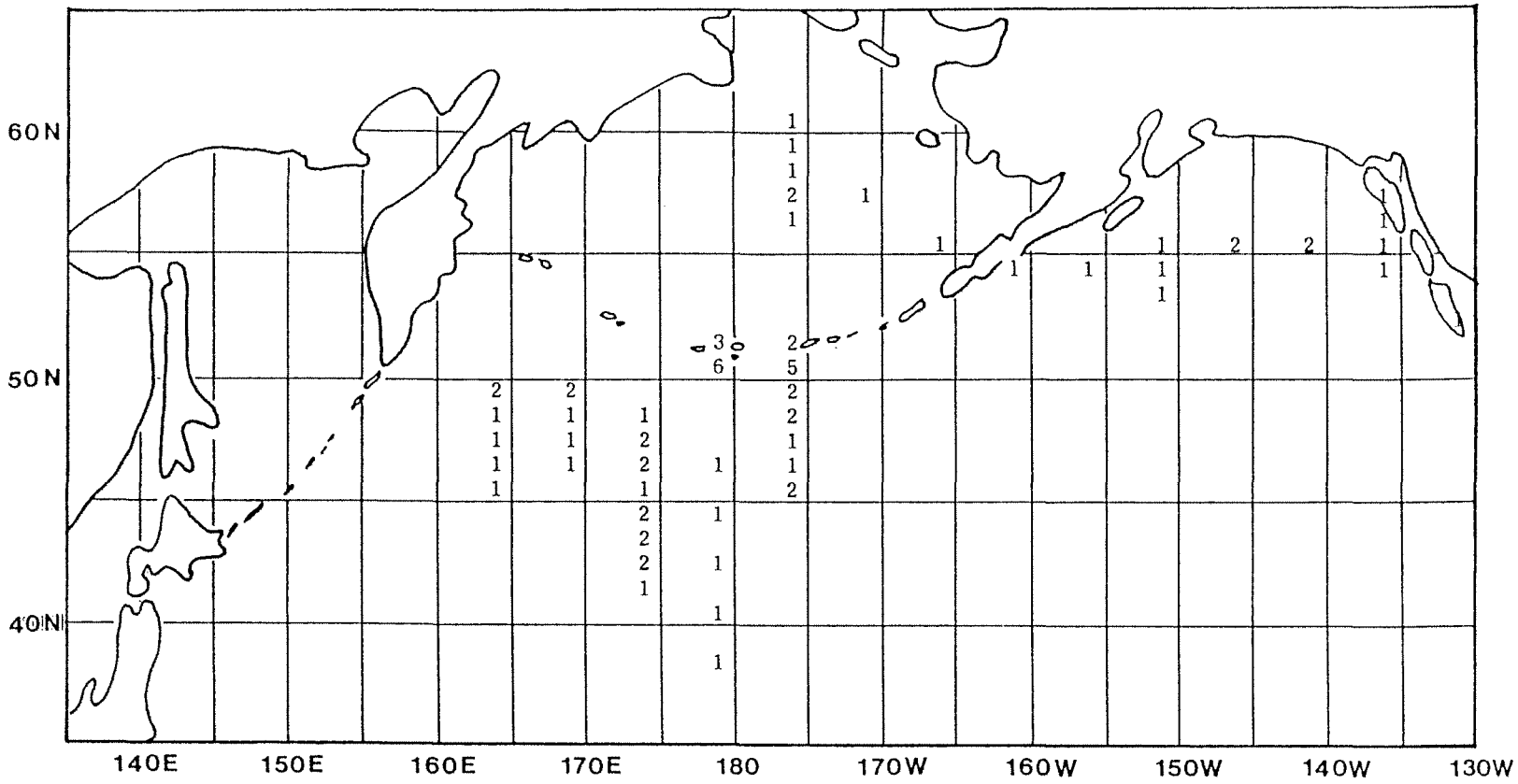

Figure 4. Gillnetting locations of Japanese research vessels in July, 1988.

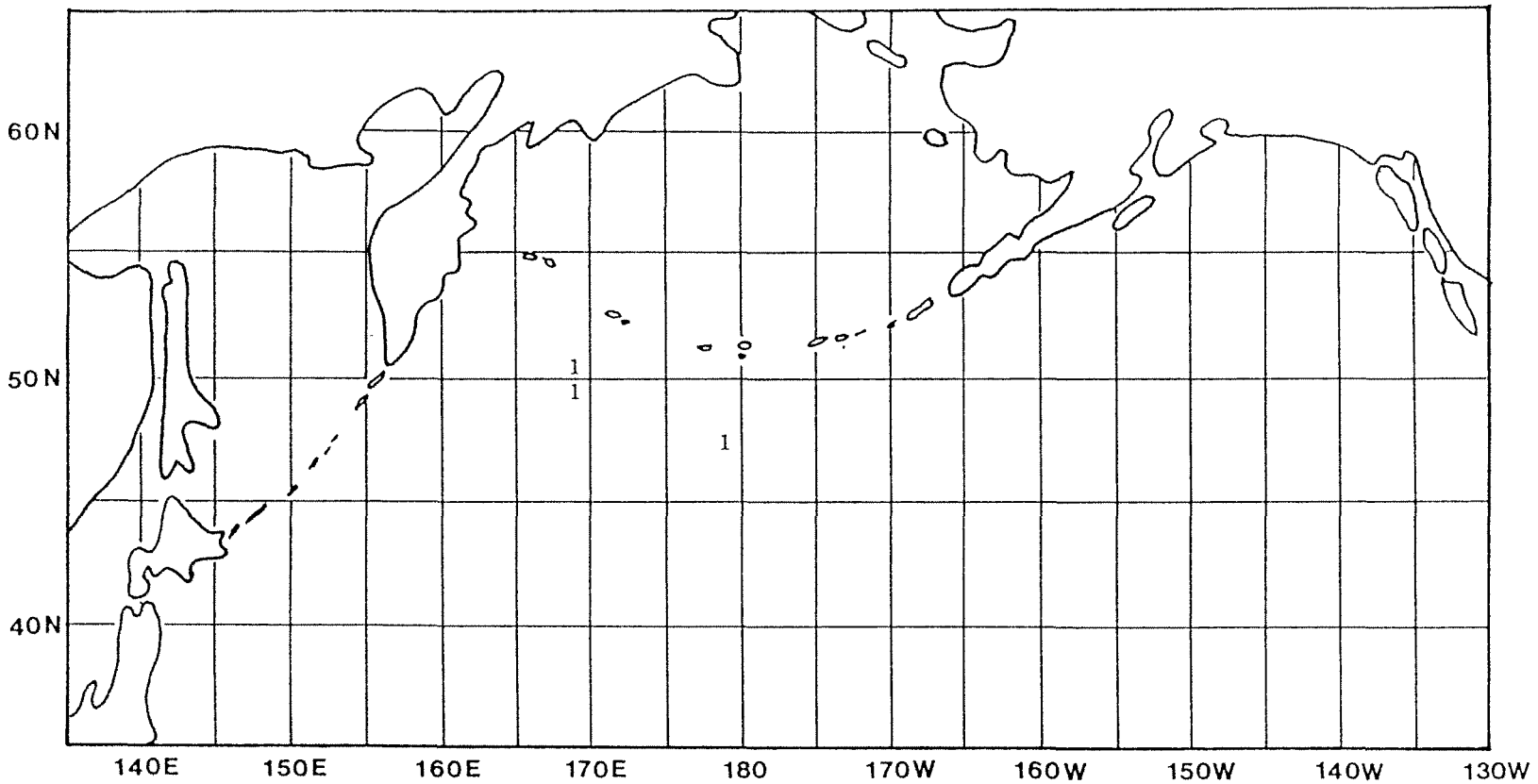

Figure 5. Gillnetting locations of Japanese research vessels in August, 1988.

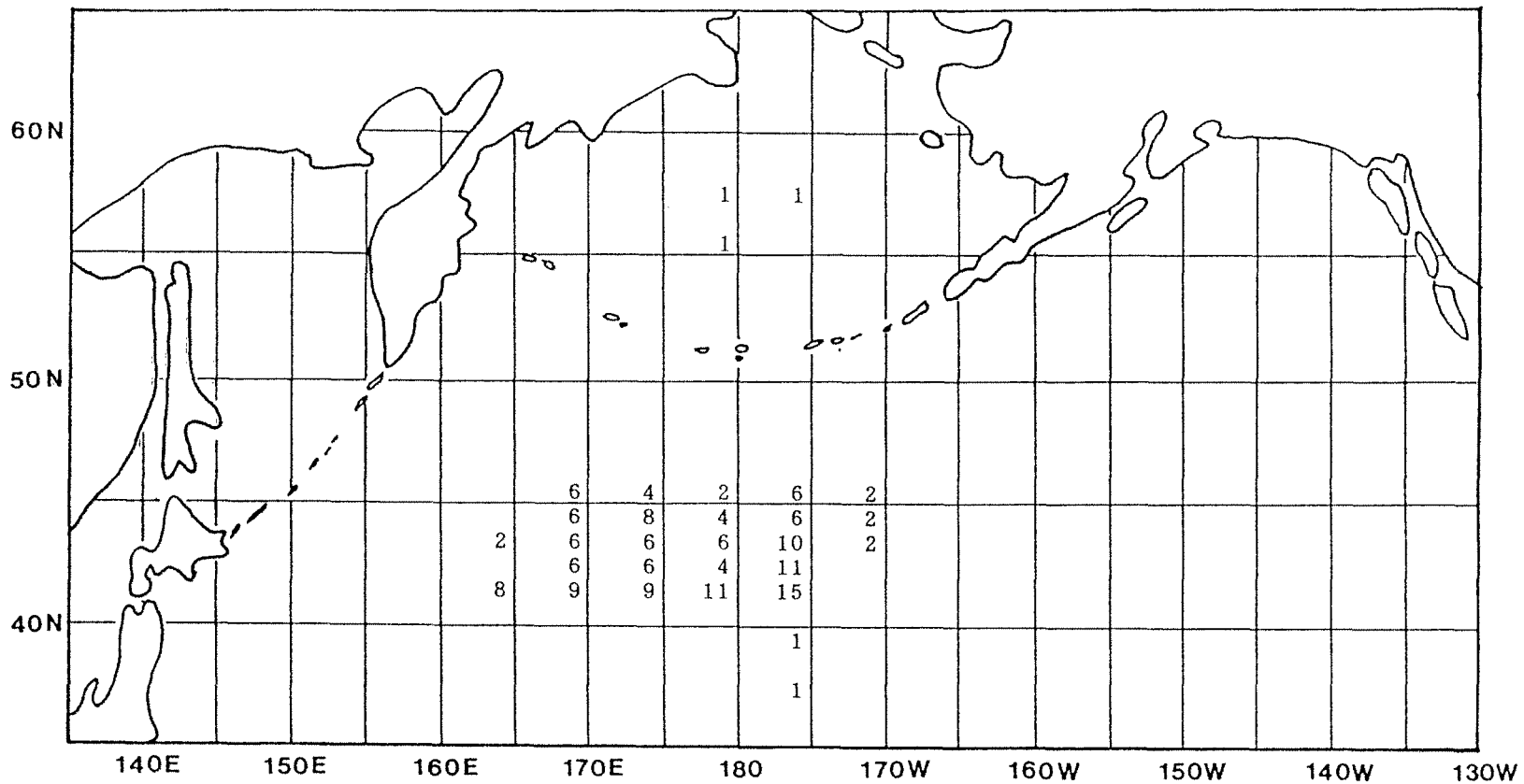

Figure 6. Longlining locations of Japanese research vessels in June, 1988.

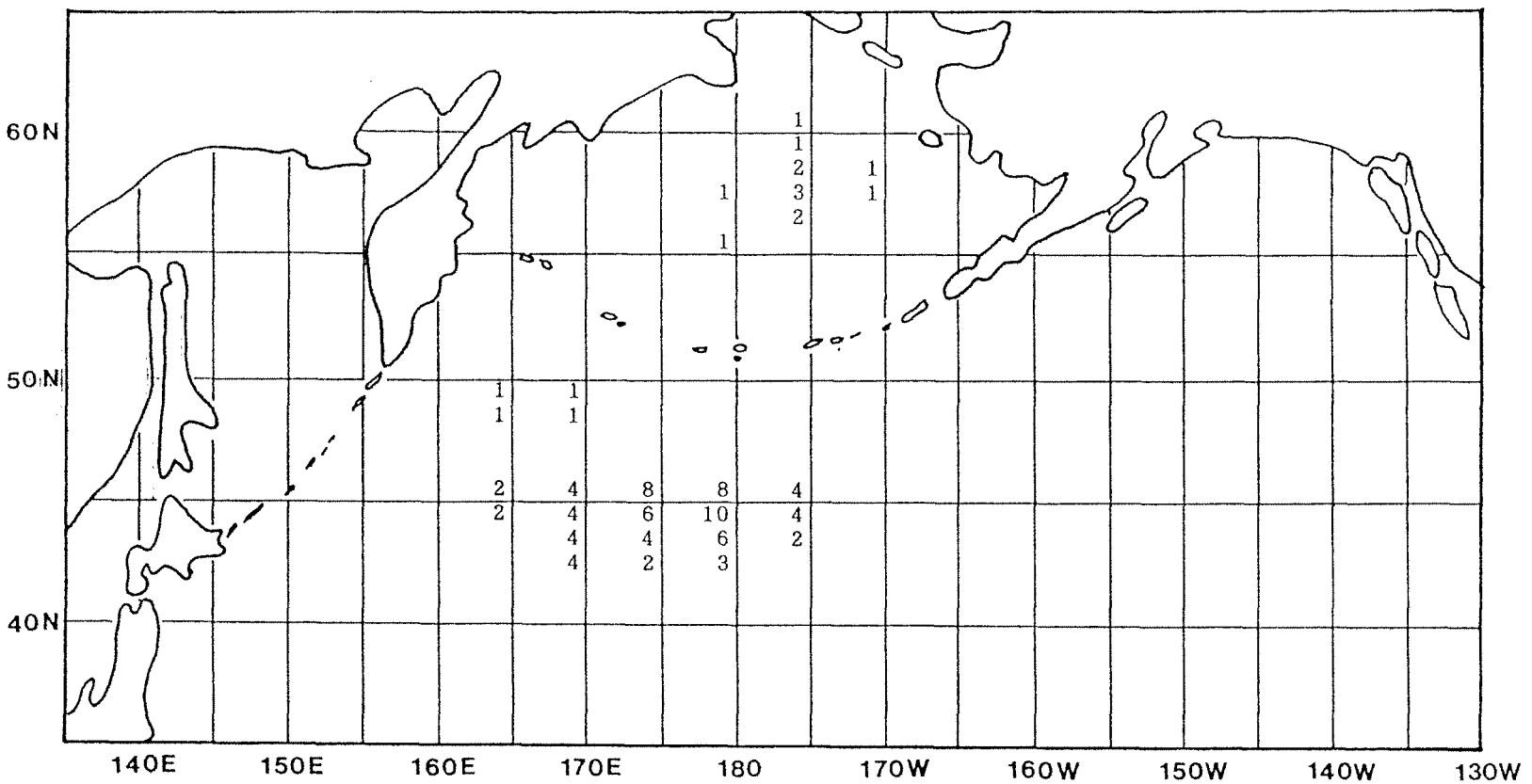

Figure 7. Longlining locations of Japanese research vessels in July, 1988.

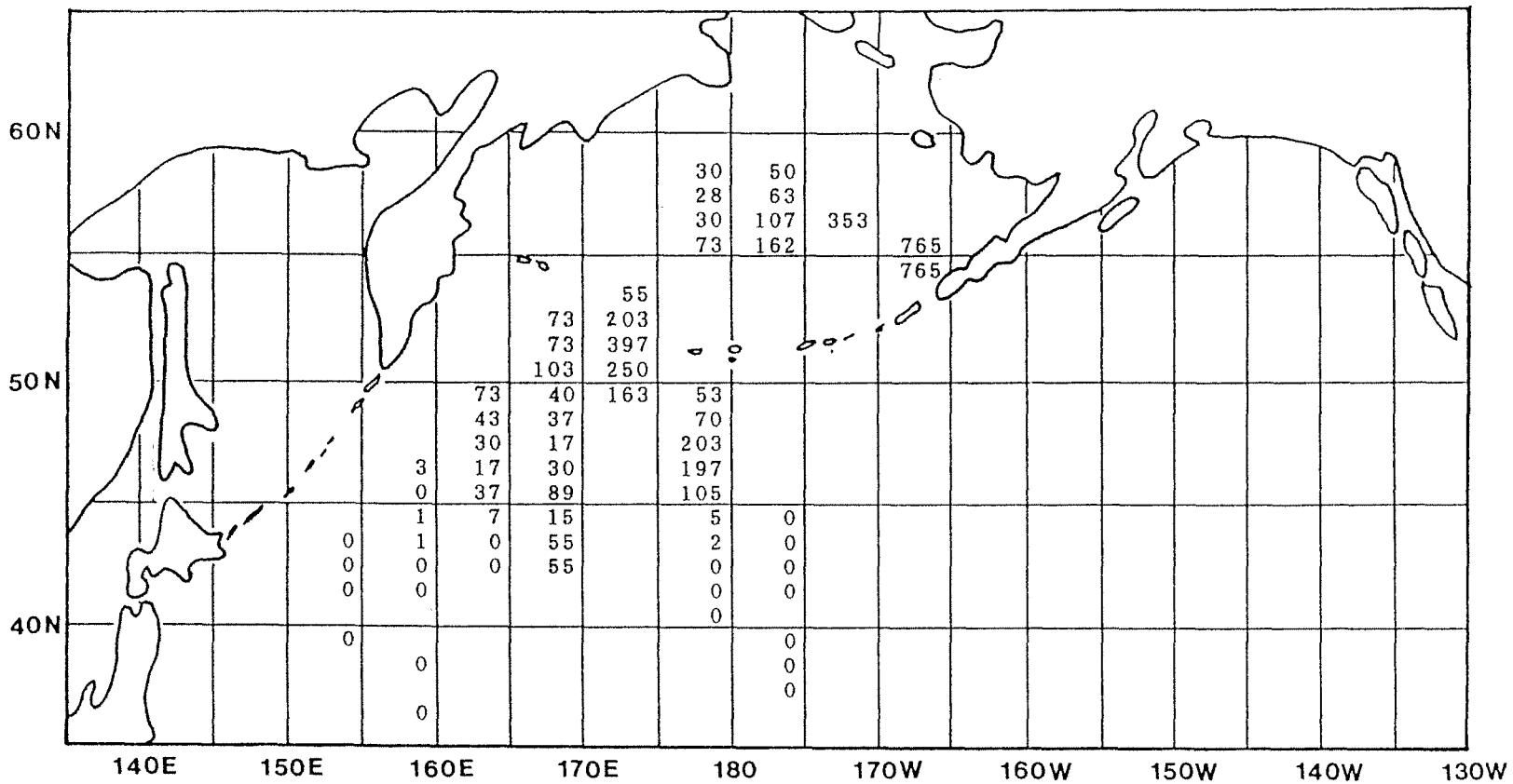

Figure 8. CPUE distribution of sockeye salmon caught by the 100 tans of research gillnets in June, 1988.

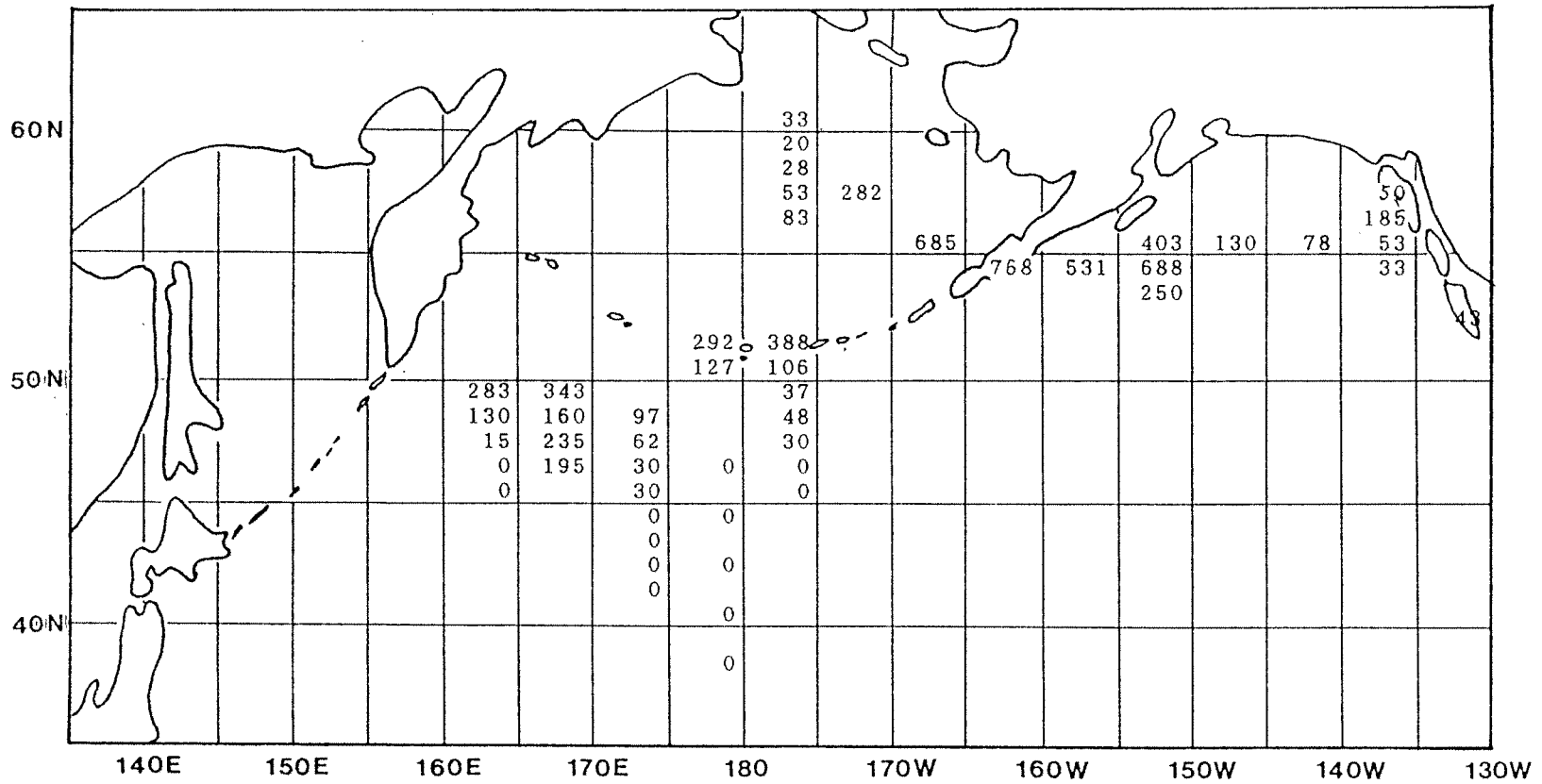

Figure 9. CPUE distribution of sockeye salmon caught by the 100 tans of research gillnets in July, 1988.

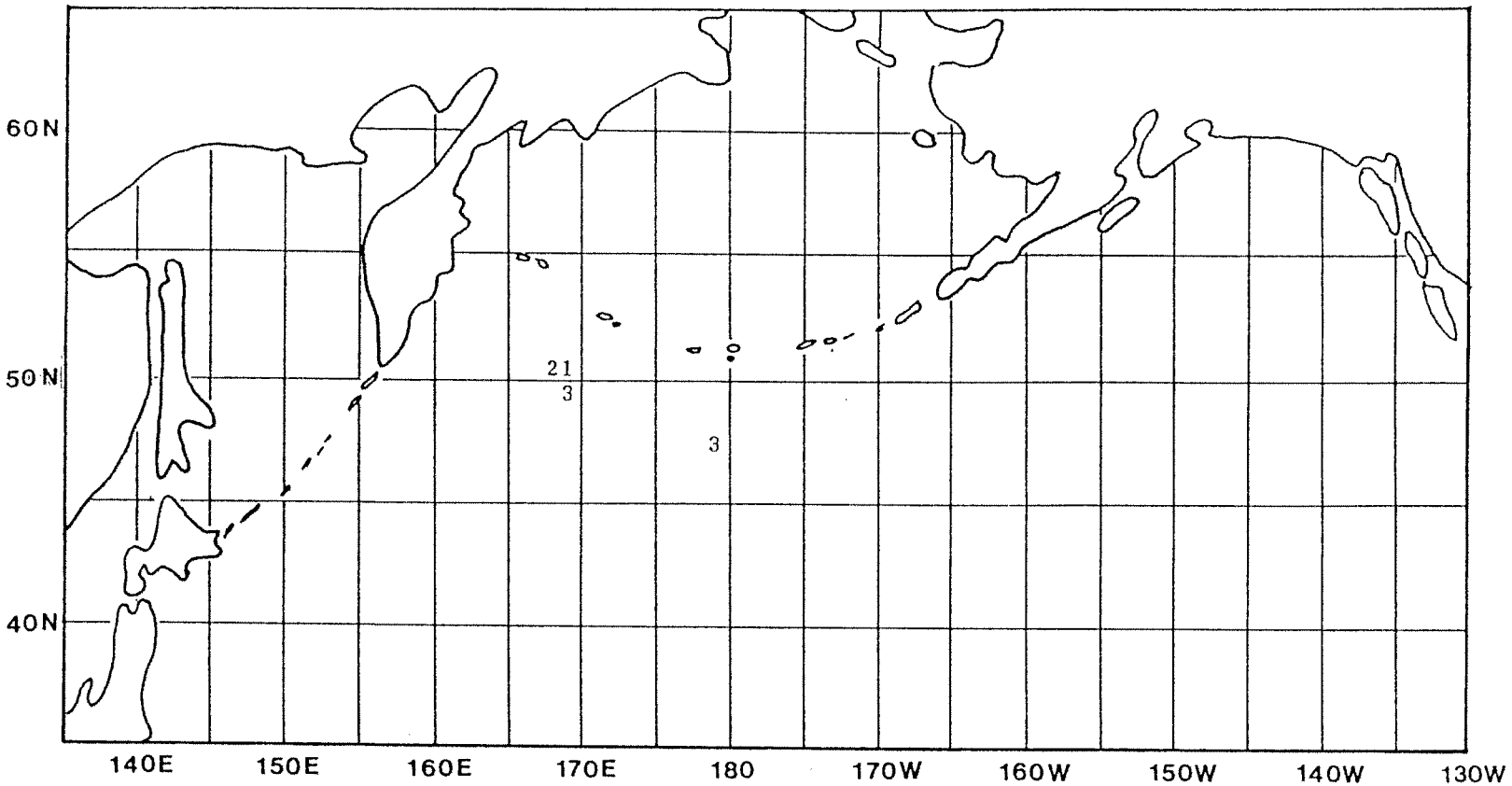

Figure 10. CPUE distribution of sockeye salmon caught by the 100 tans of research gillnets in August, 1988.

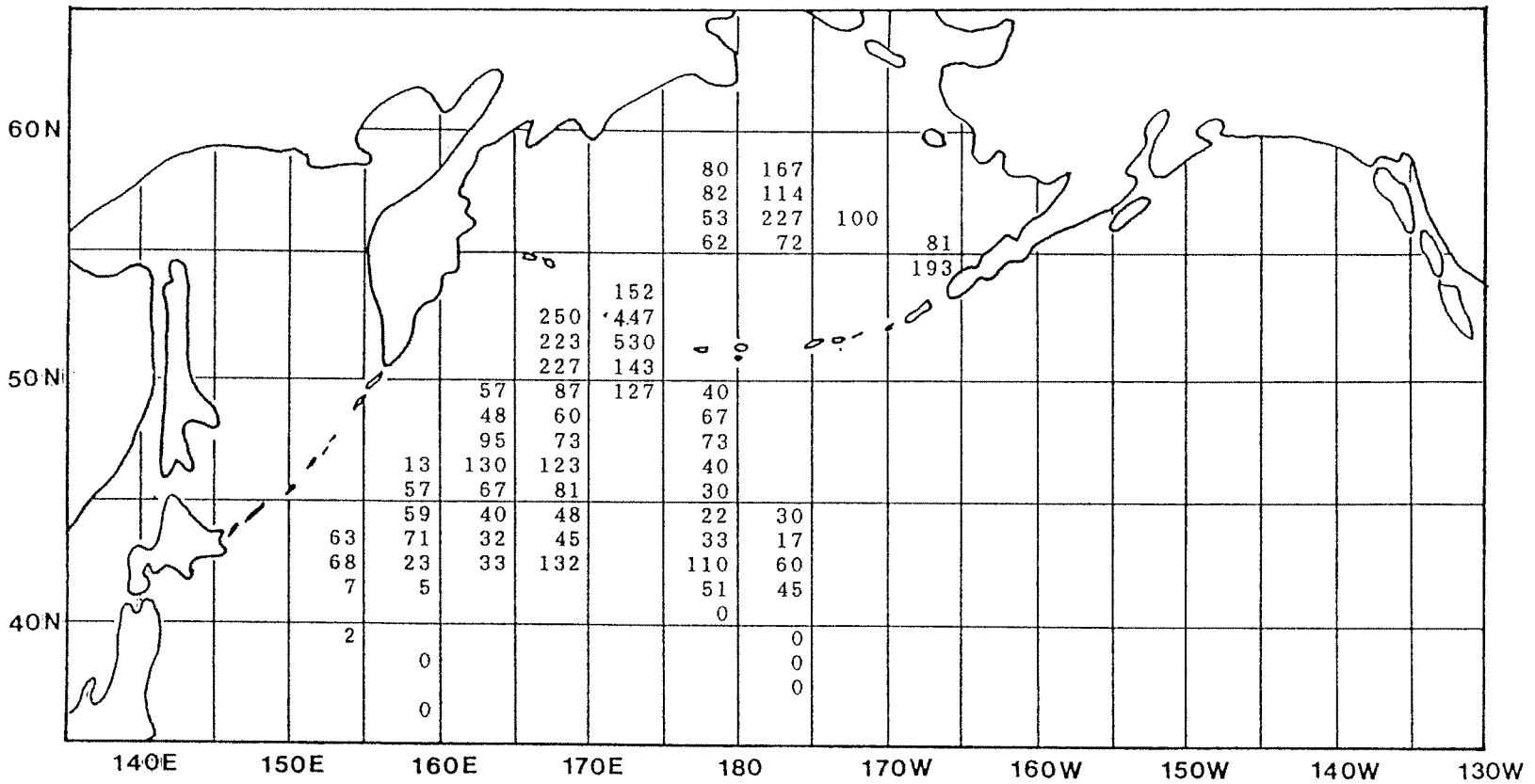

Figure 11. CPUE distribution of chum salmon caught by the 100 tans of research gillnets in June, 1988.

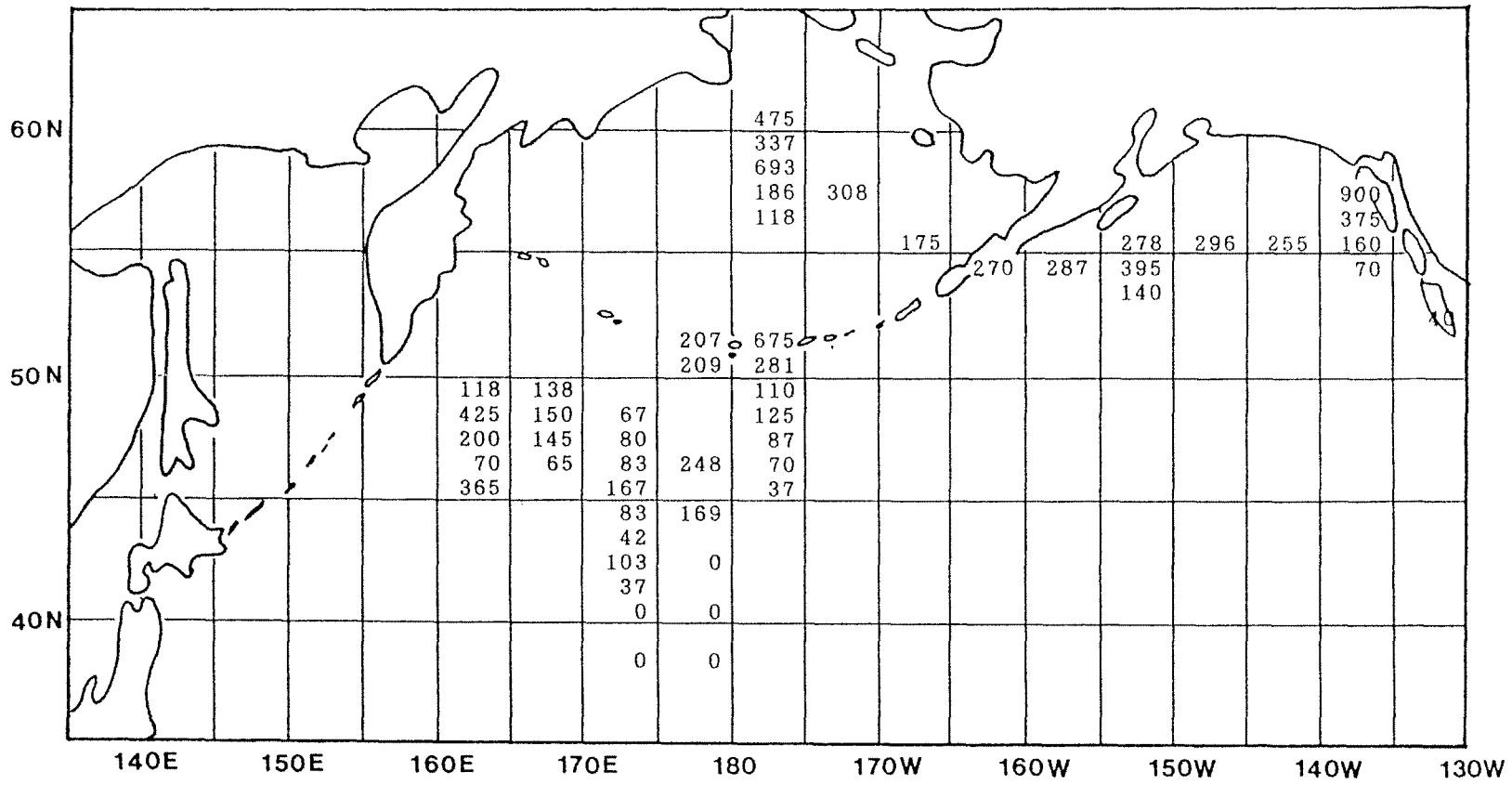

Figure 12. CPUE distribution of chum salmon caught by the 100 tans of research gillnets in July, 1988.

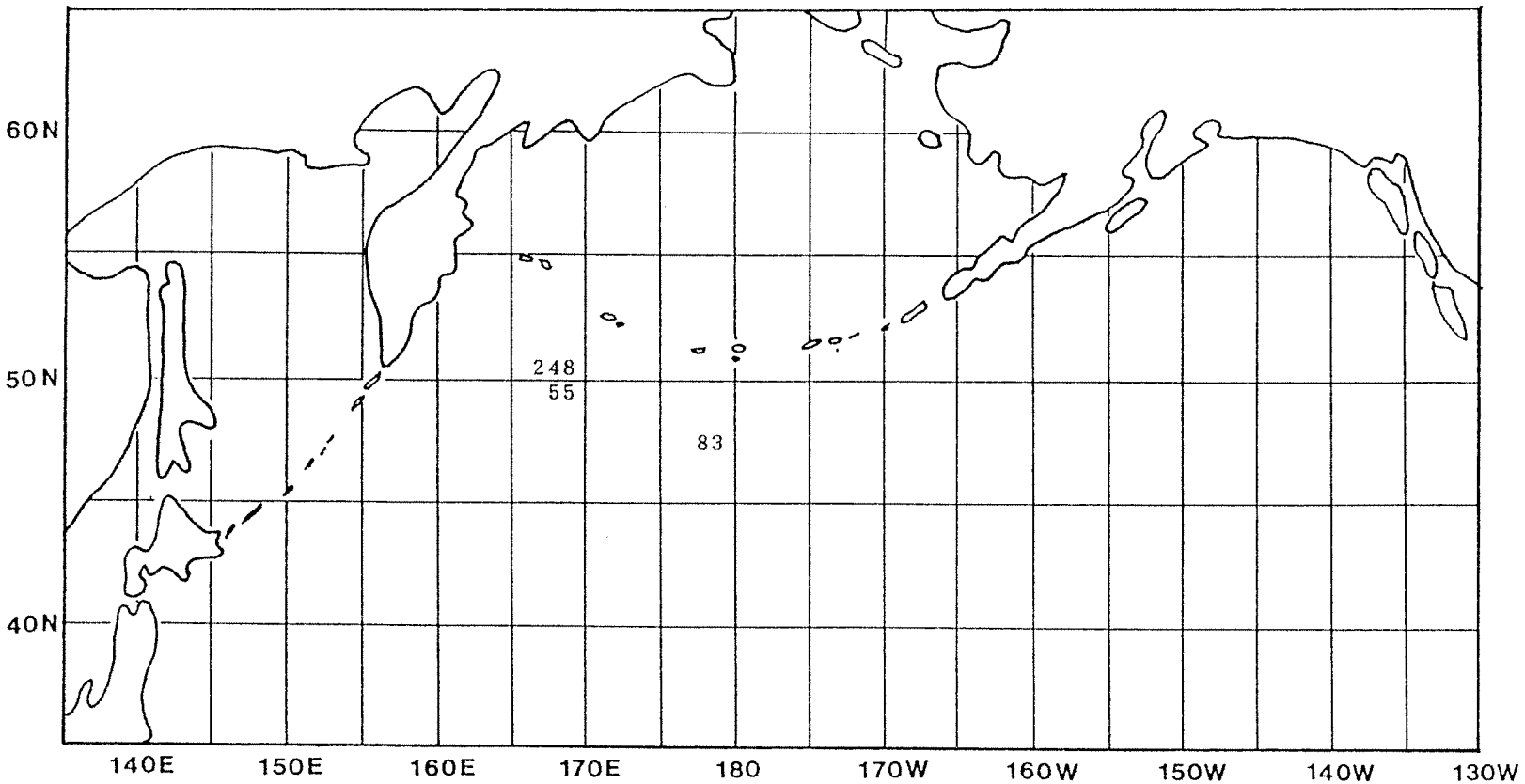

Figure 13. CPUE distribution of chum salmon caught by the 100 tans of research gillnets in August, 1988.

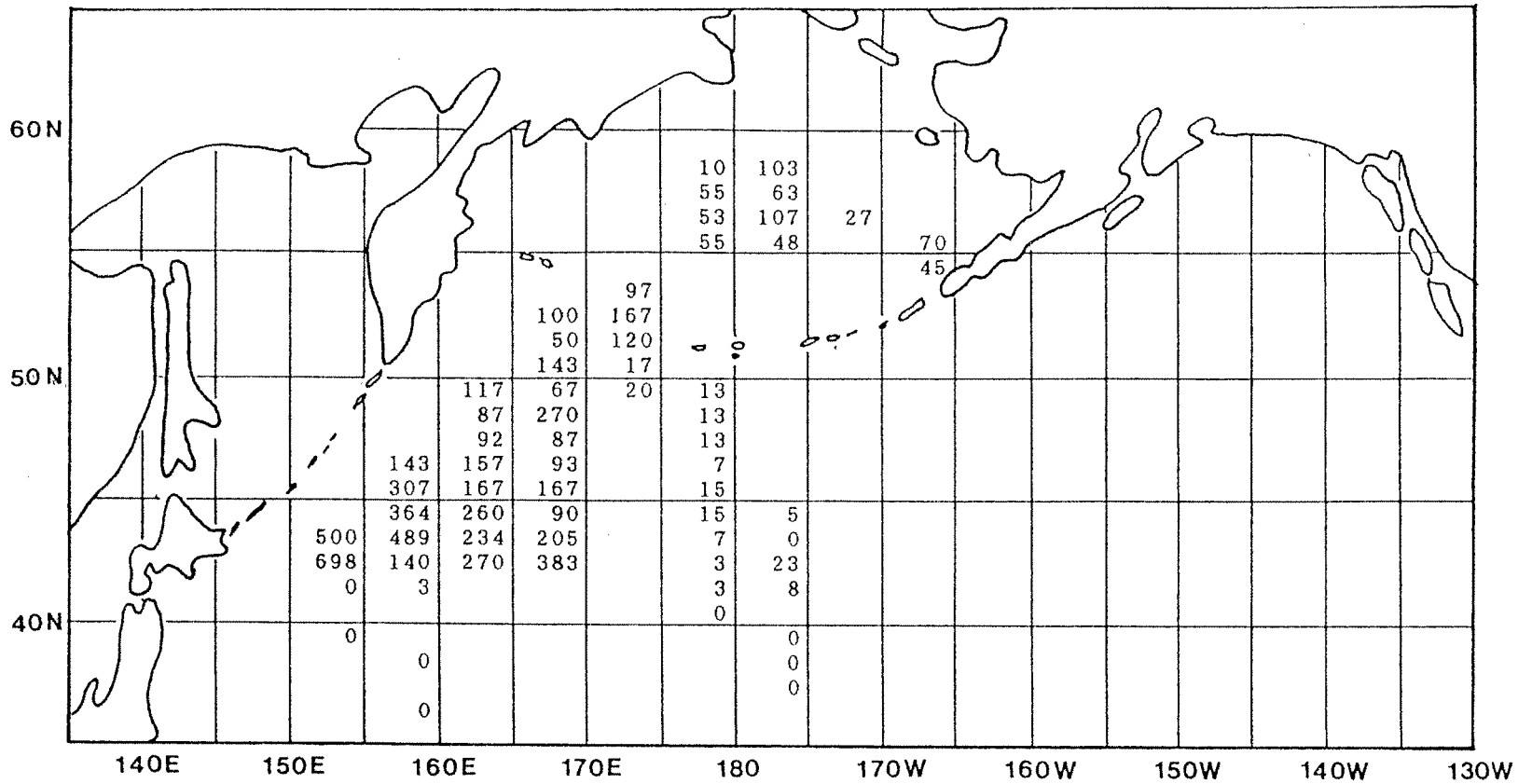

Figure 14. CPUE distribution of pink salmon caught by the 100 tans of research gillnets in June, 1988.

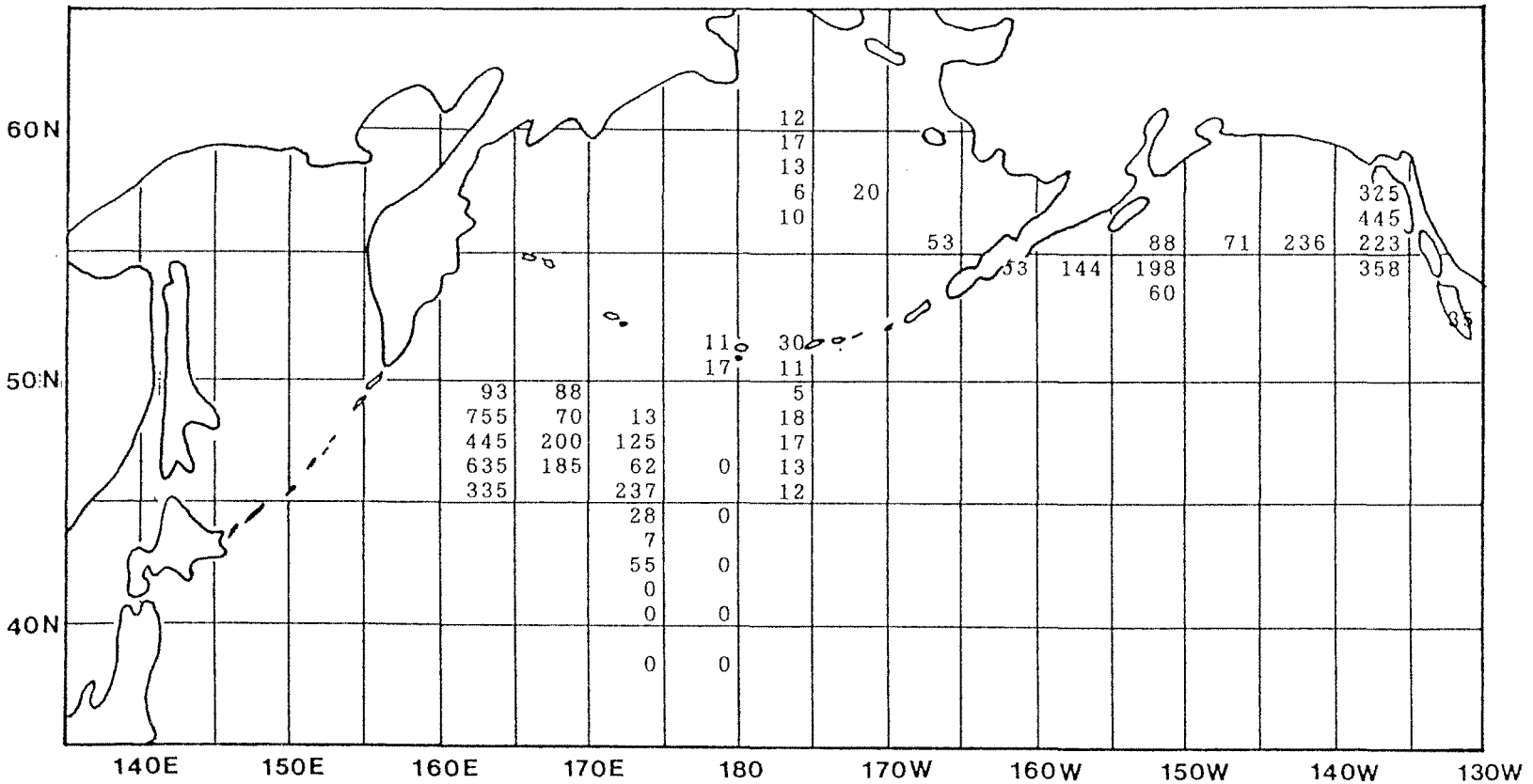

Figure 15. CPUE distribution of pink salmon caught by the 100 tans of research gillnets in July, 1988.

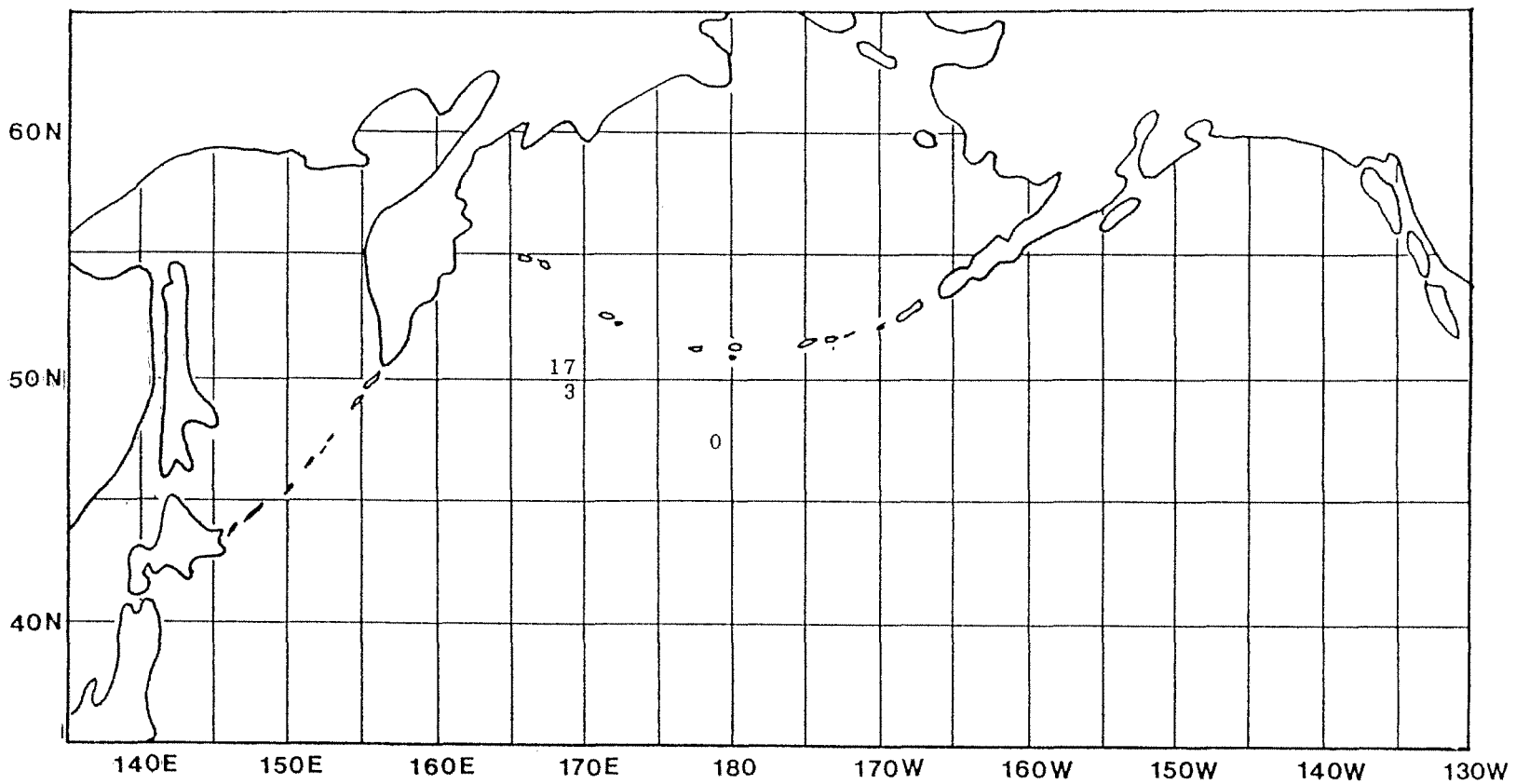

Figure 16. CPUE distribution of pink salmon caught by the 100 tans of research gillnets in August, 1988.

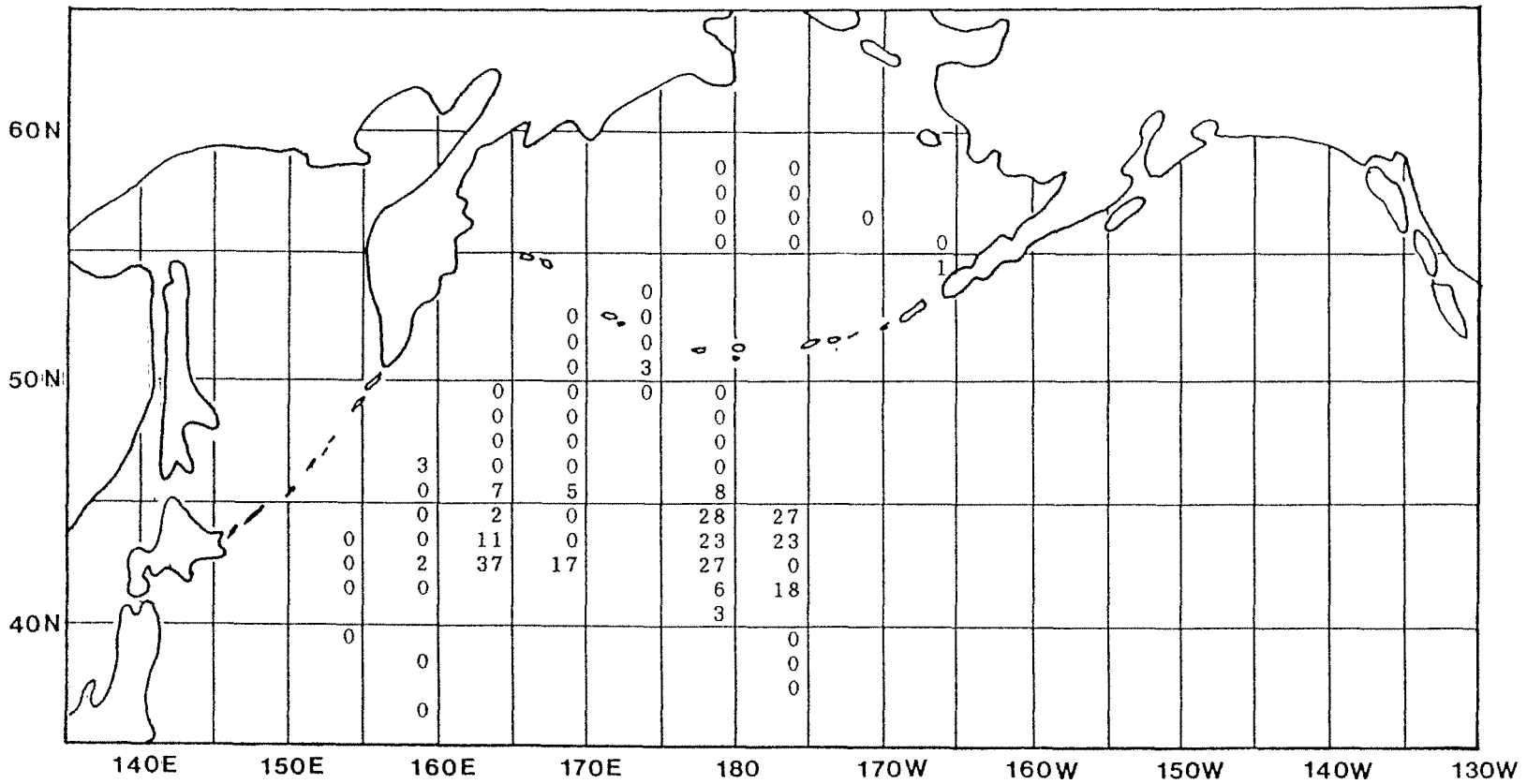

Figure 17. CPUE distribution of coho salmon caught by the 100 tans of research gillnets in June, 1988.

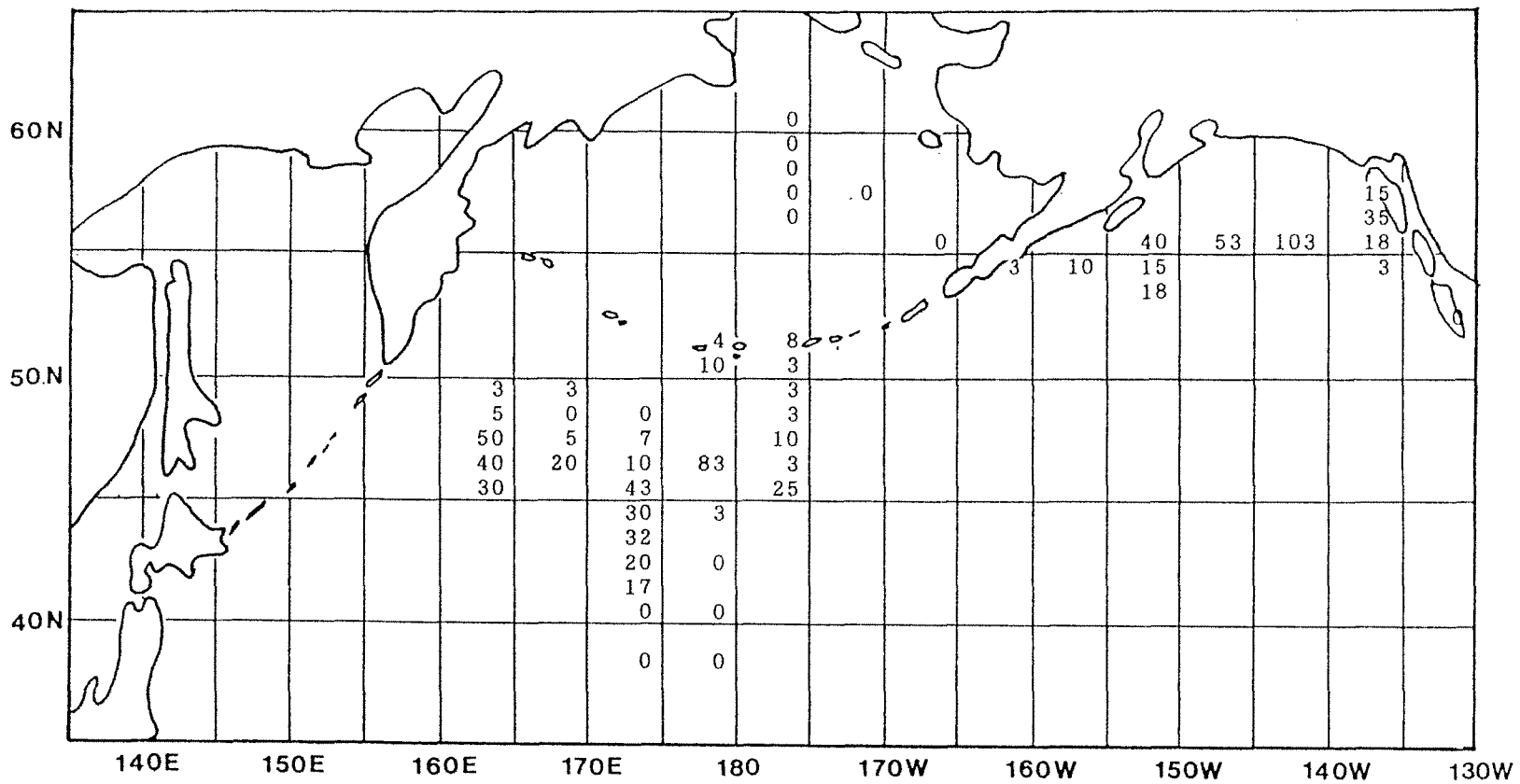

Figure 18. CPUE distribution of coho salmon caught by the 100 tans of research gillnets in July, 1988.

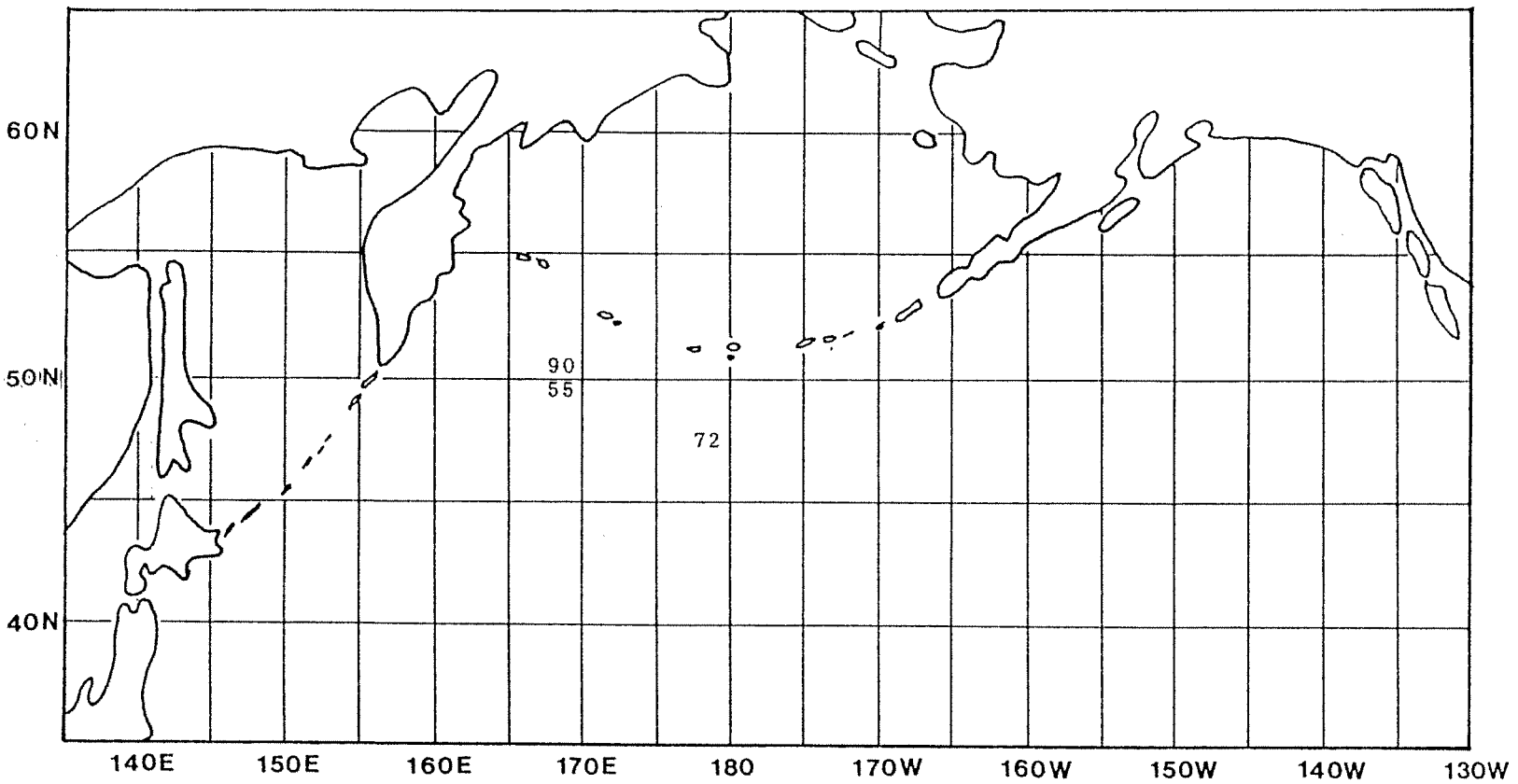

Figure 19. CPUE distribution of coho salmon caught by the 100 tans of research gillnets in August, 1988.

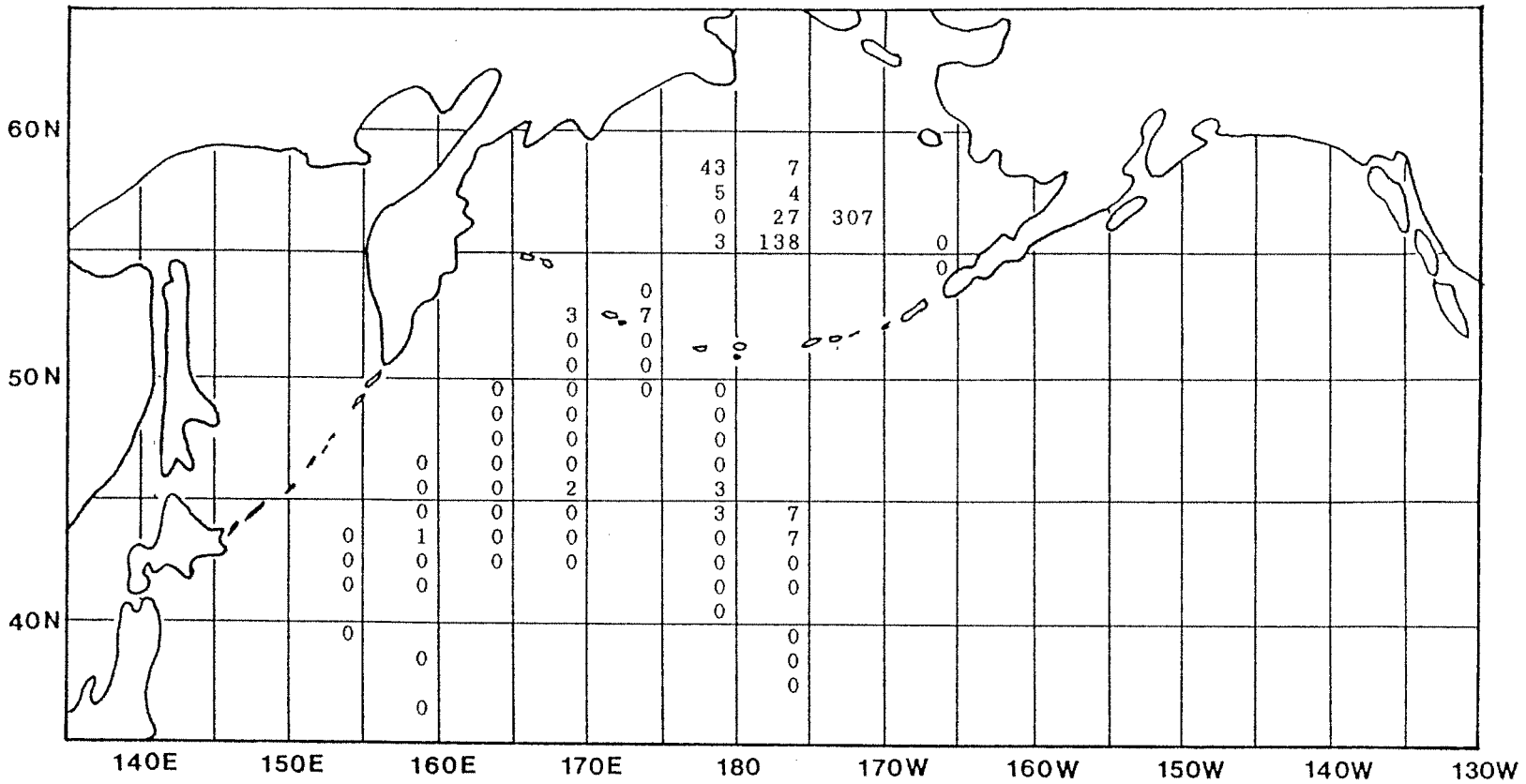

Figure 20. CPUE distribution of chinook salmon caught by the 100 tans of research gillnets in June, 1988.

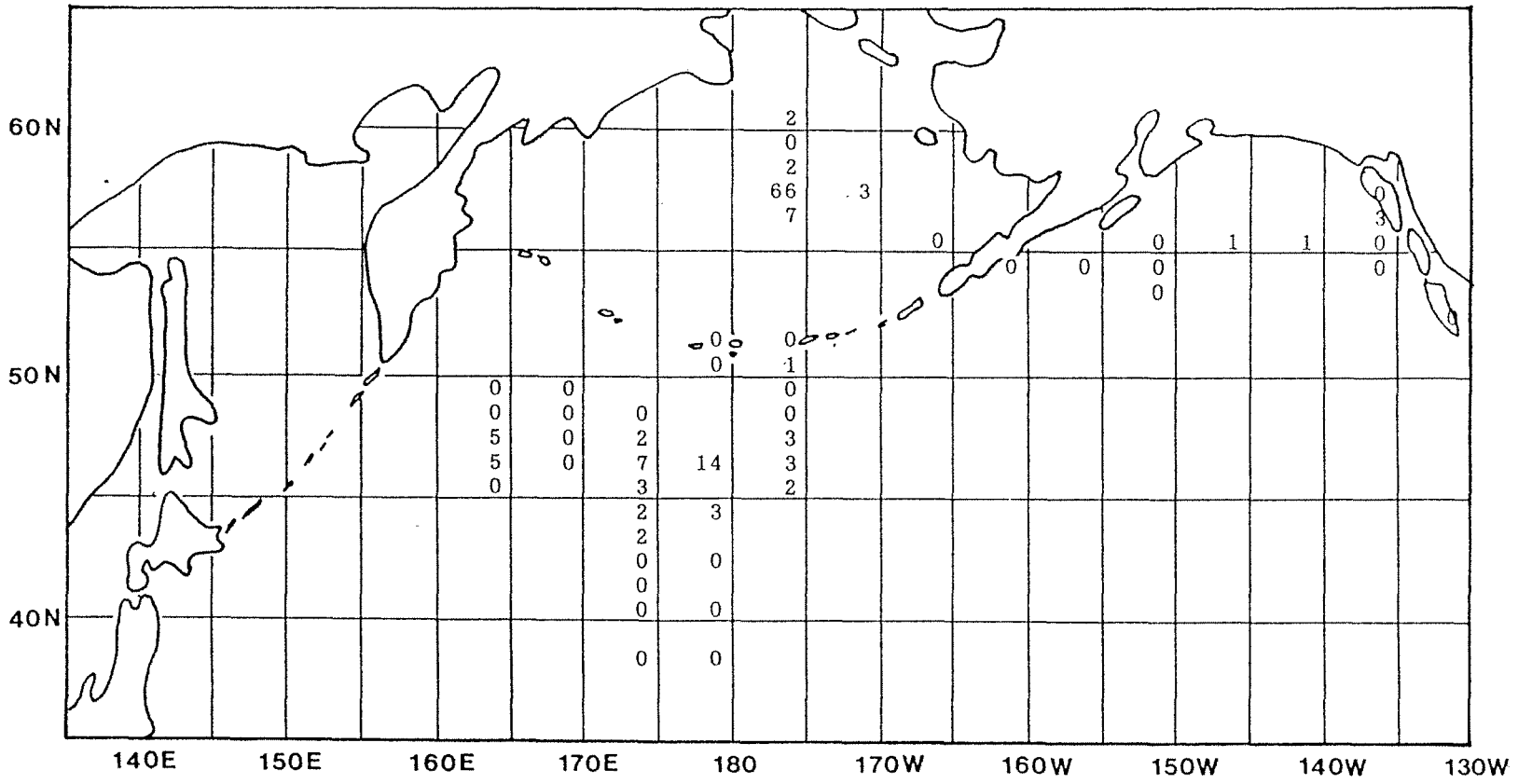

Figure 21. CPUE distribution of chinook salmon caught by the 100 tans of research gillnets in July, 1988.

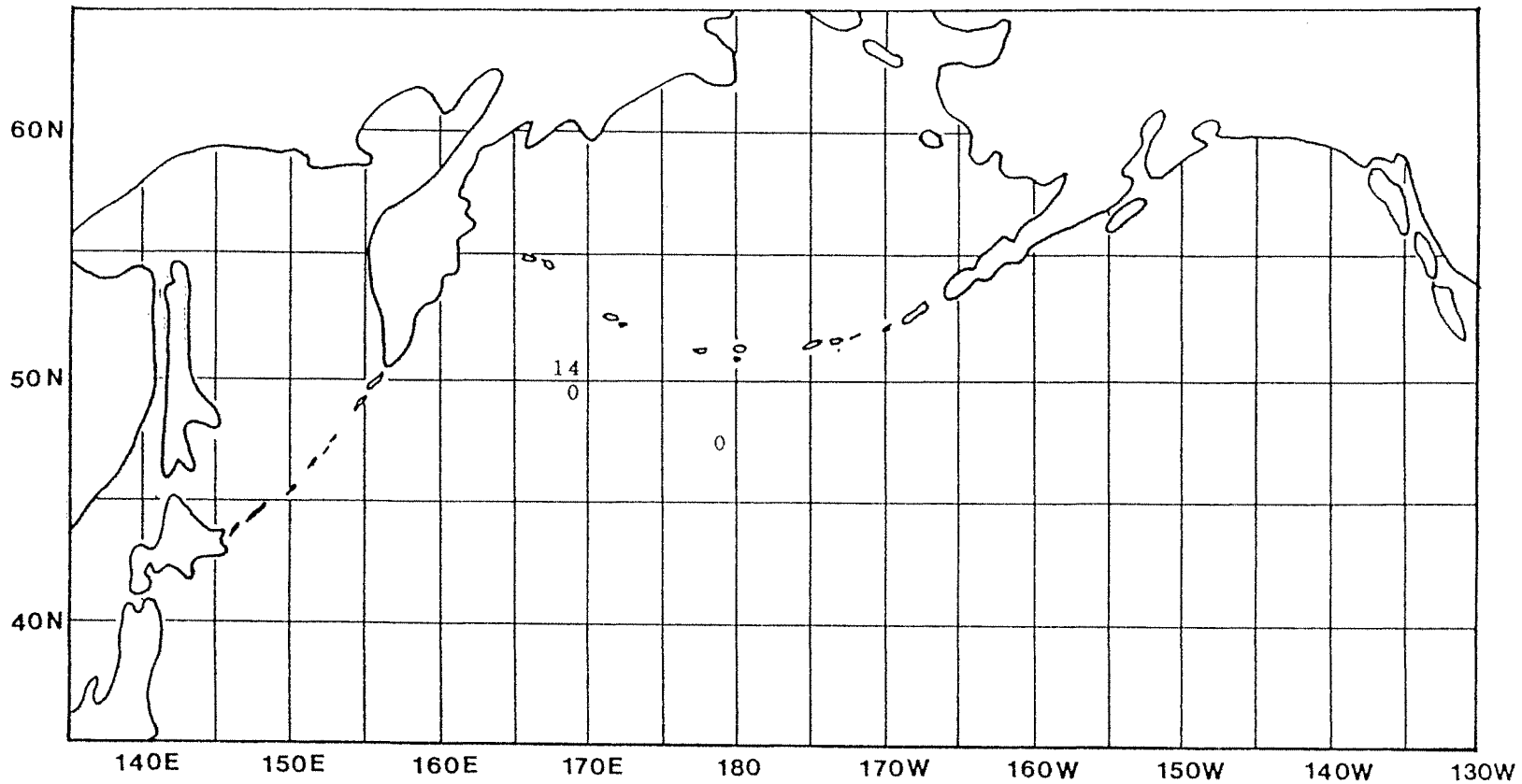

Figure 22. CPUE distribution of chinook salmon caught by the 100 tans of research gillnets in August, 1988.

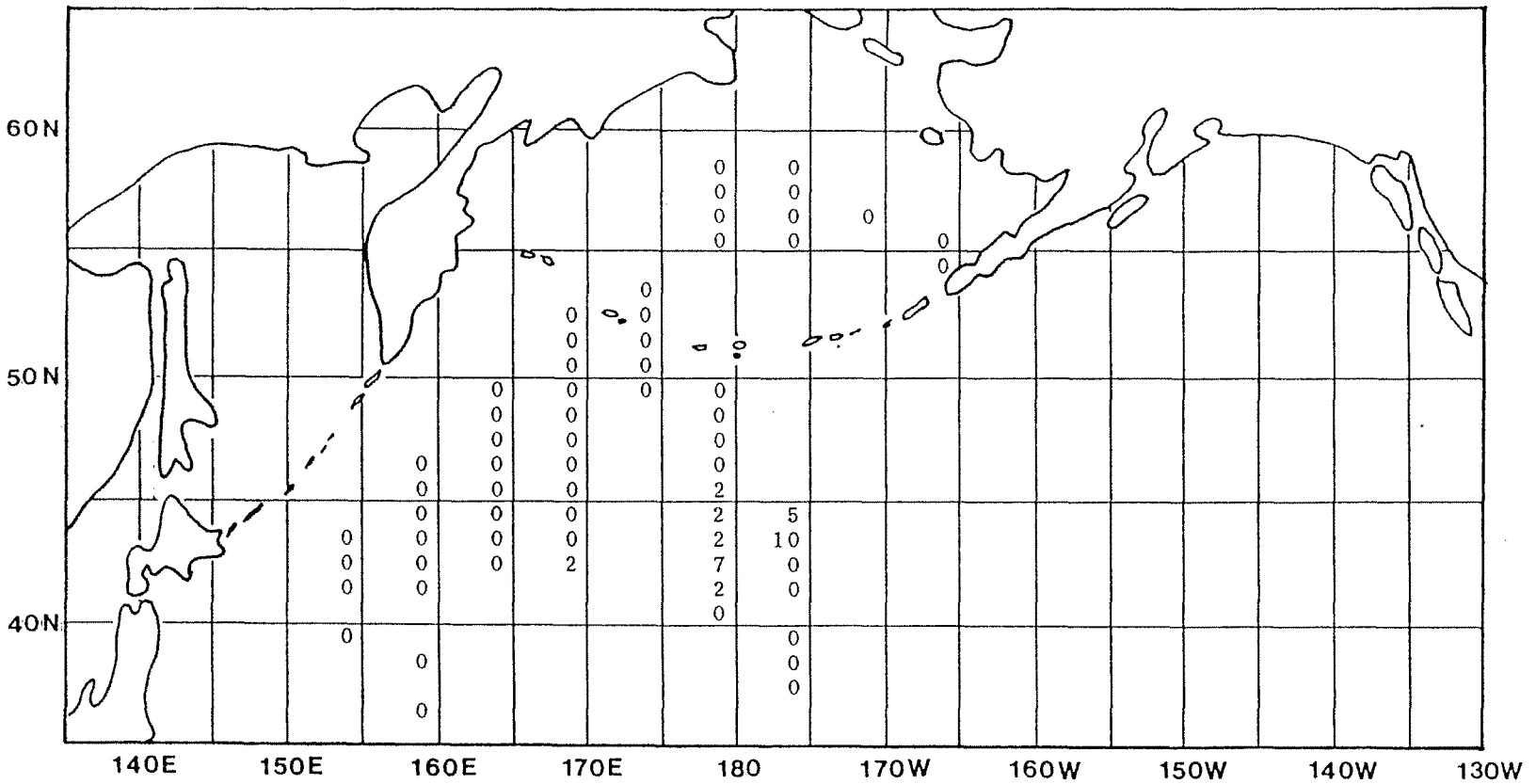

Figure 23. CPUE distribution of steelhead trout caught by the 100 tans of research gillnets in June, 1988.

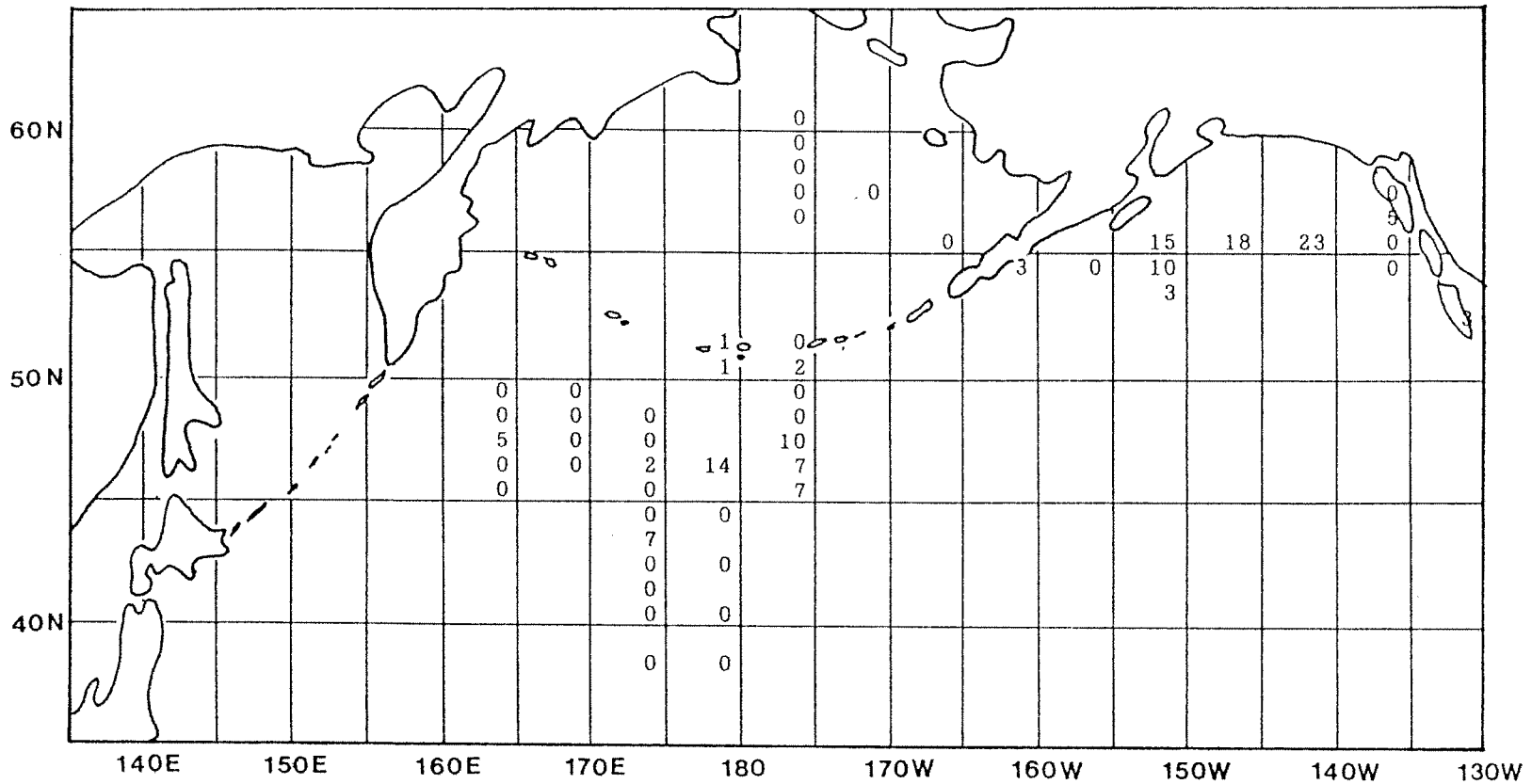

Figure 24. CPUE distribution of steelhead trout caught by the 100 tans of research gillnets in July, 1988.

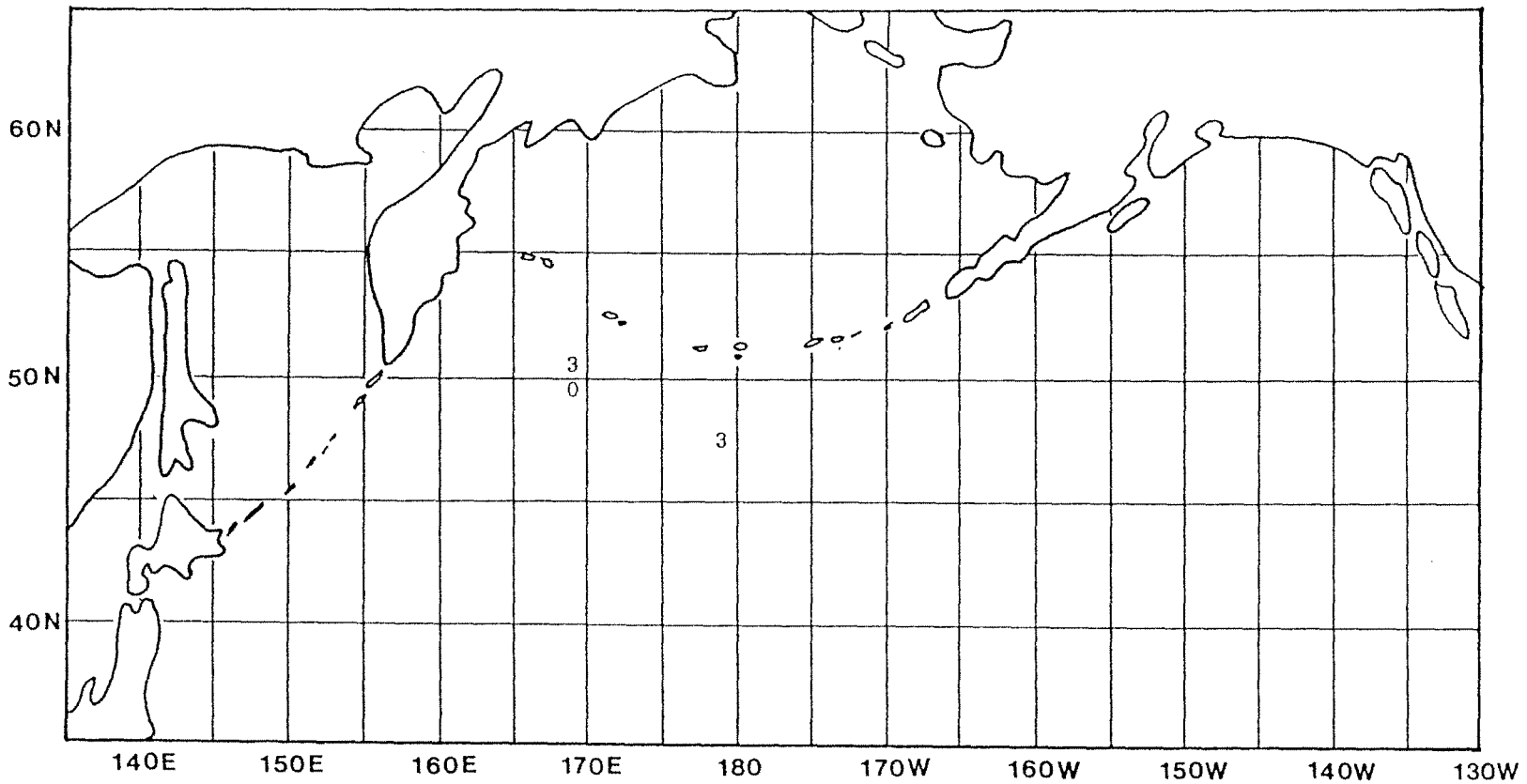

Figure 25. CPUE distribution of steelhead trout caught by the 100 tans of research gillnets in August, 1988.

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TRANSLATION

OUTLINE OF JAPANESE SALMON INVESTIGATIONS IN THE OFFSHORE WATERS OF THE NORTH PACIFIC OCEAN IN 1988

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This report summarizes salmon investigations conducted by Japan in offshore waters of the North Pacific Ocean and Bering Sea during the period 1988 June to August. The data obtained from these investigations are still being analyzed and figures in this report are preliminary. Also, in the following text, comparative figures for 1987 are shown in parentheses ( ).

I. Research on Salmon

1. Mothership

The mothership salmon gillnet fishery in 1988 was conducted by one (3) mothership accompanied by 43 catcher boats (129). The mothership fleet left Hakodata on June 1 and returned to Hakodata on July 21. Landings to the mothership by catcher boats commenced on June 8 and terminated on July 14. Fleet operations totalled 34 (90) during this period (Table 1). A total of 5,247 (16,639) salmon were measured on board the mothership in 1988; sockeye 2,749 (7,886), chum 1,037 (2,713), pink 1,020 (2,693), coho 0 (896) and chinook 441 (2,451).

2. Research vessels

The 1988 Japanese research activities on salmon in offshore waters were carried out by 11 research vessels (Table 2). The fishing gear used by the research vessels were gillnets and longlines (Fig. 2).

Research activities with gillnets commenced on June 7 and terminated on August 6. Numbers of research operations with gillnets totalled 171 (180); 94 in June, 74 in July, and 3 in August (Figs. 3 to 5).

Research activities with longlines commenced on June 4 and terminated on July 18. Numbers of research operations with longlines totalled 256 (240); 162 in June, 64 in July (Figs. 6 to 7).

A total of 7,708 (7,621) salmon was tagged and released; sockeye 274 (210), chum 4,930 (3,146), pink 1,330 (3,276), coho 1,020 (879), chinook 55 (50) and steelhead 99 (63).

In addition, head samples were collected from steelhead trout and coho salmon that did not have an adipose fin, and head samples were collected from chinook and coho salmon for research on parasites.

3. Boarding of scientists in joint researches

A Canadian scientist, D. Welch, was placed on board the Kanki maru No. 3 and U.S. scientists J. Light and S. Carver were on board the Shinriasu maru, U.S. scientists M. Muto, K. Myers, O. Mathisen and P. Poe were placed on board the Oshoro maru. On the other hand, a Japanese scientist, M. Ogura, was placed on board the Ricker, a Canadian research vessel. Also, U.S.S.R. scientists were placed on board the Hokko maru as the Japan-U.S.S.R. joint research.

II. Distribution of salmonids in the northwestern Pacific and Bering Sea

The catch per 100 tan with non-selective research gillnets with 10 different mesh sizes ("C" nets) are shown in Figs. 8 to 25 by species, by month and by area of 1°x5°. These data were compared with the long-period averages (1972 - 1987) obtained in the past (Table 3). The method followed that of Takagi (1986), but comparisons were based on month and area 1°x5°.

According to the results, abundance of sockeye, chum and chinook salmon were higher than the average values obtained in the past in every area. On the other hand, abundance of coho salmon was low in the North Pacific Ocean and that of chinook was high in the Bering Sea.

Reference

Takagi, Kenji. 1986. Outline of Japanese salmon investigations in the offshore waters of the North Pacific Ocean in 1986. 36 p. Far Seas Fisheries Research Laboratory, Fisheries Agency of Japan

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Reference Tables 1 to 3, and Figs. 1 to 25 are in English in the Japanese Document.