INFORMATION ON THE NUMBERS OF UNDERSIZED HALIBUT AND AMOUNTS OF OTHER SPECIES CAUGHT AND DISCARDED BY CANADIAN AND UNITED STATES SETLINE VESSELS IN THE GULF OF ALASKA

Submitted to THE GULF OF ALASKA GROUNDFISH COMMITTEE by THE CANADIAN SECTION of THE INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION September 1963
In INPFC Doc. 601, Report of the Gulf of Alaska Groundfish Committee (March 20, 1963), there was a request for available information on (a) the numbers of undersized halibut, and (b) the amount of other species caught and discarded by Canadian and United States setline vessels in the Gulf of Alaska.

The following statements have been prepared by the staff of the International Pacific Halibut Commission.

1. **Numbers of undersized halibut discarded**

Many Canadian and United States setline vessels fishing in the Gulf of Alaska are interviewed from time to time for verbal estimates of the number of "undersized" halibut caught and discarded. A recent canvass of 48 vessels that reported some discards of small fish indicated that an average of about 12 undersized halibut were caught and discarded per fishing day. These discards included individuals under 66 centimeters as well as some small chickens probably between 66 and 70 centimeters.

The Commission for many years has conducted tagging operations in the Gulf of Alaska on chartered halibut vessels. On six tagging trips in 1957 between Cape Cleare and Shelikof Strait the numbers of halibut under 66 centimeters caught per fishing day ranged from 2 to 19 on the individual trips, the average being 8 individuals per day's fishing. This represented about 5 percent of the average number of halibut caught per day during the six trips in question.

In order to compare the foregoing data from the tagging trips with those secured from the commercial vessels which had included some individuals above 66 centimeters in their reported discards, one-half of the individuals between 66 and 70 centimeters caught on the tagging trips were added to those below 66 centimeters. The combined figures provided an average of 12 individuals discarded per day of fishing for the above six tagging trips in 1957.

While identical methods of fishing are used as on commercial setline vessels, the latter tend to avoid portions of the grounds or depths frequented by the smaller-sized fish probably somewhat more than with the Commission's tagging operations. Accordingly, the composition of the catches on the tagging vessels may not be strictly comparable with what prevails in the commercial fishery.

During the past few years the Commission has placed observers on a number of United States and Canadian commercial setline vessels to sample the catches at sea. During the course of such observations the precise numbers of less than legal-sized halibut have been enumerated. These observations indicated that 4.1 percent of the catch in numbers were less than the legal length of 66 centimeters. The percentage on the different trips showed a relative narrow range of variability. Though the size of the sample in the foregoing data was also small compared to the total commercial catch of halibut in the Gulf of Alaska, they do provide precise data from United States and Canadian commercial setline fisheries on discards of "undersized" halibut.
While each of the foregoing estimated counts or percentages possess a number of limitations, they do provide values of very similar magnitudes. However, on account of the restricted number of observations and restricted area of origin of the samples upon which the estimates were based, caution is indicated in using the estimates to represent such a large total production over such a wide area as the Gulf of Alaska where the size composition of individual catches and by regions within the area are known to vary widely.

2. The amounts of other species discarded

It is noted that most of the other species that are caught by setline gear incidentally with halibut in the Gulf of Alaska are not discarded in the ordinary sense of the word. Other things being equal, they are often sought after as they compare most favorably with octopus in effectiveness as bait. The value to the fleet of such incidentally-caught species as bait is indicated by the fact that over 2,000,000 pounds of octopus, chiefly imported from Japan, was purchased in 1962 at a cost of about 30 cents per pound for use as bait by the United States and Canadian setline vessels fishing halibut west of Cape Spencer.

There are at present two sources of information that provide some indication of the amounts of other species than halibut that are caught by United States and Canadian setline vessels in the Gulf of Alaska.

During five tagging trips off Kodiak Island from May to July, 1963, the numbers of incidentally-caught species were recorded. They consisted predominantly of grey cod and black cod, some turbot and sculpins and very minor numbers of other species. The catch per unit effort of the incidental species was very uniform between trips. The calculated total weight of the foregoing incidentally-caught species during the 5 trips was 16,080 pounds or about 8 percent of the total catch which also included about 177,000 pounds of halibut.

Since the tagging trips were conducted according to a pre-determined pattern of stations over the entire shelf area, the above proportion of incidental species in the catch is probably higher than normally encountered in the region by the commercial setline fleet that tend to select the areas of halibut concentrations. From past experience it is known that the same vessel used in tagging would probably have taken about 300,000 pounds of halibut on 5 commercial trips in the same region. Also, as a result of fishing only on the areas of halibut concentration, it is probable that its catch of incidentally-caught species would have been lower. Thus, in view of the probable very much larger catch of halibut and smaller catch of the other species in a like commercial operation, a 4 percent rather than an 8 percent ratio would be a more reasonable estimate of the proportion of incidental species in the catch of United States and Canadian setline vessels in the region of Kodiak Island.

The other source of information is from compilations of the bait used in the region by the United States and Canadian halibut fleets. These data are collected by the Commission trip by trip from the vessels. They indicate that the two fleets together used about 290,000 pounds of bait derived from the incidentally-caught, usually larger-sized individuals, of the same species noted
above for the tagging vessel. The United States and Canadian catch in this region in 1962 totalled 18,478,000 pounds. This total includes the catch of vessels that did not utilize either any or all of the incidentally-caught species. The weight of the incidental species used as bait would be about 1.5 percent of the total of all species.

A conservative allowance for the effect of some vessels not using any of the incidental species as bait or only some of them, or only the larger individuals would be to possibly double the above 1.5 percent to 3.0 percent.

When the above estimates are judged in light of the variables involved in two such extremely dissimilar sources of data their coincidence is remarkably close. However, caution should be exercised in extending their applicability to regions other than those off Kodiak Island.