INTRODUCTION

In 1973 and 1974 Canada conducted several mackerel tagging experiments in Subarea 4. The preliminary results of the two experiments conducted in 1973 have been previously reported (Beckett et al., 1974) and this document is presented to update the recoveries from the 1973 experiments as well as to report the results of the 1974 experiments.

RESULTS AND DISCUSSION

The tagging locations and recoveries by year are presented in Fig. 1-3. The locations of the tagging experiments and the times were selected in order to obtain a comprehensive view of the movement of mackerel found in Subarea 4. The Aspey Bay experiment was conducted as mackerel were migrating into the Gulf of St. Lawrence in order to get information on movements within the Gulf and into Subarea 3. The Gulf of St. Lawrence experiments (Cape Tryon - 1973, and Tracadie - 1974) as well as the 1973 and 1974 St. Margarets Bay experiments were conducted to obtain data on overwintering distribution.

The results from all the experiments appear to be complementary. Recoveries from all five experiments have been made in Subarea 5 and from all but Tracadie in Statistical Area 6 (Table 1). The recoveries made in November-December 1973 from the 1973 St. Margarets Bay experiment indicate a progressive southwestward movement (Fig. 1) with a January-March, 1974, overwintering period in the northwestern part of Statistical Area 6 (Fig. 2). This appears to have been followed by both an inshore and offshore movement in April-July back into Subarea 4. The concentration of 1975 recoveries in Subarea 5 (Fig. 3) corresponds with other evidence of a northeasterly distributional shift of overwintering concentrations (Anderson and Almeida, Res.Doc. 76/13). The recovery of two tags in 1974 in Statistical Area 6 from the Cape Tryon experiment plus the recovery of tags from all the Gulf experiments in 1975 in Subarea 5 substantiate the hypothesis that some mackerel in the Gulf of St. Lawrence during summer overwinter in the southern area.

The recoveries in Subarea 4 in 1974 and 1975 indicate substantial dispersion through this Subarea during the summer as well as some movement into Subarea 3. The movement of mackerel found in Subarea 3 during summer into Subarea 5, and Statistical Area 6 during winter has been previously reported (Moore et al. 1975) and these recoveries complement those earlier tagging experiments.

The distribution of tag recoveries in both time and place from the Subarea 4 tagging experiments leave little doubt that the fisheries in Subareas 3 and 4 and those in Subarea 5 and Statistical Area 6 are to a considerable degree exploiting the same contingent of the mackerel stock at different times of the year. Until substantially more data are available on the degree of intermixing of northern and southern contingents, it would be logical to continue managing mackerel in Subareas 3-6 as one stock.
REFERENCES


Table 1. Tagging recoveries reported to March 11, 1976, by Subarea

<table>
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<tr>
<th>Tagging location</th>
<th>Nos. Tagged</th>
<th>Subarea 3</th>
<th>Subarea 4</th>
<th>Subarea 5</th>
<th>Subarea 6</th>
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<td>Cape Tryon 1973</td>
<td>196</td>
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<td>Aspey Bay 1974</td>
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<td>7</td>
<td>2</td>
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<td>10</td>
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<tr>
<td>Tracadie 1974</td>
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<td>1</td>
<td>4</td>
<td>3</td>
<td>-</td>
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</tr>
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<td>-</td>
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<td>8</td>
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Fig. 1. Location of tag recoveries made during 1973 from mackerel tagging experiments.
Fig. 2. Location of tag recoveries made during 1974 from mackerel tagging experiments.
Tagging Experiments

1. Cape Tryon, PEI
   Oct. 3, 1973
   196 tagged - ▲

2. St. Margarets Bay
   Oct. 23-26, 1973
   1765 tagged - ●

3. Aspy Bay
   July 4-9, 1974
   3421 tagged - ○

4. Tracadie, PEI
   Sept. 24-Oct. 5, 1974
   2426 tagged - ▼

5. St. Margarets Bay
   Oct. 16-26, 1974
   4314 tagged - ■

Fig. 3. Location of tag recoveries made during 1975 from mackerel tagging experiments.