CANADIAN AERIAL OBSERVATIONS OF THE NORTH PACIFIC DRIFTNET FLEET 1990

by

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THIS PAPER MAY BE CITED IN THE FOLLOWING MANNER:

In June 1990 offshore surveillance flights by the Canadian Maritime Forces Pacific were conducted in the vicinity of the northern boundary of the regulated Squid Driftnet Fishery Zone. None of the driftnet vessels observed were fishing north of the boundary for June (40°N). Sea surface temperature in that area was 13.0°C. Surveillance flights were also coordinated in August along the northern boundary for that month (46°N). Again, no driftnet vessels were observed fishing outside the regulated area.
INTRODUCTION

The Asian squid driftnet fishery has been operating in the central North Pacific Ocean since 1977. Because of the unselective nature of driftnets many non-target species are caught during the fishery. This fishery in certain years could intercept stocks of Asian and North American salmon (LeBrasseur et al. 1987). The rate of interception will depend on the southern extent of salmon distribution and on the abundance of driftnet vessels along the northern boundary for this fishery.

The number of Asian driftnet vessels operating north of the regulated squid fishery zone is of concern to Canada. These vessels could have a major impact on the abundance of North American salmon. Due to the large area over which these vessels may operate, aerial surveillance is the only effective way of monitoring their distribution. Unclassified information collected by the Canadian Maritime Forces Pacific regarding the occurrence and behaviour of driftnet vessels in the North Pacific was made available to Fisheries and Oceans Canada in 1989 (McKinnell 1989). The present report is based on information provided to DFO in 1990.

METHODS

During offshore surveillance flights in June 1990 the Canadian Maritime Forces Pacific noted the location of any driftnet vessels encountered. In addition, water temperature data were collected via expendable bathythermographs near the northern boundary of the Squid Driftnet Fishery Zone in June (40°N).

In August 1990 surveillance flights were made in the vicinity of the northern boundary for that month (46°N). No temperature data were collected in August.

RESULTS AND DISCUSSION

In the areas covered by the June surveillance flights (Fig. 1) 42 driftnet vessels were observed. None of these vessels was outside the boundaries of the Squid Driftnet Fishery Zone for June. Most of the fishing vessels were within one degree of the northern boundary (40°N) between 155°W and 165°W (Fig. 2). No vessels were observed between 155°W and 145°W even though this area was open to squid fishing.

The sea surface temperature at the northern boundary (40°N) during the overflight was 13.0°C. LeBrasseur et al. (1987; 1988) caught Pacific salmon (Oncorhynchus spp) as far south as 40°N only when the sea surface temperature was less than 12°C.
McKinnell et al. (1990) caught salmon only as far south as 42°53'N in June 1990 in the eastern north Pacific Ocean. It is unlikely that the driftnet vessels observed during the June 1990 overflights would have caught significant numbers of salmon.

During the August surveillance flights 25 driftnet vessels were observed in the areas covered (Fig. 2). None of these vessels was fishing outside the Regulated Squid Driftnet Fishery Zone for August.

REFERENCES


Fig. 1: Areas of North Eastern Pacific Ocean covered during surveillance flights by Canadian Maritime Forces Pacific in June, 1990. The solid lines show the boundaries of surveillance areas. The dashed lines indicate the northern and eastern boundaries of the Squid Fishery Zone for June. Driftnet vessels were observed only in the shaded zone.
Fig. 2: Areas of the North Eastern Pacific Ocean covered during surveillance flights by the Canadian Maritime Forces Pacific in August, 1990. The solid lines show the boundaries of surveillance areas. The dashed lines indicate the northern and eastern boundaries of the Squid Fishery Zone for August. Driftnet vessels were observed only in the shaded zone.