1988年夏季の北西太平洋における海況概要

Outline of oceanographic conditions of the Northwest Pacific during the summer of 1988

平 松 一 彦
遠洋水産研究所
Kazuhiko Hiramatsu
Far Seas Fisheries Research Laboratory

1988年 8月
August 1988
水 産 庁
Fisheries Agency of Japan

この文書を引用する場合は下記による：
平松一彦．1988. 1988年夏季の北西太平洋における海況概要．9ページ．（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

1988年夏季の北西太平洋における海況概要

平松一彦
（遠洋水産研究所）

まえがき

1988年夏季における北西太平洋の海況について，例年と同様水温資料により解析を行った。ここに用いられた水温資料は，主にさけ・ます調査船12隻，さけ・ます母船1隻によって得られたものである。本年も調査期間が短く，北西太平洋を広域的に把握できたのは，6月・7月の2ケ月のみであった。観測点数は，6月267点，7月214点であった（Figs．1,2）。その他に表面水温資料としては「海況旬報」（気象庁発行）を使用した。北西太平洋におけるさけ・ますの分布・回遊は，Western Subarctic Water，Alaskan Stream および表面水温の影響を受けることが知られていることから，これらの性状に注目して検討した。

1. Western Subarctic Water

Western Subarctic Water は，冬季の表層冷却に起因する寒冷水で，カムチャッカ半島，千島列島の東方域を中心にして北西太平洋に広く分布している。そしてこの寒冷水が，冬季から夏季にかけて，東方および南方に張り出してくるのがこの海域の特徴である。特に例年165°Eから170°E付近で寒冷水の南方張り出しが見られ，これはコマンドルスキー冷水舌と呼ばれている。ここでは例年と同様100m層の3℃以下の冷水をこの水系として取り扱い，その南方および東方への張り出しからこの冷水系への勢力について検討した。

6月（Fig．3）：3℃以下の冷水は167°Eで43°N付近にまで及んでいるが，暖水の勢力も強く，Western Subarctic Water の南方張り出しは平年並であった（Fig．5）。東方への張り出しは，3℃以下の冷水が46°Nから48°Nにおいて177°E付近に及んでおり，これもほぼ平年並であった。

7月（Fig．4）：コマンドルスキー冷水舌はその形をとどめていないが，3℃以下の冷水は全体的に南下している。一方，東方への張り出しは6月とほぼ同様であったものと考えられる。

2. Alaskan Stream

Alaskan Stream は，アラスカ湾域よりアリューシャン列島南方沿いを西行する相対的高温水である。この流れの勢力を把握するひとつの方法として，アリューシャン列島南方沿いにみられる100m層の4℃以上の水系について検討した。

6月：昨年同様アリューシャン列島南方での観測が少ないため，この時期のAlaskan Stream の勢力については明らかではない。しかし173°E付近まで3℃以下の冷水が見られることから，勢

力はあまり強くなかったものと考えられる。

7月：4℃以上の暖水は176°E付近まで見られ，Alaskan Stream の勢力はほぼ平年並であったと考えられる。

Fig．6に6月におけるAlaskan Streamの張り出しの年変動を示す。本年も昨年同様6月は明らかではないので，参考として7月の値を示してある。

3. 表 面 水 温

Fig．7に本年6月，7月の表面水温平年偏差図を示す。平均値とは過去30年間（1956—1985）の各月毎の平均値である。

6月の北西太平洋の表面水温は平年より低温で，特に157°Eから175°Eにかけての40°N付近では平年より2℃以上低かった。7月にはいるとやや昇温がみられたが，やはり上記の海域を中心に低温ぎみであった。

以上に述べた1988年夏季の北西太平洋の海況概要は次のように要約される。

1. Western Subarctic Water の南方および東方への張り出しは，6月，7月ともほぼ平年並であった。
2. Alaskan Streamの西方張り出しは，ほぼ平年並であった。
3. 表面水温は6月，7月とも平年より低温であった。

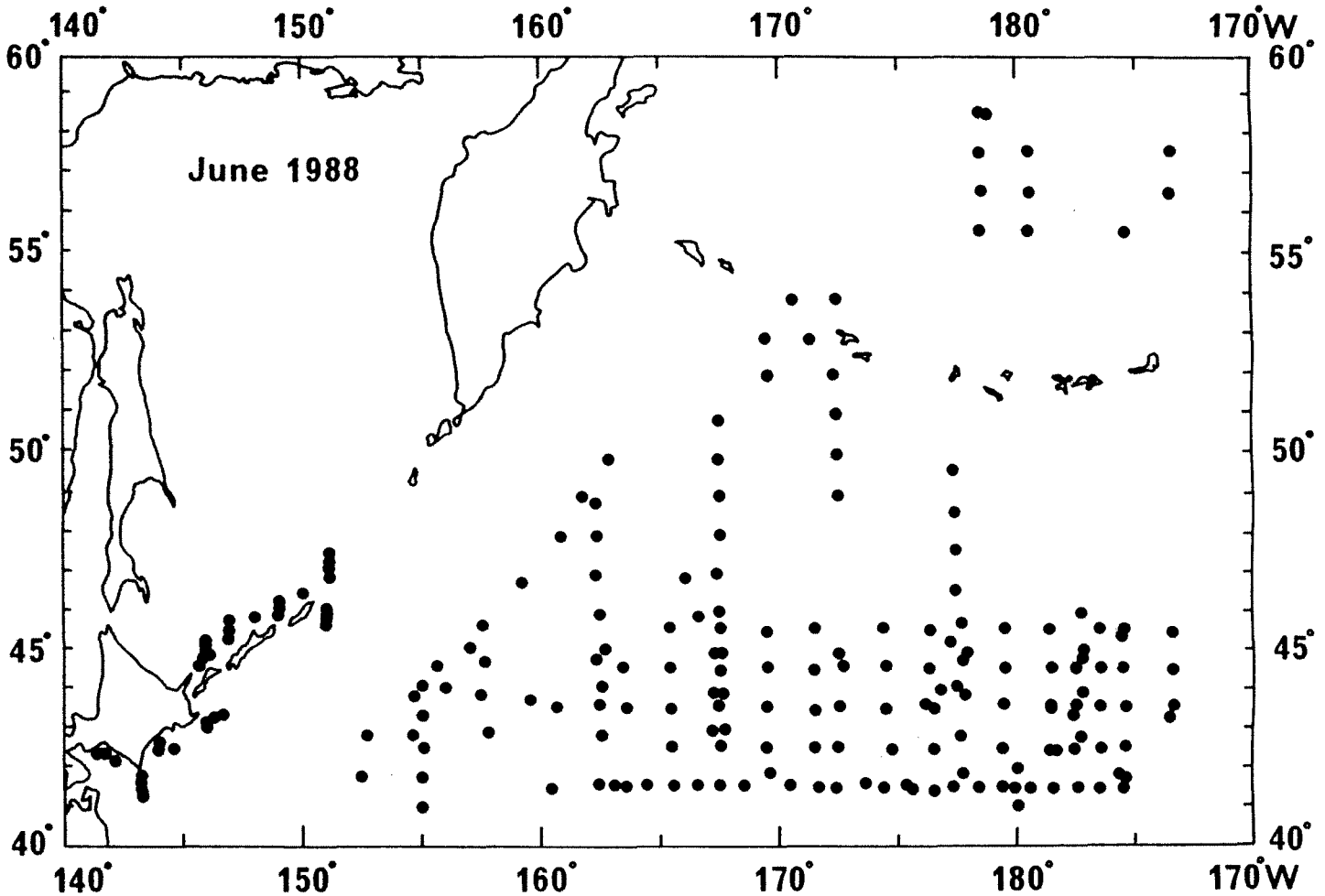

Fig.1 Locations of oceanographic stations (June,1988).

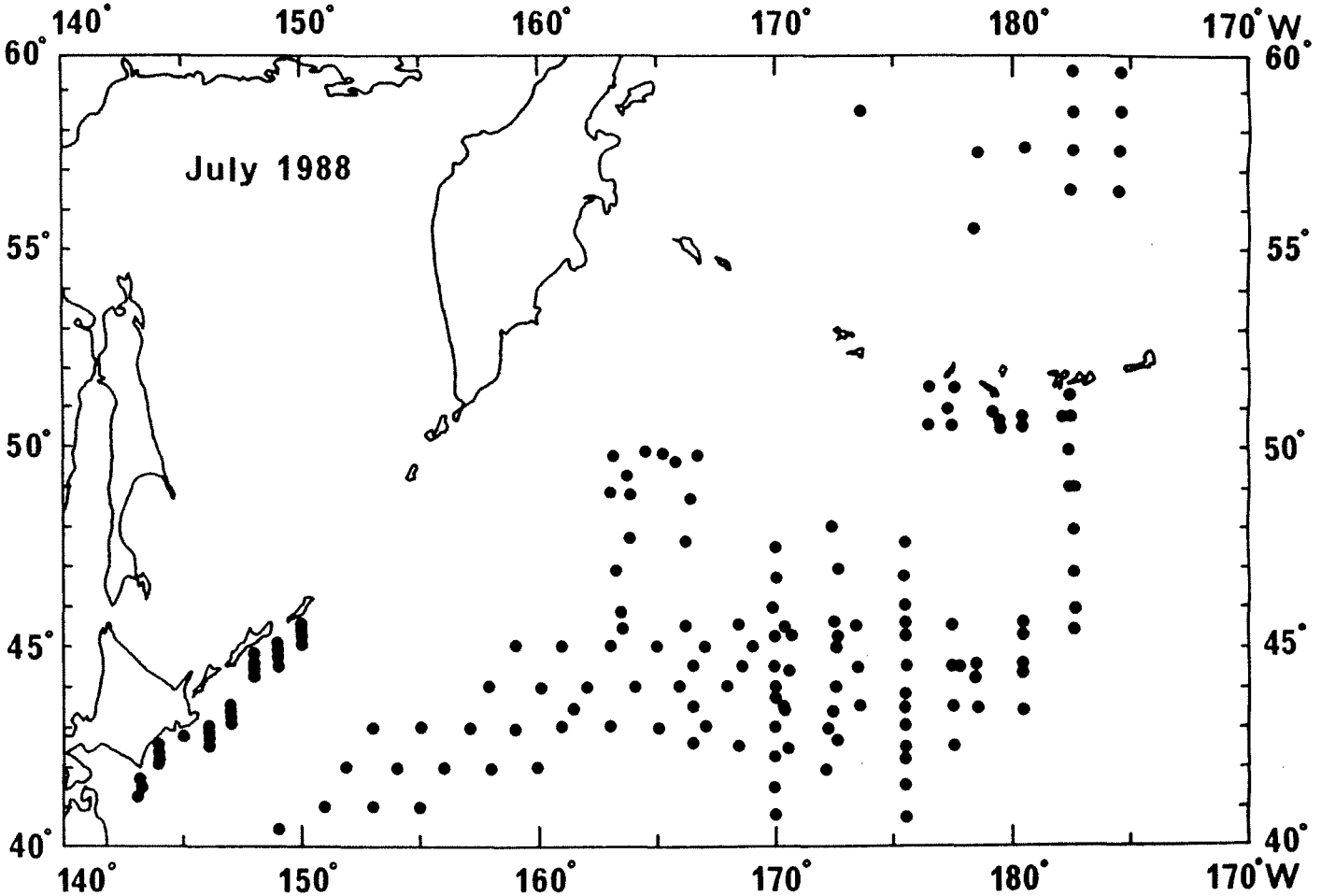

Fig.2 Locations of oceanographic stations (July, 1988)

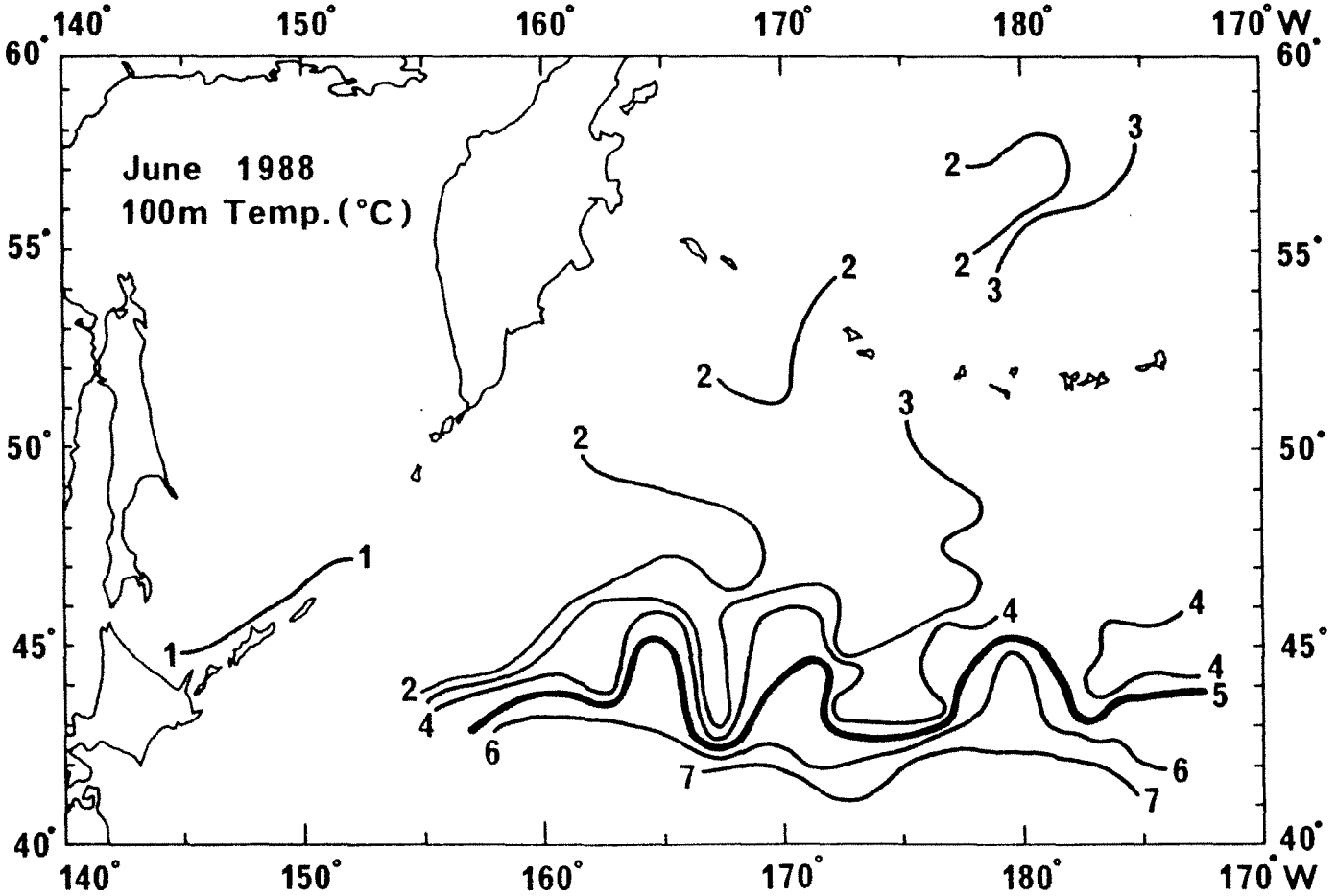

Fig.3 Temperature distribution at 100m layer in June,1988

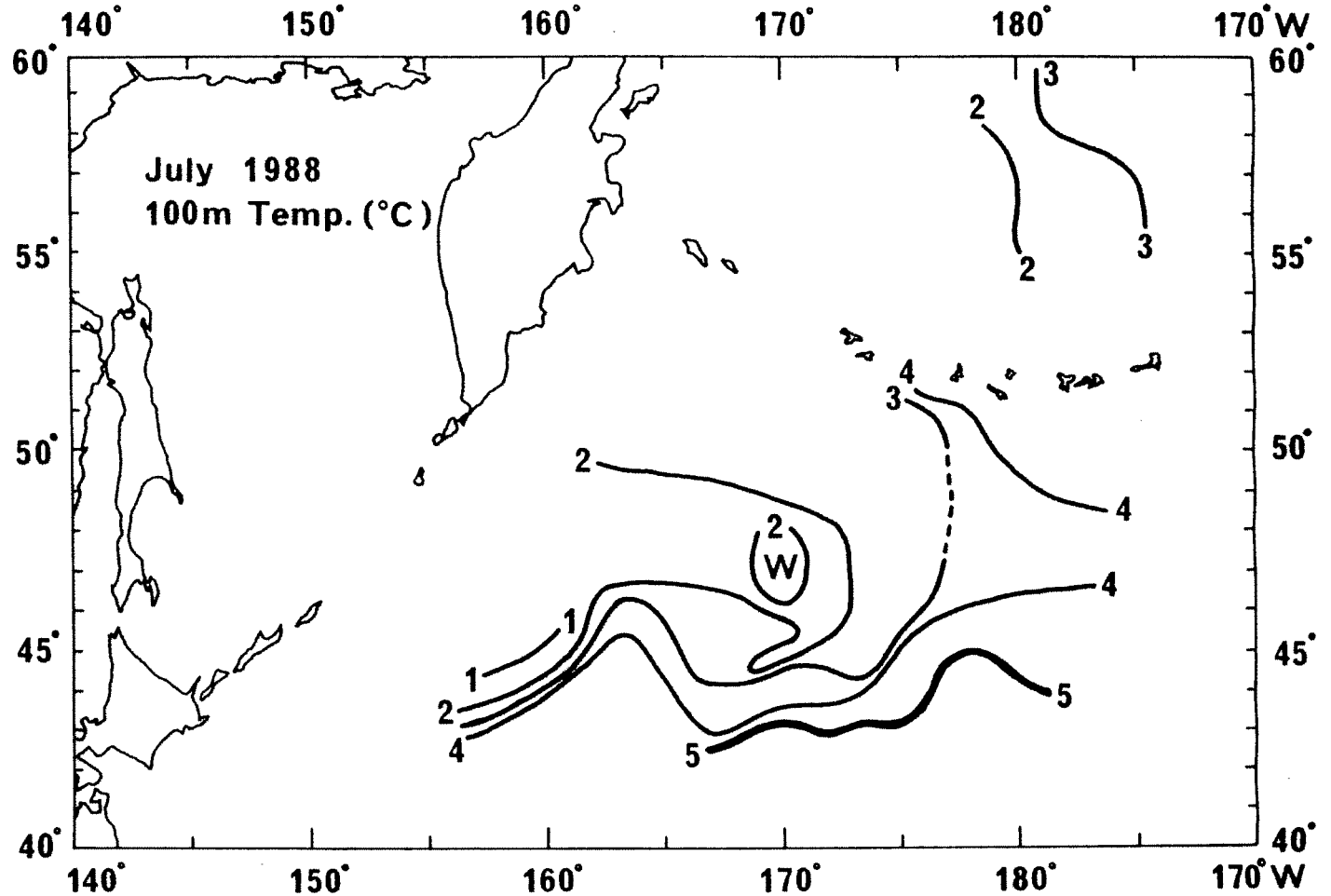

Fig.4 Temperature distribution at 100m layer in July,1988

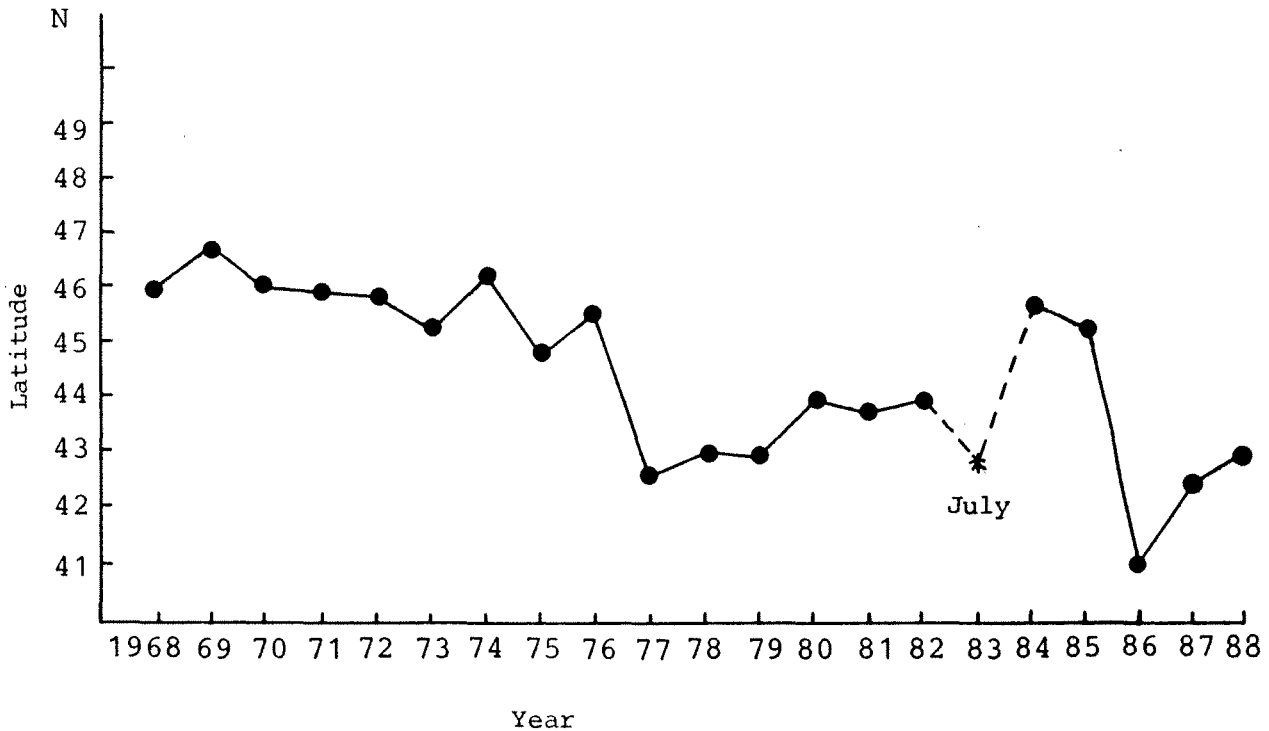

Fig. 5 Annual fluctation of southward extension of Komandrskie tongueshaped cold water in June indicated 3°C isothermal at 100m depth.

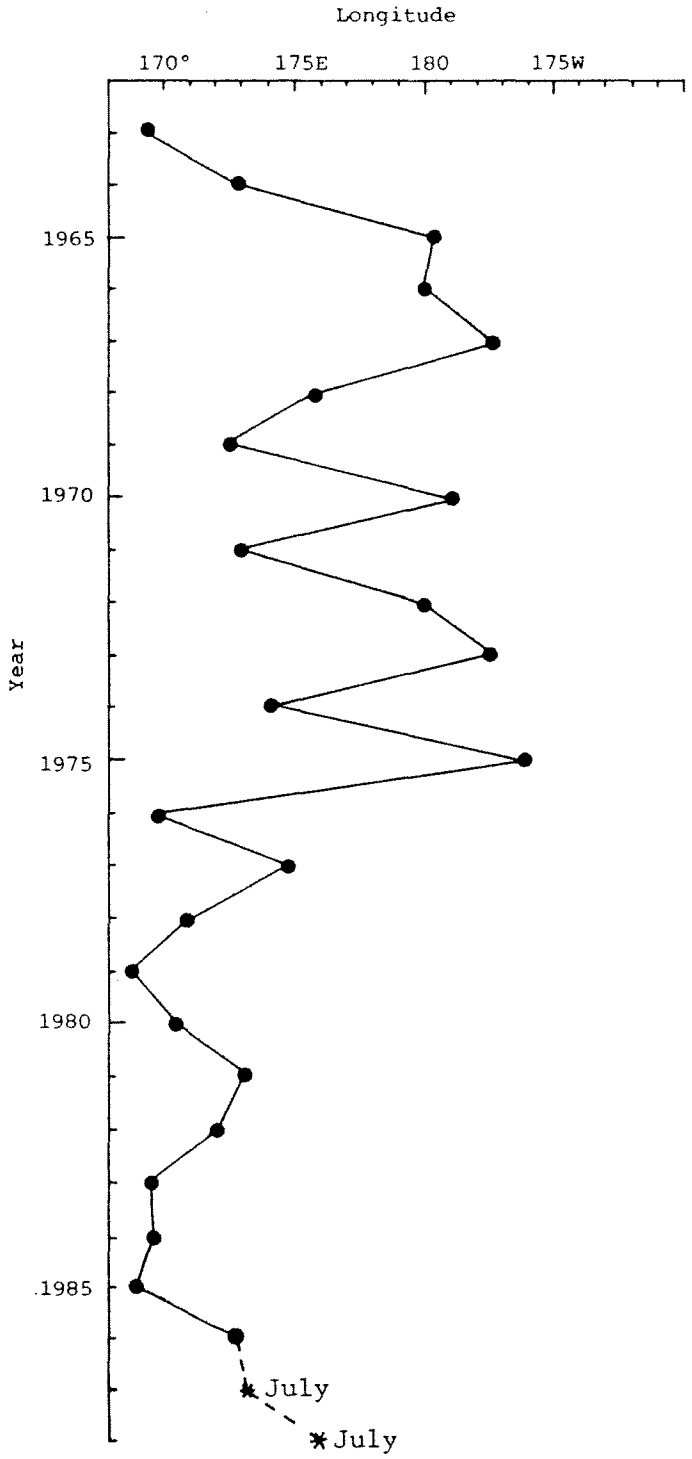

Fig.6 Annual fluctuation of the extension of Alaskan stream in June indicated by 4°C isotherm at 100m depth.

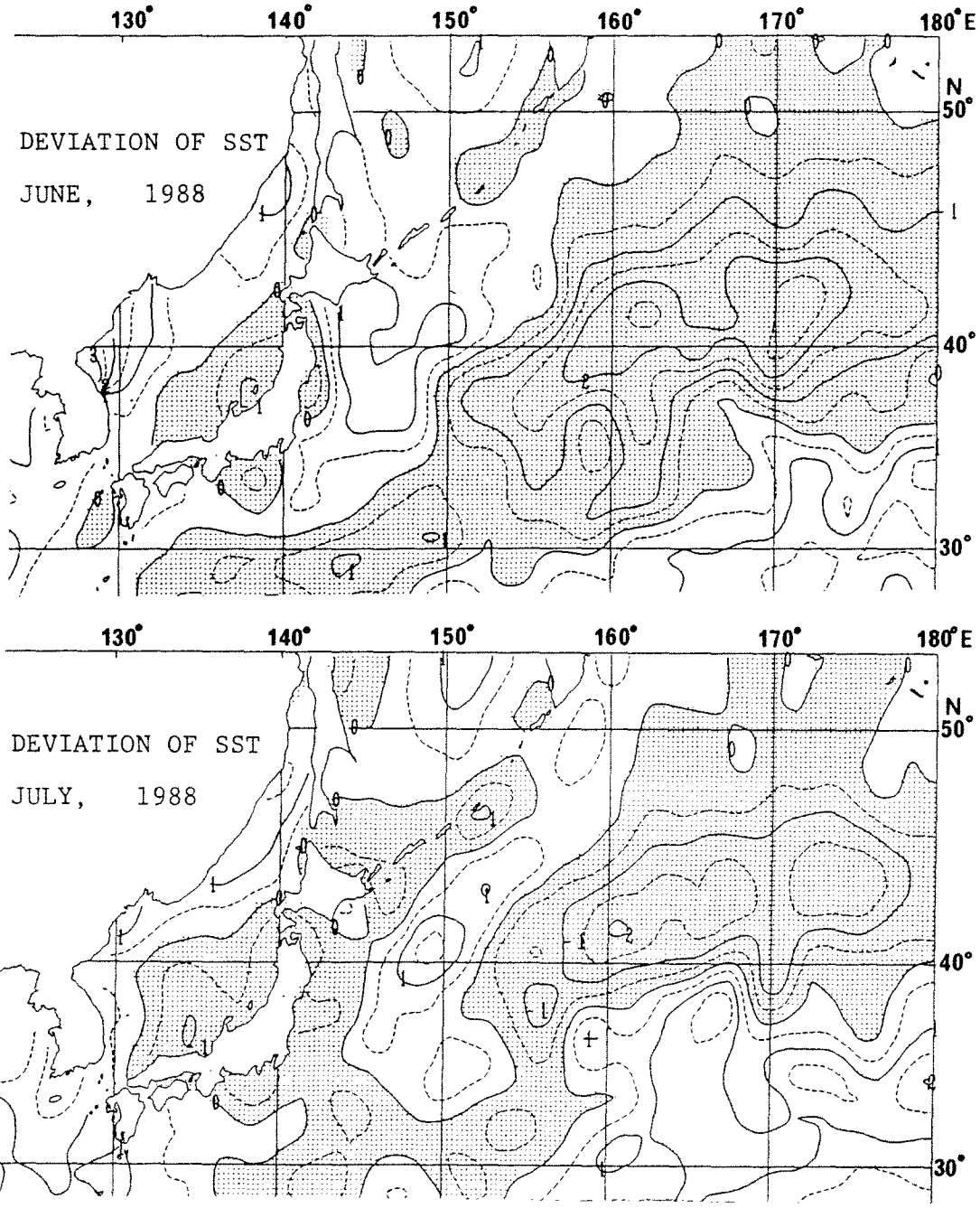

Fig.7 Deviation of the sea-surface temperature in June, July,1988 from the monthly mean for 30 years 1956-1985.(From The Ten-Day Marine Report,No.1502,1505)

Not to be cited by INPFC
Document number

INPFC
Doc. 3311

TRANSLATION

OUTLINE OF OCEANOGRAPHIC CONDITIONS OF THE NORTHWEST PACIFIC DURING THE SUMMER OF 1988

Kazuhiko Hiramatsu

Far Seas Fisheries Research Laboratory

Fisheries Agency of Japan

1988 August

THIS PAPER MAY BE CITED IN THE FOLLOWING MANNER:
Hiramatsu, Kazuhiko. 1988. Outline of oceanographic conditions of the Northwest Pacific during the summer of 1988. (Document submitted to the Annual Meeting of the International North Pacific Fisheries Commission, Tokyo, Japan, 1988 October.) 4 p. Fisheries Agency of Japan, Far Seas Fisheries Research Laboratory, 5-7-1, Orido, Shimizu, Japan 424

1. Introduction

Oceanographic conditions in the northwestern Pacific during the summer of 1988 were examined using data on water temperature as in previous years. Data used here were obtained mainly from twelve salmon research vessels and one mothership. Since the period of survey in 1988 was short, synoptic information similar to previous years in the northwestern Pacific was obtained only for June and July. Observations were made at 267 stations in June and 214 stations in July (Figs. 1 and 2). For additional surface water temperatures "The Ten-day Marine Report" of the Meteorological Agency of Japan was used. Much previous work has pointed out that distribution and migration of salmon in the northwestern Pacific are influenced by Western Subarctic Water, the Alaskan Stream, and surface water temperature. Therefore, we assessed the distribution and features of these water masses.

1. Western Subarctic Water

Western Subarctic Water is a cold water mass produced by surface cooling in winter that is widely distributed in the northwestern Pacific, centering off the eastern areas of the Kamchatka Peninsula and the Kuril Islands. A feature of this area is the southward and eastward extensions of this cold water from winter to summer. In particular, the southern extension of cold water observed almost every year between 165° and 170°E is called "the Komandorskie Cold Tongue." In this report, identifying the cold water mass with temperatures 3°C or less at 100 m depth as Western Subarctic Water, we examined the strength of Western Subarctic Water based on its southward and eastward extensions as in previous years.

June (Fig. 3): Cold water with a temperature of 3°C or less reached about 43°N at 167°E, and the influence by the warm water was also strong, and the southward extension of the Western Subarctic Water was almost as strong as in the previous years (Fig. 5). In the eastward

extension, cold water with a temperature of 3°C or less reached about 177°E between 46°N and 48°N and this was almost as strong as in a normal year.

July (Fig. 4): The Komandorskie Cold Tongue did not maintain its shape, but cold water with a temperature of 3°C or less generally moved toward the south. On the other hand, it was considered that the eastward extension was almost the same as in June.

2. Alaskan Stream

The Alaskan Stream is recognized as a relatively high temperature current which flows toward the west along the south side of the Aleutian Islands. We examined the location of water with relatively high temperatures of 4°C or more south of the Aleutian Islands at 100 m depth in order to determine the strength of the Stream.

June: The strength of the Alaskan Stream could not be accurately determined for this month because of lack of observations in waters south of the Aleutian Islands as in the previous year. However, the Alaskan Stream was not considered to be very strong since cold water with temperatures of 3°C or less were observed towards 173°E.

July: Warm water with temperatures of 4°C or more was observed towards 176°E, and the strength of the Alaskan Stream was considered the same as in a normal year.

Figure 6 shows the annual fluctuations of the extension of the Alaskan Stream in June. For 1988 however, since no conclusive data was available for June, the extension of the Alaskan Stream for July is plotted for reference as in 1987.

3. Surface water temperature

Figure 7 shows deviation of the sea-surface temperature in June and July. The mean value is the monthly mean for the past 30 years (from 1956 to 1985).

In June, deviations suggest that surface water temperature in the northwest Pacific was lower than in normal years, and in particular, was lower than in normal years by 2°C or more around 40°N between 157°E and 175°E. In July, the temperature rose somewhat, and there was still a trend of low temperatures, centering in the above area.

The oceanographic conditions in the northwest Pacific during the summer of 1988 can be summarized as follows:

1. The southward and eastward extensions of Western Subarctic Water were the same as in a normal year in both June and July.

2. The westward extension of the Alaskan Stream was almost the same as in a normal year.

3. Surface water temperatures were colder than in normal years in both June and July.

Figs. 1 to 7 are in English in the Japanese document.