OUTLINE OF OCEANOGRAPHIC CONDITIONS
IN THE NORTHWEST PACIFIC DURING THE SUMMER OF 1991

by

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Submitted to the
INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION

by the

JAPANESE NATIONAL SECTION

September 1991

THIS PAPER MAY BE CITED IN THE FOLLOWING MANNER:
ABSTRACT
Oceanographic conditions in the northwestern Pacific in June and July, 1991, were examined using data obtained from salmon research vessels. Judging from water temperatures at depths of 100m, the strength of the Western Subarctic Water which is cold water was weak, and in particular, the eastward extension was considerably weaker than in normal years in June and July. The surface water temperature was normal in June, and in July was slightly lower than in normal years.

INTRODUCTION
Oceanographic conditions in the northwestern Pacific during the summer of 1991 were examined using data on water temperature, as in previous years. Data used here were obtained from eleven salmon research vessels. Observation used in the analysis were made at 165 stations in June, and 90 stations in July (Figs. 1 and 2). For additional data on surface water temperatures "the Ten-Day Marine Report" of the Meteorological Agency of Japan was used. Extension of the Western Subarctic Water and surface water temperature which characterized the oceanographic conditions in the northwestern Pacific were examined.

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. The southward extension of cold water observed almost every year between 165° and 170°E is called "The Komandorskie Cold Tongue". In this report, the cold water mass with temperature of 3°C of less at 100m depth is identified 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 to only about 44°20'N at 167°E, and thus
the southward extension of the Western Subarctic Water was slightly weaker than in normal years (Fig. 5). The eastward extension of cold water of 3°C or less was ambiguous, because of few observation stations, and reached about 170°-172°E at about 47°N. This was a considerably weaker than in normal years.

July (Fig. 4): Although a detailed analysis was difficult, because the number of oceanographic stations decreased further from those in the previous year, it is considered that the strength of cold water was as weak as in June. In particular, cold water with a temperature of 2°C extended to around 175°E in normal years, but in 1991, the extension of water of 3°C or less was ambiguous, even around 170°E and the eastward extension of the cold water was fairly weak.

Oceano图形 conditions in the northeastern Pacific

2. SURFACE WATER TEMPERATURE

Surface water temperatures in June and July from the monthly mean values for the 30 years (from 1961 to 1990). Surface water temperature of the northeastern Pacific in June was almost the same as in a normal year. In July, in the areas of 42° to 50°N and 158° to 168°E the mean water temperature was 1°C or more lower than that in a normal year.

REFERENCES

Fig. 1 Locations of oceanographic stations (June, 1991)
Fig. 2 Locations of oceanographic stations (July, 1991)
Fig. 3 Temperature distribution at 100m layer in June, 1991
Fig. 4 Temperature distribution at 100m layer in July, 1991
Fig. 5 Annual fluctuation of southward extension of Komandrskie tongue-shaped cold water in June indicated 3°C isotherm at 100m depth.
Fig. 6 Deviation of the sea-surface temperature in June, July, 1991 from the monthly mean for 30 years 1961-1990 (From The Ten-Day Marine Report, No. 1610, 1613)