

## APPENDIX IV.

## FISHERY INVESTIGATIONS IN PELORUS SOUNDS, 1934.—FINAL REPORT.

UNDER your instructions, I made three trips to Pelorus Sound to investigate the effect on the fishery of certain portions being opened to Danish-seiners for a limited portion of the year.

An interim report has been supplied at the end of each trip, and it is now only necessary to set out the results as a whole, so that each trip may be compared with the others, and to have the evidence gathered presented in such form as to facilitate the drawing of such conclusions as are possible from the limited data at our disposal.

The trips undertaken were as follows :—

Trip.	Date and Duration.	Interim Report dated
1	12th April, 1934, to 24th April, 1934 .. ..	2nd May, 1934.
2	15th June, 1934, to 26th June, 1934 .. ..	29th June, 1934.
3	18th July, 1934, to 31st July, 1934 .. ..	7th August, 1934.

## AREA OPENED.

The area under discussion was opened to Danish-seiners from the 1st April, 1934, to the 31st July, 1934, and consisted of those waters inside the present line from Cape Jackson to Harding Point, and outside a line drawn from Tawera Point to Opani-Aputa Point, which are the heads of the Popoure Reach.

## FISHING METHODS AND GROUNDS.

The methods of fishing used in Pelorus Sound are—(1) Set-netting ; (2) hand-seining ; (3) line-fishing, with “ windy buoys ” ; (4) hand-lining ; and, during the period under review and in the specified waters (5) Danish-seining. The set-netting is confined to the upper reaches of the Sounds, such as Nydia and Maori Bays, Kenepuru Sound, and up round Black Point. Line-fishing is carried on outside, and off the points and reefs inside, up as far as Tawera Point.

The Danish-seining was tried out in most of the newly opened area, and the surprising thing was the limited number of clear hauls which were found.

Each type of fishing will be considered separately. As the Danish-seining was the main portion of the investigations it will be dealt with first.

## DANISH-SEINING.

*Gear.*—The gear used was found to be similar to that now used in the Auckland District. Each net examined had the regulation mesh in the cod end.

*Catches.*—The catch of the hauls witnessed during the three trips is to be seen in Table I.

In this table it will be seen that during the first period which coincided with the first appearance of the seine-boats in the Sounds the catch per clear haul is high, amounting to 3.25 cases of marketable flat fish per haul. On the second trip a decided drop to 0.85 cases per haul was noted, and the third trip showed a further decline to 0.70 cases per haul.

This drop in the catch per haul requires some explanation, though it is the type of movement one would expect. In the first period the vessels were catching the accumulated stocks of the fish which had made up during the closed period. By the time of the second trip these accumulations had been caught where possible, and the grounds were now down to what may be termed their working-level. The slight difference in the catch per haul of the second and third trips is not of major importance, and may be attributed to working different hauls, seasonal migrations of the fish, or slightly less effective fishing-gear or personnel.

From these figures it would appear that with the fishing-gear in use, and if the intensity of fishing remains constant, the normal catch of marketable flat fish per haul would during a few months season be of the order of 0.80 of a case.

When one considers that on the “ Dab Patch,” one of the best flat-fish grounds near Auckland, the average catch per haul using much the same class of gear is only about one case per haul, this result is not so unsatisfactory as it may appear.

In addition to this catch of marketable flat-fish there are usually a few other fish such as snapper, red cod, and gurnard, which are of some economic value.

It must be stressed that although 0.80 case of marketable flat fish is the result of an average haul, very many tiny flat fish escape from the net while it is being hauled, although those under or just over the legal limit which are brought on board are sorted out and dumped immediately with practically no mortality. In fact we found that these small fish could be sorted out, measured, and then returned to the water with practically no loss at all.

*Dab Measurements.*—As the dab was the predominating flat fish I concentrated on the measurement of this species only. The samples measured consisted of the whole of the catch of the hauls enumerated in the interim reports, or of a representative portion of the catch where the total was too large to handle in the time at my disposal.