

**REPORT OF THE INTERNATIONAL FISHERIES
COMMISSION**

**APPOINTED UNDER THE TREATY BETWEEN THE UNITED STATES
AND CANADA FOR THE PRESERVATION OF THE
NORTHERN PACIFIC HALIBUT FISHERY**

NUMBER 18

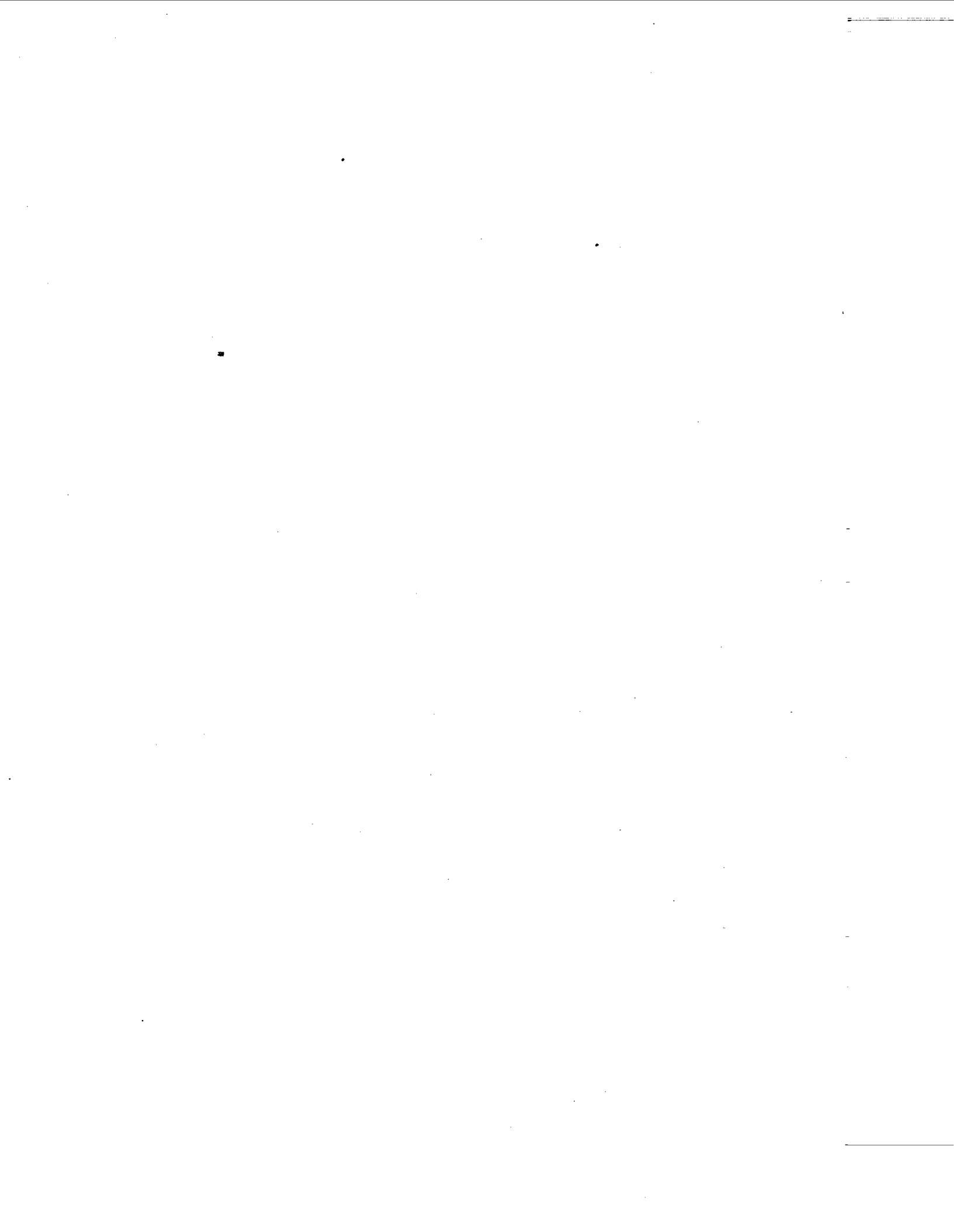
**REGULATION AND INVESTIGATION
OF THE PACIFIC HALIBUT
FISHERY IN 1951**

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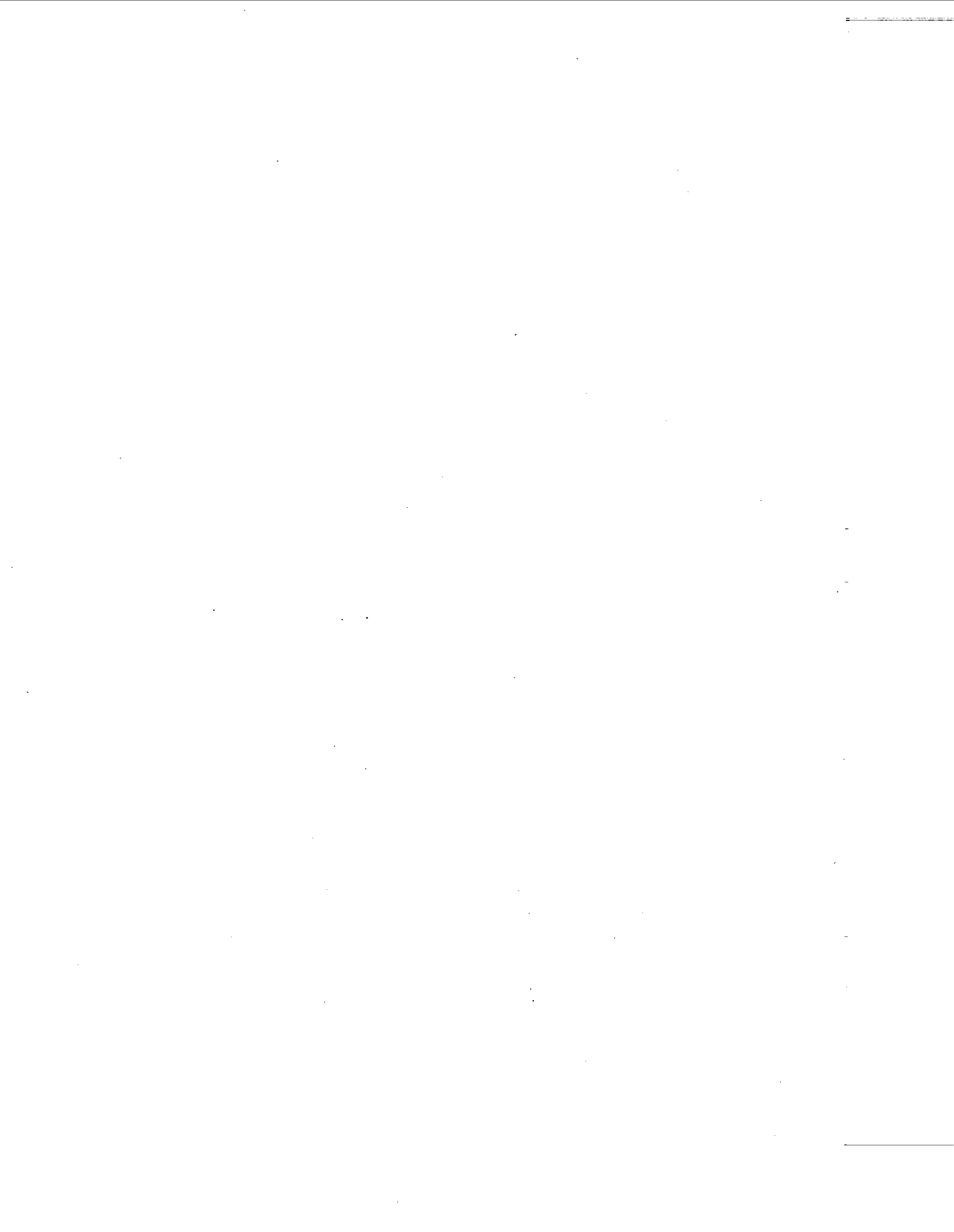


FOREWORD

The terms of the Conventions of 1923, 1930 and 1937 between the United States and Canada for the preservation of the halibut fishery of the Northern Pacific Ocean and Bering Sea provide that the International Fisheries Commission shall report upon its activities from time to time.

Seventeen reports have been issued prior to the present one which is the fifth of a series of annual reports, commenced in 1947 to provide a brief summary of the Commission's activities during the year.

The nature of this report precludes the inclusion of extensive background material. The reader desiring further information is referred to earlier reports.



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INTRODUCTION

The first treaty for the preservation and development of the Pacific halibut fishery was signed by Canada and the United States in 1923 and ratified in 1924. It provided for a three-month winter closed season and the appointment of the International Fisheries Commission which was required to investigate the fishery and to recommend to the governments measures for its preservation.

Regulatory measures to reduce fishing, to halt the continuing decline in the fishery and to rebuild the fishery were recommended to the two governments in 1928, after extensive scientific investigations. The necessary authority was provided in a new convention, signed in 1930 and ratified in 1931. Under this treaty the Commission could change or suspend the closed season; divide the convention waters into areas and limit the catch of halibut to be taken from each; regulate the licensing and departure of vessels; collect statistics; fix the type of gear to be used; and, close grounds found to be populated by small immature halibut. Enforcement of the regulations was made a function of the individual governments.

A new treaty in 1937 continued the provisions of the 1930 treaty and further provided for the control of the capture of halibut caught incidentally to fishing for other species in closed halibut fishing areas. The Commission was also authorized to prohibit the departure of vessels for any area when those which had already departed would suffice to take the area's catch limit.

The fishery has been controlled since 1932 by regulations adopted annually by the Commission, approved by the President of the United States and the Governor-General of Canada, and enforced by enforcement agencies of the two governments.

The stocks of halibut available to the fishery have increased greatly in size under regulation and the annual catch during the past five years has averaged over 56 million pounds, about 12 million pounds greater annually than in 1931. In spite of the larger annual catches now allowed, the increased abundance has brought about a sharp reduction in the amount of fishing effort required to secure the catch.

The increase in the abundance of halibut, together with more than a hundred per cent increase in the size of the fleets, has greatly increased the rate of capture. As a result, the period of fishing which was eight and one-half months long in 1932 was in 1951 about one month long in one of the two important fishing areas and two months long in the other, despite the greater total catches allowed.

The shortening of the fishing season has altered the distribution of fishing because the stocks of halibut on different grounds are not equally available at all times of year. Statistical and biological investigations show that some grounds whose stocks are most available at the time of the short fishing season are being overfished and that other grounds whose stocks are most available at other times of year are being underfished.

Additional evidence regarding the utilization of the stocks on the different grounds is being accumulated as rapidly as possible and changes are being made in the regulations, on an experimental basis, to ascertain the practicability of improving the utilization of the available supply of halibut under present treaty powers.

ACTIVITIES OF THE COMMISSION

In 1951 the Commission completed its twentieth year of regulation of the halibut fishery and carried forward the statistical and biological investigations which form the basis for the regulations.

The annual meetings of the Commission were held at Seattle, Washington, on January 25, 26 and 27. During this period conferences were also held with representative Canadian and United States wholesale halibut dealers, with the Conference Board composed of representatives from the fishermen's and vessel owners' organizations in the major halibut ports and with a representative of the Alaska salmon trollers.

At a meeting with the above mentioned representatives of the halibut industry, the Commission reviewed accumulated evidence which indicated that the restriction of fishing in Area 2 to the May period was resulting in the under-utilization of some sections of the stocks and probably in the over-utilization of other sections. It informed the representatives that, in view of probable delays in the conclusion of a new treaty, it was considering certain modifications of the regulations to secure more uniform exploitation of the stocks.

The terms of the current treaty allowed only one fishing period in each regulatory area each year. This made only two types of measures available for spreading fishing over more of the year, namely, a general rotation of opening dates over a period of years and a subdivision of the present large areas into smaller ones each of which might be opened at an appropriate time of year.

It appeared probable that a moderate rotation of opening dates of the present large areas over a period of years would bring about a more even exploitation of the stocks appearing on all grounds both early and late. The division of the present large areas into smaller areas and the opening of these smaller areas at their most productive season seemed less generally applicable. However, two recently underfished sections of Area 2 suggested themselves as suitable for separation from Area 2 and for opening about August 1, one in southern Hecate Strait off British Columbia, the other in the Forrester Island-Cape Addington region off southeastern Alaska.

The above proposals were subsequently discussed at separate meetings with the wholesale halibut dealers and with the Conference Board. At the meeting with the latter group, recommendations of the delegates regarding the regulation of the fishery were also reviewed.

THE 1951 REGULATIONS

The Pacific Halibut Fishery Regulations for 1951 were approved by the President of the United States on April 6 and by the Governor-General in Council of Canada on April 11 and were made effective forthwith.

While most of the provisions of the 1951 regulations were substantially the same as those for 1950, there were major changes in some. On account of the latter, the 1951 regulations are appended.

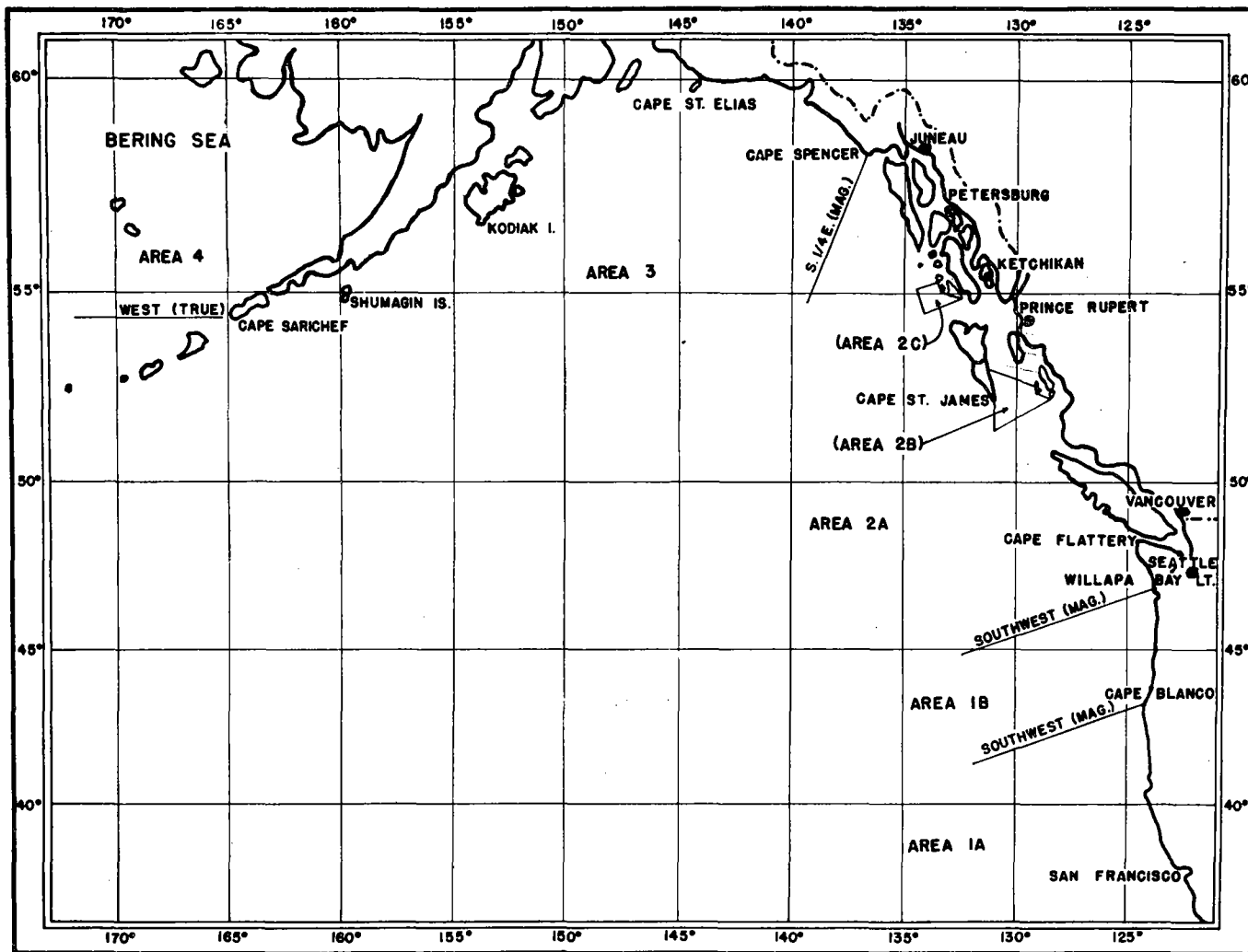
The convention waters were divided into seven regulatory areas, two more than in 1950, by subdividing former Area 2 into Areas 2A, 2B and 2C. The seven areas were: Area 1A, the waters off the southern Oregon and northern California coasts south of Cape Blanco, Oregon; Area 1B, the waters off the Oregon and Washington coasts between Cape Blanco and Willapa Bay, Washington; Area 2A, the waters between Willapa Bay and Cape Spencer, Alaska, exclusive of Areas 2B and 2C; Area 2B, off the east coast of Moresby Island in lower Hecate Strait; Area 2C, off the west coast of Dall Island in the Forrester Island region of southeastern Alaska; Area 3, the waters off the coast of Alaska between Cape Spencer and a line running true west from Cape Sarichef on Unimak Island; and Area 4, the part of Bering Sea north of the above Cape Sarichef line.

Catch limits of 25,500,000 pounds, 28,000,000 pounds and 500,000 pounds were provided for Areas 2A, 3 and 4, respectively, involving no changes except that Area 2A was given the catch limit of former Area 2. Areas 1A and 1B, where the catch of halibut is comparatively small, were allowed to continue without catch limits. Areas 2B and 2C also had no catch limits assigned to them.

The opening of the fishing season was set for May 1 in all areas except 2B and 2C which were opened for 10 days from July 26 to August 4, inclusive.

The closure dates of Areas 2A, 3 and 4 were again made contingent upon the attainment of their respective catch limits, or in the case of Area 4 upon the earlier closure of Area 3 to eliminate opportunities for illegal post-season fishing in Area 3. The closure date of Area 2A was applied to Area 1B and that of Area 2A or Area 3, whichever was later, was applied to Area 1A.

Other regulatory provisions were also continued, as follows: a minimum size limit of 26 inches heads-on or five pounds heads-off for halibut; the closure of two nursery areas, one off Masset in northern British Columbia and one off Timbered Islet in southeastern Alaska; the prohibition of the use of dory gear and nets of any kind for the capture of halibut; the termination of permits for the retention of halibut caught incidentally during fishing for other species in closed areas after November 15; and the beginning of the winter closed season after November 30 in any area that might still be open by reason of the non-attainment of the catch limit which otherwise determined its closure.



Pacific Coast of North America, showing the regulatory areas defined by the International Fisheries Commission in 1951

Areas 2A and 1B were closed to halibut fishing at midnight of May 28 and Areas 3, 4 and 1A were closed at midnight June 25. Areas 2B and 2C were closed at midnight August 4, as specified in the regulations.

The closure dates of Areas 2A and 3 were announced in advance on May 16 and June 5, respectively, on the basis of the estimated dates of attainment of their respective catch limits.

STATISTICS OF THE FISHERY

Landings from each regulatory area during 1951 are given and compared in the following table with landings at five-year intervals back to 1931, the year immediately before the commencement of regulation. No landings were made from Area 4 in the Bering Sea.

All figures are in thousands of pounds, and, unlike in previous annual reports, the totals for the several years include variable amounts of halibut caught in contravention of the regulations or amounts declared from the wrong area and amounts estimated to have been landed but not reported. Thus these totals are considered the actual catches as landed from each area and are comparable to the figures presented in Report No. 17 for the years 1888 to 1950. All 1951 figures in this report are preliminary and subject to minor changes.

| Year | Area 1 | Area 2* | | | Area 3 | | | Areas 1, 2, 3 | | |
|------|--------|---------|----------|--------|--------|----------|--------|---------------|----------|--------|
| | U.S. | U.S. | Canadian | Total | U.S. | Canadian | Total | U.S. | Canadian | Total |
| 1931 | 923 | 14,609 | 7,018 | 21,627 | 20,907 | 765 | 21,672 | 36,439 | 7,783 | 44,222 |
| 1935 | 1489 | 13,563 | 9,255 | 22,818 | 22,088 | 953 | 23,041 | 37,140 | 10,208 | 47,348 |
| 1940 | 779 | 15,362 | 12,254 | 27,616 | 25,266 | 646 | 25,914 | 41,407 | 12,900 | 54,307 |
| 1945 | 401 | 12,824 | 11,554 | 24,378 | 25,584 | 3,567 | 29,151 | 38,809 | 15,121 | 53,930 |
| 1950 | 392 | 12,862 | 14,184 | 27,046 | 25,396 | 4,815 | 30,211 | 38,650 | 18,999 | 57,649 |
| 1951 | 298 | 14,772 | 16,248 | 31,020 | 20,339 | 4,816 | 25,155 | 35,409 | 21,064 | 56,473 |

*In 1951, includes the 3,681,000 pounds landed from Areas 2B and 2C.

The landings shown under Area 1 in 1950 and 1951 include those from present Areas 1A and 1B, into which Area 1 of years prior to 1946 was subdivided. These areas are at the southern extremity of the commercial range of the species and, as their stocks are relatively small, no catch limits have been placed upon them. The combined catch from Areas 1A and 1B has been about one-half million pounds or less in recent years.

Area 2 and Area 3 landings have increased markedly under regulation. The average annual production from Area 2 since 1946 has been about six

million pounds more than in 1931. Area 3 landings in recent years have averaged about seven million pounds greater than the 1931 total.

In 1951, the catch from Area 3 was less than the catch limit of 28,000,000 pounds by nearly two million pounds due to the onset of very bad weather during the last week of the season, too late to change the date of closure which must be announced about 20 days in advance to allow boats which have already departed for the fishing grounds to complete their trips. This large deficit in the Area 3 catch in 1951 offsets the considerable excess which resulted from better than average weather in 1950. During the past five years excess catches from Area 3 have balanced deficits so closely that the yearly average catch has been only 100,000 pounds over the 28 million pound catch limit.

United States and Canadian landings from all areas in 1951 amounted to 57.1 million pounds and were 12.9 million pounds above the 1931 level.

The distribution of catches according to ports of landing from all regulatory areas, except Areas 1A and 1B, was as shown in the following table.

| Year | Canadian Ports | | | | United States Ports | | | | |
|-----------|------------------------------------|------------------|----------------|--------|---------------------|----------------|-------------------|----------------|--------|
| | Vancouver, New West- minster | Prince Rupert | Minor Ports | Total | Puget Sound | S.E. Alaska | Central Alaska | Minor Ports | Total |
| 1931..... | 1,066 | 16,792 | 516 | 18,374 | 15,203 | 8,240 | 1,482 | | 24,925 |
| 1935..... | 2,242 | 12,966 | 1,921 | 17,129 | 22,275 | 6,536 | 13 | 114 | 28,938 |
| 1940..... | 2,032 | 18,715 | 3,359 | 24,106 | 19,135 | 9,544 | 182 | 326 | 29,187 |
| 1945..... | 1,810 | 15,196 | 2,498 | 19,504 | 11,429 | 18,796 | 2,181 | 1,264 | 33,670 |
| 1950..... | 1,110 | 17,085 | 4,418 | 22,613 | 7,237 | 21,008 | 4,367 | 1,701 | 34,308 |
| 1951..... | 2,512 | 17,739 | 4,640 | 24,891 | 9,648 | 15,893 | 3,898 | 1,844 | 31,283 |

LANDINGS OF INCIDENTALY CAUGHT HALIBUT

With a strengthening of the price for blackcod, which was weak in 1950, and uncertain conditions in the albacore tuna fishery, a much larger number of the vessels of the halibut fleet continued longline fishing after the regular halibut season.

The regulations provide that setline boats fishing for other species in areas which have been closed to halibut fishing through attainment of their catch limits, or by statutory provision as in the case of Areas 2B and 2C, may obtain permits to retain for sale one pound of incidentally caught halibut for each seven pounds of other salable species.

The number of vessels securing permits, the number of fares landed and the amount of halibut involved in the operations of the Canadian and

United States fleets in Area 2 during the years 1949 and 1950 and in the corresponding areas in 1951 were as follows:

| | 1949 | | | 1950 | | | 1951 | | |
|------------------------------|------|------|-------|------|------|-------|------|------|-------|
| | Can. | U.S. | Total | Can. | U.S. | Total | Can. | U.S. | Total |
| Number boats fishing | 46 | 112 | 158 | 14 | 47 | 61 | 44 | 136 | 180 |
| Number trips landed | 148 | 390 | 538 | 28 | 182 | 210 | 85 | 375 | 460 |
| Landings in 1000's of lbs... | 299 | 561 | 860 | 56 | 264 | 320 | 272 | 679 | 951 |

In recent years some of the same vessels also made permit trips to Area 3. The additional poundage landed by the United States and Canadian fleets from Area 3 amounted to 69,000, none and 85,000 pounds in 1949, 1950 and 1951, respectively.

THE FISHERY IN AREAS 2B AND 2C

The establishment of the fishing grounds of southern Hecate Strait off British Columbia as Area 2B and of the grounds in the Forrester Island-Cape Addington region off southeastern Alaska as Area 2C in 1951 and the opening of them to fishing at a different time than other areas was a first experimental attempt to increase the utilization of halibut upon some recently underfished grounds.

Biological and statistical studies* had shown that the shortening of the Area 2 fishing season, resulting from the great increase in the supply of halibut under regulation and a doubling of the number of halibut vessels, had disrupted the accustomed seasonal pattern of fishing and was interfering with the utilization of the supply. Statistics showed that the short season had concentrated fishing upon grounds whose season of best fishing corresponded to the fishing season and reduced it upon grounds whose season of best fishing fell outside the fishing season. As a result, the catch of halibut from some of these grounds had decreased in spite of the increase in the stock of fish. Tagging† and other biological studies indicate that there was relatively little movement of halibut from one part of Area 2 to another and that, therefore, a potential yield of significant magnitude was being lost, also that recovery of this loss would require the spreading of fishing in time and space.

Only two types of regulatory measures‡ that would spread fishing over more sections of the halibut stocks, were possible under governmental interpretation of the Commission's treaty powers. These measures included varying the time of the fishing season from year to year in each of the large regulatory areas and dividing the large regulatory areas into smaller ones and

*International Fisheries Commission, Report No. 15, pp. 13-17, 1951.

†Idem., Report No. 2, pp. 76-88, 1930.

‡Idem., Report No. 15, pp. 17-19, 1951.

opening them at different times of year. Both methods had definite limitations. However, the latter method had the merit of being less disturbing to the industry and was selected by the Commission for trial on a limited scale.

In 1951, two small sections of Area 2 were accordingly separated from the remainder of the area, one section being designated as Area 2B and the other as Area 2C, as shown in the chart on page 10.

These two areas had shown a sharp reduction in yield in recent years, in which the fishing season had come to lie within the month of May, whereas other portions of Area 2 were producing from 35 to 95 per cent more fish than in the early 1930's. In Area 2B the yield had declined to about 50 per cent of the yield in years when the fishing season had continued through summer and early autumn. In Area 2C the yield during the May fishing season had fallen about 25 per cent below that of earlier years.

Fishing records had shown that these two areas had been at best production during the summer months. Thus, there was good reason to believe that a greater yield could be expected from them by fishing them in the summer and that the catch would exceed the loss that would result from the necessity, under the present treaty, of closing the areas during the May fishing season.

Areas 2B and 2C were given an opening date of July 26 and a closing date of August 4, providing 10 days of fishing. The choice of the time of year was based upon the previous history of the grounds which showed that late July and August had been the months of best production. The selection of specific dates was dictated by the tidal cycle prevailing in the areas. The length of the fishing period was the maximum that the stocks were considered capable of withstanding with the number of vessels that were expected to participate in the fishery. It was also the minimum length of time that would assure profitable fares and justify the re-entry of vessels into the longline fishery at that time of year. It was estimated that 150 vessels would enter the fishery and that the catch would amount to approximately 3,500,000 pounds.

The numbers of vessels and fishermen that participated, and the production for each area by the Canadian and United States fleets were as follows:

| | Area 2B (Lower Hecate Strait) | | | Area 2C (Forrester Island) | | | Areas 2B and 2C (Combined) | | |
|------------------------------|----------------------------------|------|-------|-------------------------------|------|-------|-------------------------------|-------|-------|
| | Can. | U.S. | Total | Can. | U.S. | Total | Can. | U.S. | Total |
| Number of vessels | 55 | 46 | 101 | 8 | 34 | 42 | 63 | 80 | 143 |
| Number of fishermen | 325 | 286 | 611 | 49 | 196 | 245 | 374 | 482 | 856 |
| Landings in 1000's of lbs... | 1,460 | 917 | 2,377 | 263 | 950 | 1,213 | 1,723 | 1,867 | 3,590 |

The 143 vessels that participated closely approximated the number which had been estimated in January as likely to engage in such a post-season fishery. However, the number of boats fishing Area 2C was somewhat below estimate and that in Area 2B, slightly higher than expected. The total catch of 3,681,000 pounds from both areas closely approximated the pre-season estimate though the Area 2C catch, like its fleet, was under expectations and the 2B catch exceeded the anticipated amount.

The catches were distributed among the accessible ports as shown in the following table. The Canadian fleet caught 50 per cent of the total commercial catch and Canadian ports received 54 per cent of the landings.

| Port of Landing | U.S. Fleet | Canadian Fleet | Total U.S. & Canadian |
|-----------------------------------|------------|----------------|-----------------------|
| Astoria..... | 11,000 | | 11,000 |
| Seattle..... | 1,460,000 | | 1,460,000 |
| Other Washington Ports..... | 51,000 | | 51,000 |
| Ketchikan..... | 166,000 | | 166,000 |
| Other Alaska Ports..... | 10,000 | | 10,000 |
| Total U.S. Ports..... | 1,698,000 | | 1,698,000 |
| Vancouver..... | | 582,000 | 582,000 |
| Prince Rupert..... | 169,000 | 927,000 | 1,096,000 |
| Other British Columbia Ports..... | | 305,000 | 305,000 |
| Total Canadian Ports..... | 169,000 | 1,814,000 | 1,983,000 |
| Grand Total..... | 1,867,000* | 1,814,000 | 3,681,000* |

*Includes 51,000 pounds caught during tagging operations by the International Fisheries Commission.

In comparison with catches in the month of May 1950 from the same areas, the 1951 catches showed a very satisfactory net gain. In Area 2B the 1951 catch of 2.5 million pounds was about 1.5 million greater than the May catch in 1950 and in Area 2C the catch increased from about 0.25 million in May 1950 to nearly 1.2 million pounds in 1951. Thus a combined net gain of approximately 2.5 million pounds was achieved by the experiment in the two areas. This gain in poundage represents a net increase of about \$512,000 in landed value of the fish and associated vitamin-bearing products. The increase in poundage was in conformity with what had been expected of these two areas in light of their historical productivity.

Good fishing was encountered in both areas at the commencement of the 10-day season, in spite of the relative crowding of the vessels and some lack of familiarity with the grounds. However, since the considerable number of vessels fishing simultaneously on a relatively small area were unable to shift the centers of their operations, a sharp decline from day to day in the catch per skate was inevitable. This was pronounced in both areas, but particularly so in Area 2B where the concentration of vessels was much greater.

The catch per skate in Area 2B for comparable amounts of fishing was

about 49 per cent higher than it had been during the May season in 1949 and 1950 on the same grounds. Even the average catch per skate in Area 2B for the 10-day period was higher than the season's average in 1949 and 1950, although in 1951 three times the catch was removed from the stocks in one-third the time with a much greater concentration of fishing effort. No reliable comparative figures are available for Area 2C due to the very limited data available for the unproductive May season in recent years.

The size and age compositions of the stocks were studied by sampling the landed catches. A total of 11,381 fish were measured from 18 trips landed in Seattle, Vancouver, and Prince Rupert and 2,771 otoliths were secured for age determinations. In addition the proportion of the various trade weight-classes in the landed catch provided useful information as to the nature of the stocks on the grounds at that time.

The average size and age of the fish caught was very high in nearly all sections of Area 2B. In Area 2C the increase was not apparent due to considerable fishing in the northern portion of the area adjacent to the Cape Addington-Timbered Islet nursery grounds where there was a concentration of smaller sized fish. The following table shows the percentage of "chickens" (5-10 lbs.) "mediums" (10-60 lbs.) and "large" (over 60 lbs.) in the catches landed from each area in 1951 compared to the average for the May fishing from 1948 to 1950.

| | Area 2B | | | Area 2C | | |
|--------------|----------|---------|-------|----------|---------|-------|
| | Chickens | Mediums | Large | Chickens | Mediums | Large |
| 1948-50..... | 14.7 | 68.5 | 16.8 | 17.2 | 57.9 | 24.9 |
| 1951..... | 5.0 | 58.1 | 36.9 | 25.6 | 48.4 | 26.0 |

In the portion of the Area 2C catch taken in the immediate vicinity of Forrester Island the percentage of large was 30 and of chickens 22, compared to the above 26 per cent for each class in the catches from the area as a whole.

The accumulation of larger fish observed in the catches from Area 2B was also apparent in the age composition of the catch. Age samples read to date show that 45 per cent, by number, of the halibut caught in the area in 1951 were 12 or more years of age, whereas in 1935 only 16 per cent of the catch were of like age. In contrast, on the nearby Goose Island grounds where fishing has always been intense, the percentage of 12 year and older fish increased only from 4 to 7 per cent in the same period. It thus appears that reduced fishing on the grounds in Area 2B during recent years has resulted in the accumulation of a stock of larger and older fish which has not been contributing to the annual catch and which may, as a result of intraspecific competition, interfere with the securing of the maximum yield.

These fish would be largely mature inasmuch as all males and 50 per cent of the females are mature at the age of 12 years.

The Area 2B fishery in 1951 recovered 10 per cent of the tagged fish released on the same grounds at the same season in 1950, whereas the fishery in adjacent parts of Area 2A in May recovered none of them. Thus, recoveries in the first year failed to show any exploitation of the Area 2B summer stock elsewhere during the spring fishing season.

The above recovery of Area 2B tags in Area 2B appeared to be very low, in view of the intensity of fishing and the decline in catch per skate. While the first year's recoveries cannot be regarded as conclusive, the apparently low rate of recovery would seem to justify the tentative conclusion that the fishery in Area 2B fished upon only part of the accumulated stock of larger halibut in that region.

The experimental opening of under-fished Areas 2B and 2C at the time of year when they used to be most productive was successful and equal to expectations. However, the experience with these two areas cannot be used as a criterion of the general usefulness of this method of regulation.

Areas 2B and 2C were particularly well adapted to such treatment. The fishing grounds within these areas were sufficiently isolated from the adjoining areas as to make patrol during the open season in the adjoining areas reasonably effective. No one section of the fleet was dependent upon either of these areas to any large degree during the regular season when they must be closed under the terms of the present treaty. These areas were also large enough to support a reasonable sized fleet during an open period of specified length and could be expected to give yields adequate to provide profitable fares. Furthermore, the expected total catch from each area was estimated to be sufficiently in excess of what was normally caught during the May season to justify the experiment.

No other section of the grounds in Area 2 seemed to qualify in regard to all these requirements and only one or possibly two grounds could even approximate them. In the halibut fishery practical considerations militate against a too piece-meal control of the stocks. Closed areas must be such that they can be patrolled effectively. An open area must possess stocks that can support the size of fleet that may fish the area and the stocks must be large enough and in suitable condition to permit at least 10 days of fishing. In many other important fisheries such as salmon, sardine and herring, the length of open season and amount of catch permitted can be controlled by altering the length of fishing time allowed in terms of hours. Also, in some fisheries unlike that for halibut the number of boats engaged in the fishery in a certain area can be controlled indirectly, if not directly.

Tagging and other studies continue to accumulate evidence showing that even sections of the grounds now heavily fished in May possess later appearing stocks that may not be contributing their share to the total yield. It becomes more evident as the investigations proceed that proper regulation of the fishery cannot be secured by providing the occasional opening of a few

small underfished sections of the areas but will require a distribution of fishing over all grounds during a greater part of the year, either annually or at recurring intervals. The separate regulation of small sections of the stocks can be used at best only as a supplementary measure of limited applicability.

CHANGES IN COMPOSITION OF CATCHES

Detailed fishing records, which show the over-all changes in the abundance of the commercially available stocks of halibut in the different areas and on the different grounds, must be supplemented by information concerning the changes taking place inside the stocks. Changes occur in the internal composition of each stock as a result of fluctuations in the numbers of young entering the fishery and because of changes in the amount of fishing. These changes affect the productivity of the stocks and must be known if the fishery is to be managed properly.

Three types of information regarding the composition of the stocks are collected and used by the Commission. One type, the landings according to trade categories as recorded by the buyers, is of limited and only general value because of the wide range of weights included in the trade categories and variations in grading. The second type, length-composition data, is obtained by measuring fish in the commercial landings from different banks. The third type, age-composition data, is derived from the above length-composition data and from samples of otoliths collected for the determination of age from the same landings. The second and third types are supplemented by length data and age materials collected on the fishing grounds during scientific work involving fishing operations.

Sampling of the commercial catches for materials for length-composition and age-composition studies was conducted, in conjunction with other work during the fishing seasons, at Seattle, Vancouver and Prince Rupert. Approximately 46,500 measurements and some 8,500 otoliths were secured from 74 trips distributed as follows: 22 trips from Area 2A, 10 from Area 2B, 8 from Area 2C and 34 from Area 3. These samples from the commercial catch were supplemented by 21,000 measurements and 9,200 otoliths collected incidentally during tagging operations in the same four areas.

The Goose Island grounds in Area 2A are characterized by a relatively high proportion of fish under 10 pounds in weight. They have been sampled for 18 consecutive years, during which several short term fluctuations in the supply of young have been apparent. The 1951 samples showed a continuation of a decline in the number of "chicken" halibut (below 10 pounds) which has made the fishery increasingly dependent upon "medium" halibut (10 to 60 pounds) since 1947. The same unfavorable condition was apparent in the age samples. There was a noticeable scarcity of 8 year olds and younger fish, and the 9 and 10 years olds which are the mainstay of the fishery were being drawn upon heavily. A further decline in the stocks available for capture here, and possibly in other heavily fished sections of

Area 2A, seems inevitable in the immediate future unless there is a strong showing of entering young by 1952.

The period of years covered by the sampling program in northern Hecate Strait, initiated at Prince Rupert in 1948, did not yet cover a sufficient number of years to warrant conclusions as to trends.

As was noted in an earlier section of this report, both the size and age composition of the catches from Area 2B, which had been little fished in recent years, showed a much greater increase in the proportion of larger, older fish than did the catches from the adjoining Goose Island section of Area 2A which had been continuously subject to an intense fishery.

Preliminary analysis of the 1951 length-composition data from Area 3 and comparison with similar data for the preceding two years appeared to remove previous confusion, resulting from variations in composition from sample to sample and from place to place in the area. These data showed consistent differences in the nature of the stock in four parts of the area and thus provided bases of comparison which should make the changes in the stock understandable.

The nature of the catches from Area 3 depends upon the relative prominence of two groups of fish—a smaller-size group of chickens and small mediums, ranging from 27 to 35 inches (70-90 cm.) in length and composed of immature and mature males and immature females; and, a larger-size group of mediums, ranging from 39 to 51 inches (100-130 cm.) and composed largely of mature females. Summer catches from the eastern part of the area are characterized by the dominance of the smaller-size group, as are those from a section of the inshore grounds off central Alaska. The offshore grounds of central Alaska are characterized by almost equal prominence of both groups. Those from the grounds off the Alaska Peninsula, west of Trinity Island, are also characterized by prominence of the two groups with the larger-size group more dominant to the east and the smaller-size group more dominant to the west.

Many age readings were made during the year upon both recent and prewar samples of otoliths from Area 3. Results suggested that some brood years during the past 30 years had contributed more than others to the catches of subsequent years, but were still too limited and scattered to permit evaluation of the changes. These studies, when completed, will fill current gaps in knowledge of the character of the Area 3 stocks, and will explain recent changes which are not yet understood. They will provide a better foundation for management of these stocks whose yield is now close to the maximum that can be expected on the basis of the past history of the fishery.

MARKING EXPERIMENTS

A broad marking program was begun in 1949 to study the degree to which the halibut stocks on important fishing grounds were being utilized by the fishery. The program provided for the tagging of halibut at different

seasons on important fishing grounds in Area 2 (now Areas 2A, 2B and 2C) and in Area 3. Recoveries would show to what extent the different parts of the stocks were contributing to the fishery during the currently short fishing season and what geographic and seasonal changes in the distribution of fishing might be required to assure proper utilization.

The marking program was undertaken because of evidence* that the stocks of fish on different grounds in Area 2 were contributing very unequally during the current short fishing period, evidence that some sections of Area 2 stocks were not available on the fishing grounds at the time of the fishery, and the belief that similar conditions might exist in Area 3.

Under ideal conditions, all marking on a particular bank should be done at the necessary seasons during the same year. This was impracticable due to problems arising from the period of time covered by fiscal years which made it necessary to concentrate upon marking in the summer and autumn seasons before undertaking spring marking.

During the summer and autumn of 1949 and 1950, a total of 6,849 fish were tagged. Samples of the halibut stocks were tagged and released in the Portlock Bank, Trinity Islands, Lighthouse Rocks, Shumagin Islands and Sanak Island regions of Area 3 and in the northern Hecate Strait, southern Hecate Strait and Cape Flattery regions of Area 2. The objective of tagging large samples in each location, so as to assure numerous recoveries for analytical purposes, could not always be achieved due to weather and fishing conditions.

In 1951, two vessels were chartered and operated for a combined period of five months to carry forward the marking program. Good fishing was encountered on all but one trip and 11,130 halibut were tagged and released, a number far exceeding any two-year total in previous Commission operations. The regions where tagging was done, the month of tagging and the number and estimated weight of the tagged fish was as follows:

| Region | Month | Number Tagged | Weight Tagged (pounds) |
|-----------------------------|-------------------|---------------|------------------------|
| Icy Strait..... | February-March | 1,688 | 43,139 |
| Albatross Bank..... | July | 1,178 | 25,874 |
| Yakutat..... | August | 1,502 | 27,960 |
| Forrester Island..... | August | 2,000 | 20,264 |
| Northern Hecate Strait..... | August-September | 1,820 | 23,960 |
| Southern Hecate Strait..... | September | 233 | 5,510 |
| Goose Island..... | September-October | 2,709 | 37,176 |
| Totals..... | | 11,130 | 183,883 |

Returns of tagged halibut from previous experiments totalled 339 in 1951. These included the second year's returns from tagging on Portlock Bank in 1949, the first year's returns from tagging in the Trinity Islands

*International Fisheries Commission, Report No. 15, pp. 13-17, 1950.

and Shumagin Islands regions of Area 3 and in the southern Hecate Strait and Cape Flattery regions of Area 2, also some returns from incidental tagging during investigations of the otter trawl fishery between the north end of Vancouver Island and Dixon Entrance in 1946 and 1947.

The recovery of tags from the summer experiments in Area 3 was again, as in 1950, much lower than expected on the basis of recoveries from experiments in the same general region in the late 1920's. They supported previous indications that the summer stocks there may not contribute greatly to the May-June fishery. Positive conclusions must await the completion of comparable spring experiments.

The return of tags from the 1946, 1947, 1949 and 1950 experiments in the Vancouver Island to Dixon Entrance section of Area 2 followed the same general pattern as in previous years. Recoveries from experiments in the same month varied from ground to ground and those from May-June experiments were appreciably higher than recoveries from July, August and September experiments, with the following notable exception. Recoveries from a July-September experiment in northern Hecate Strait, where fishing is more intense than elsewhere on the coast, were for the second year as high as from reasonably comparable May-June experiments in the same general region. Because of this inconsistency, a large number of tagged fish were released in northern Hecate Strait in 1951.

Special interest was attached to the first year's recovery of tags from the 1951 experiment in Icy Strait, inside southeastern Alaska, and the 1950 experiment in the Cape Flattery region, where tagging had not been possible previously. Of 90 tags recovered from the Icy Strait experiment, all but one were recaptured inside southeastern Alaska close to the point of tagging. One fish was recaptured off Cape Spencer but none in Area 3 where some were expected on the basis of fishermen's statements that halibut in the northern channels of southeastern Alaska resemble the fish in Area 3 more than those in Area 2. Only a few fish were recovered from the small experiment on the Cape Flattery grounds and all were recaptured in the general area of tagging.

Considerable time was spent in the laboratory assembling data relative to the intensity of fishing on the different banks in different past and recent years. The recovery of tags from each experiment must be evaluated in the light of fishing intensities which determine the chances of recapture.



APPENDIX
PACIFIC HALIBUT FISHERY REGULATIONS
EFFECTIVE APRIL 11, 1951

**Regulations of the International Fisheries Commission Adopted Pursuant to
the Pacific Halibut Fishery Convention between the United States of
America and the Dominion of Canada, Signed January 29, 1937**

REGULATORY AREAS

1. (a) Convention waters which include the territorial waters and the high seas off the western coasts of Canada and the United States of America including the southern as well as the western coasts of Alaska, shall be divided into the following areas, all directions given being magnetic unless otherwise stated.

(b) Area 1A shall include all convention waters southeast of a line running northeast and southwest through Cape Blanco Light, as shown on Chart 5952, published in February, 1935, by the United States Coast and Geodetic Survey, which light is approximately latitude $42^{\circ} 50' 14''$ N., longitude $124^{\circ} 33' 45''$ W.

(c) Area 1B shall include all convention waters between Area 1A and a line running northeast and southwest through Willapa Bay Light on Cape Shoalwater, as shown on Chart 6185, published in July, 1939, by the United States Coast and Geodetic Survey, which light is approximately latitude $46^{\circ} 43' 17''$ N., longitude $124^{\circ} 04' 15''$ W.

(d) Area 2A shall include all convention waters off the coasts of the United States of America and of Alaska and of the Dominion of Canada between Area 1B and a line running through the most westerly point of Glacier Bay, Alaska to Cape Spencer Light as shown on Chart 8304, published in June, 1940, by the United States Coast and Geodetic Survey, which light is approximately latitude $58^{\circ} 11' 57''$ N., longitude $136^{\circ} 38' 18''$ W., thence south one-quarter east and is exclusive of Area 2B and Area 2C and of the nursery areas closed to all halibut fishing in Section 9 of these regulations.

(e) Area 2B shall include all convention waters in the southern part of Hecate Straits off the coast of British Columbia within the following boundary: from the eastern extremity of Cumshewa Head on Moresby Island, approximately latitude $53^{\circ} 02' 00''$ N., longitude $131^{\circ} 36' 20''$ W., to the northern extremity of the second largest island of the Moore Islands group, approximately latitude $52^{\circ} 40' 05''$ N., longitude $129^{\circ} 25' 32''$ W.; thence to the northern extremity of Conroy Island, approximately latitude $52^{\circ} 32' 05''$ N., longitude $129^{\circ} 24' 15''$ W.; thence to McInnes Island Light on McInnes Island, approximately latitude $51^{\circ} 15' 45''$ N., longitude $128^{\circ} 43' 22''$ W.; thence southwest by south approximately 99 miles to a point approximately latitude $51^{\circ} 28' 55''$ N., longitude $131^{\circ} 00' 56''$ W.; thence true north through Cape St. James Light to a point on the southern end of Kunghit Island, approximately latitude $51^{\circ} 56' 42''$ N., longitude $131^{\circ} 00' 54''$ W.; thence along the eastern shore of Kunghit Island to Moore Head, approximately latitude $52^{\circ} 09' 02''$ N., longitude $131^{\circ} 03' 00''$ W.; thence to Point Langford, approximately latitude $52^{\circ} 09' 48''$ N., longitude $131^{\circ} 02' 36''$ W., on Moresby Island; thence along the eastern shore of Moresby Island to the point of origin on Cumshewa Head. The point on Cumshewa Head shall be determined from Chart 394, as published May 1941 by the Department of Mines and Resources, Ottawa; the points on Moore Islands and McInnes Island shall be determined from Chart 3726, as published August 1942 by the Department of Mines and Resources, Ottawa; and the points on St. James Island, Kunghit Island and Moresby Island shall be determined from Chart 3853, as published June 1949 by the Department of Mines and Resources, Ottawa, provided that the duly authorized officers of the Dominion of Canada may at any time place a plainly visible mark or marks at any point or points as nearly as practicable on the boundary line defined herein, and such marks shall thereafter be considered as correctly defining said boundary.

(f) Area 2C shall include all convention waters off the coast of southeastern Alaska within the following boundary: from the southern extremity of Cape Addington, Noyes Island, latitude $55^{\circ} 26' 11''$ N., longitude $133^{\circ} 49' 12''$ W., to the southern extremity of Granite Point, approximately latitude $55^{\circ} 18' 57''$ N., longitude $133^{\circ} 41' 25''$ W., on Baker Island; thence along the southern shore of Baker Island to Cape Bartolome, approximately latitude $55^{\circ} 14' 13''$ N., longitude $133^{\circ} 36' 42''$ W.; thence to Cape Augustine, approximately latitude $54^{\circ} 56' 56''$ N., longitude $133^{\circ} 09' 58''$ W., on Dall

Island; thence along the shore of Dall Island to Point Cornwallis, approximately latitude 54° 42' 03" N., longitude 132° 52' 30" W.; thence southwest fifty miles to a point approximately latitude 54° 27' 20" N., longitude 132° 14' 10" W.; thence northwest fifty-three miles to a point approximately latitude 55° 17' 43" N., longitude 134° 40' 00" W.; thence northeast to the point of origin on Cape Addington. The boundary lines herein indicated shall be determined from Chart 8152 as published March 1933 by the United States Coast and Geodetic Survey, Washington, D. C., except that the points on Cape Addington, Granite Point and Cape Bartolome shall be determined from Chart 8158, as published September 1941 by the United States Coast and Geodetic Survey, Washington, D. C., and the point on Cape Augustine shall be determined from Chart 8148, as published June 1925 by the United States Coast and Geodetic Survey, Washington, D. C., and the point on Point Cornwallis shall be determined from Chart 8146 as published February 1925 by the United States Coast and Geodetic Survey, Washington, D. C., provided that the duly authorized officers of the United States of America may at any time place a plainly visible mark or marks at any point or points as nearly as practicable on the boundary line defined herein, and such mark or marks shall thereafter be considered as correctly defining said boundary.

(g) Area 3 shall include all the convention waters off the coast of Alaska that are between Area 2A and a straight line running from the light on Cape Kabuch at the head of Ikatan Bay as shown on Chart 8701 published in February, 1943, by the United States Coast and Geodetic Survey which light is approximately latitude 54° 49' 03" N., longitude 163° 21' 42" W., thence to Cape Sarichef Light at the western end of Unimak Island as shown on Chart 8860 published in December, 1942, (12th Edition) by the United States Coast and Geodetic Survey which light is approximately latitude 54° 36' 00" N., longitude 164° 55' 45" W., thence true west.

(h) Area 4 shall include all convention waters in Bering Sea which are not included in Area 3.

LIMIT OF CATCH IN EACH AREA

2. (a) The catch of halibut to be taken during the halibut fishing season of the year 1951 from Area 2A shall be limited to approximately 25,500,000 pounds of salable halibut, and from Area 3 to approximately 28,000,000 pounds of salable halibut, and from Area 4 to approximately 500,000 pounds of salable halibut, the weights in each or any such limit to be computed as with heads off and entrails removed.

(b) The catch of halibut to be taken from all areas during the halibut fishing season of the year 1951 shall also be limited to halibut which with head on are 26 inches or more in length as measured from the tip of the lower jaw to the extreme end of the middle of the tail or to halibut which with the head off and entrails removed are 5 pounds or more in weight, and the possession of any halibut of less than the above length or the above weight, according to whether the head is on or off, by any vessel or by any master or operator of any vessel or by any person, firm or corporation, is prohibited.

(c) The International Fisheries Commission shall as early in the said year as is practicable determine the date on which it deems each limit of catch defined in paragraph (a) of this section will be attained, and the limit of each such catch shall then be that which shall be taken prior to said date, and fishing for or catching of halibut in the area or areas to which such limit applies shall at that date be prohibited until after the end of the closed season as defined and modified in Section 3 of these regulations, except as provided in Section 5 thereof and in Article I of the Convention, and provided that if it shall at any time become evident to the International Fisheries Commission that the limit will not be reached by such date, it may substitute another date.

LENGTH OF CLOSED SEASON

3. (a) Under the authority of Article I of the aforesaid Convention the closed season as therein defined shall be modified in Areas 1A, 1B, 2A, 3 and 4 so as to end at 12 midnight of the 30th day of April of the year 1951 and to begin at 12 midnight of the 30th day of November unless an earlier date is determined upon for any area under the provisions of paragraph (b) of this section of these regulations, and shall be modified in Areas 2B and 2C so as to end at 12 midnight of the 25th day of July and to begin at 12 midnight of the 4th day of August.

(b) Under authority of Article I of the Convention, the closed season as therein defined shall begin in Areas 2A, 3 and 4, on the dates on which their limits are reached as provided in paragraph (c) of Section 2 of these regulations and the closing of such area or areas shall be taken to have been duly approved unless before the said date either the President of the United States of America or the Governor General of Canada shall have signified his disapproval, (the burden of proving any such signification being upon the person

alleging it) and provided that the closing date of Area 2A or of Area 3, whichever shall be later, shall apply to Areas 1A and 4, unless Area 4 shall have been previously closed under this section of these regulations, and that the closing date of Area 2A shall apply to Area 1B.

(c) Nothing contained in these regulations shall prohibit the fishing for species of fish other than halibut or prohibit the International Fisheries Commission from conducting fishing operations as provided for in Article I of the Convention.

ISSUANCE OF LICENSES AND CONDITIONS LIMITING THEIR VALIDITY

4. (a) All vessels of any tonnage which shall fish for halibut in any manner or hold halibut in possession in any area, or which shall transport halibut otherwise than as a common carrier documented by the Government of the United States or of Canada for the carriage of freight, must be licensed by the International Fisheries Commission, provided that vessels of less than five net tons or vessels which do not use set lines need not be licensed unless they shall require a permit as provided in Section 5 of these regulations.

(b) Each vessel licensed by the International Fisheries Commission shall carry on board at all times while at sea the halibut license thus secured whether it is validated for halibut fishing or endorsed with a permit as provided in Section 6 of these regulations and this license shall at all times be subject to inspection by authorized officers of either of said Governments or by representatives of the International Fisheries Commission.

(c) The halibut license shall be issued without fee by the customs officers of either of said Governments or by representatives of the International Fisheries Commission or by fishery officers of either of said Governments at places where there are neither customs officers nor representatives of the International Fisheries Commission. A new license may be issued by the officer accepting statistical return at any time to vessels which have furnished proof of loss of the license form previously issued, or when there shall be no further space for record thereon, providing the receipt of statistical return shall be shown on the new form for any halibut or other species taken during or after the voyage upon which loss occurred. The old license form shall be forwarded in each case to the International Fisheries Commission.

(d) The halibut license of any vessel shall be validated before departure from port for each halibut fishing operation for which statistical returns are required. This validation of a license shall be by customs officers or by fishery officers of either of said Governments when available at places where there are no customs officers and shall not be made unless the area in which the vessel will fish is entered on the license form and unless the provisions of Section 7 of these regulations have been complied with for all landings and all fishing operations since issue of the license, provided that if the master or operator of any vessel shall fail to comply with the provisions of Section 7 of these regulations, the halibut license of such vessel may be validated by customs officers or by fishery officers upon evidence either that there has been a judicial determination of the offense or that the laws prescribing penalties therefor have been complied with, or that the said master or operator is no longer responsible for, nor sharing in, the operations of said vessel.

(e) The halibut license of any vessel fishing in halibut in Area 1A as defined in Section 1 of these regulations after the closure of Areas 1B and 2A must be validated at a port or place within Area 1A prior to each such fishing operation.

(f) No halibut license shall be validated for departure for halibut fishing in Areas 1A or 1B or 2A before midnight of the 27th day of April; or for departure for halibut fishing in Areas 2B or 2C before midnight of the 23rd day of July; or for departure for halibut fishing in Areas 3 or 4 from any port or place outside Areas 3 or 4 before midnight on the 26th day of April or from any port or place within Areas 3 or 4 before midnight of the 28th day of April.

(g) No halibut license shall be valid for halibut fishing in more than one area, as defined in Section 1 of these regulations, during any one trip nor shall it be revalidated for halibut fishing in another such area while the vessel has any halibut on board.

(h) The halibut license shall not be valid for halibut fishing in any area closed to halibut fishing or for the possession of halibut in any area closed to halibut fishing except while in actual transit to or within a port of sale.

(i) The halibut license shall not be valid for halibut fishing in any area while a permit endorsed thereon is in effect, nor shall it be validated while halibut taken under such permit is on board.

(j) The halibut license of any vessel when validated for halibut fishing in Area 3 shall not be valid for the possession of any halibut in Areas 2A, 2B or 2C if said vessel is in possession of baited gear more than 25 miles from Cape Spencer Light, Alaska; and the halibut license of any vessel when validated for halibut fishing in

Area 2B or Area 2C shall not be valid for the possession of any halibut in Area 2A if said vessel is in possession of baited gear more than 20 miles by navigable water route from the boundaries of the respective areas.

(k) No person on any vessel which is required to have a halibut license under paragraph (a) of this section shall fish for halibut or have halibut in his possession, unless said vessel has a valid license issued and in force in conformity with the provisions of this section.

RETENTION OF HALIBUT TAKEN WITH OTHER FISH UNDER PERMIT

5. (a) There may be retained for sale on any vessel which shall have a permit as provided in Section 6 of these regulations such halibut as is caught incidentally to fishing by that vessel in any area after it has been closed to halibut fishing under Sections 2 or 3 of these regulations with set lines (of the type commonly used in the Pacific Coast halibut fishery) for other species, not to exceed at any time one pound of halibut for each seven pounds of salable fish, actually utilized, of other species not including salmon or tuna, and such halibut may be sold as the catch of said vessel, the weight of all fish to be computed as with heads off and entrails removed, provided that it shall not be a violation of this regulation for any such vessel to have in possession halibut in addition to the amount herein allowed to be sold if such additional halibut shall not exceed thirty per cent of such amount and shall be forfeited and surrendered at the time of landing as provided in paragraph (d) of this section.

(b) The catch of halibut taken and retained under such permit shall be limited to halibut which with the head on are 26 inches or more in length as measured from the tip of the lower jaw to the extreme end of the middle of the tail or to halibut which with the head off and entrails removed are 5 pounds or more in weight, and the possession of any halibut of less than the above length or the above weight, according to whether the head is on or off, by any vessel or by any master or operator of any vessel or by any person, firm or corporation, is prohibited.

(c) Halibut retained under such permit shall not be landed or otherwise removed or be received by any person, firm or corporation from the catching vessel until all halibut on board shall have been reported to a customs, fishery or other authorized enforcement officer of either of said Governments by the captain or operator of said vessel and also by the person, firm or corporation receiving the halibut, and no halibut or other fish shall be landed or removed or be received from the catching vessel except with the permission of said officer and under such supervision as the said officer may deem advisable.

(d) Halibut retained under such permit shall not be purchased or held in possession by any person other than the master, operator or crew of the catching vessel in excess of the proportion allowed in paragraph (a) of this section of these regulations until such excess whatever its origin shall have been forfeited and surrendered to the customs, fishery or other authorized officers of either of said Governments. In forfeiting such excess, the vessel shall be permitted to surrender any part of its catch of halibut, provided that the amount retained shall not exceed the proportion herein allowed.

(e) Permits for the retention and landing of halibut in the year 1951 shall become invalid at 12 midnight of the 15th day of November of said year or at such earlier date as the International Fisheries Commission shall determine.

ISSUANCE OF PERMITS AND CONDITIONS LIMITING THEIR VALIDITY

6. (a) Any vessel which shall be used in fishing for other species than halibut in any area after it has been closed to halibut fishing under Sections 2 or 3 of these regulations must have a halibut license and a permit if it shall retain, land or sell any halibut caught incidentally to such fishing or possess any halibut of any origin during such fishing, as provided in Section 5 of these regulations.

(b) The permit shall be shown by endorsement of the issuing officer on the face of the halibut license form held by said vessel and shall show the area or areas for which the permit is issued.

(c) The permit shall terminate at the time of first landing thereafter of fish of any species and a new permit shall be secured before any subsequent fishing operation for which a permit is required.

(d) A permit shall not be issued to any vessel which shall have halibut on board taken while said vessel was licensed to fish in an open area unless such halibut shall be considered as taken under the issued permit and is thereby subject to forfeiture when landed if in excess of the proportion permitted in paragraph (a) of Section 5 of these regulations.

(e) A permit shall not be issued to, or be valid if held by, any vessel which shall fish with other than set lines of the type commonly used in the Pacific Coast halibut fishery.

(f) The permit of any vessel shall not be valid unless the permit is granted before departure from port for each fishing operation for which statistical returns are required. This granting of a permit shall be by customs officers or by fishery officers of either of said Governments when available at places where there are no customs officers and shall not be made unless the area in which the vessel will fish is entered on the halibut license form and unless the provisions of Section 7 of these regulations have been complied with for all landings and all fishing operations since issue of the license or permit, provided that if the master or operator of any vessel shall fail to comply with the provisions of Section 7 of these regulations, the permit of such vessel may be granted by customs or fishery officers upon evidence either that there has been a judicial determination of the offense or that the laws prescribing penalties therefor have been complied with, or that the said master or operator is no longer responsible for, nor sharing in, the operations of said vessel.

(g) The permit of any vessel shall not be valid if said vessel shall have in its possession at any time halibut in excess of the amount allowed under paragraph (a) of Section 5.

(h) No person shall retain, land or sell any halibut caught incidentally to fishing for other species of fish in any area closed to halibut fishing under Sections 2 or 3 of these regulations, or shall have halibut of any origin in his possession during such fishing, unless such person is a member of the crew of and is upon a vessel with a halibut license and with a valid permit issued and in force in conformity with the provisions of Sections 5 and 6 of these regulations.

STATISTICAL RETURN BY VESSELS

7. (a) Statistical return as to the amount of halibut taken during fishing operations must be made by the master or operator of any vessel licensed under these regulations and as to the amount of halibut and other species by the master or operator of any vessel operating under permit as provided for in Sections 5 and 6 of these regulations, within 96 hours of landing, sale or transfer of halibut or of first entry thereafter into a port where there is an officer authorized to receive such return.

(b) The statistical return must state the port of landing and the amount of each species taken within the area defined in these regulations, for which the vessel's license is validated for halibut fishing or within the area or areas for which the vessel's license is endorsed as a permit.

(c) The statistical return must include all halibut landed or transferred to other vessels and all halibut held in possession on board and must be full, true and correct in all respects herein required. A copy of such return must be forwarded to the International Fisheries Commission at such times as the latter shall require.

(d) The master or operator and/or any person engaged on shares in the operation of any vessel licensed or holding a permit under these regulations may be required by the International Fisheries Commission or by any officer of either of said Governments authorized to receive such return to certify to its correctness to the best of his information and belief and to support the certificate by a sworn statement. Validation of a halibut license or issuance of a permit after such sworn return is made shall be provisional and shall not render the license or permit valid in case the return shall later be shown to be false or fraudulently made.

(e) The master or operator of any vessel holding a license or permit under these regulations shall keep an accurate log of all fishing operations including therein date, locality, amount of gear used, and amount of halibut taken daily in each such locality. This log record shall be open to inspection by representatives of the International Fisheries Commission authorized for this purpose.

(f) The master, operator and/or any other person engaged on shares in the operation of any vessel licensed under these regulations may be required by the International Fisheries Commission or by any officer of either of said Governments to certify to the correctness of such log record to the best of his information and belief and to support the certificate by a sworn statement.

STATISTICAL RETURN BY DEALERS

8. (a) All persons, firms or corporations that shall buy halibut or receive halibut for any purpose from fishing or transporting vessels or other carrier shall keep and on request furnish to customs officers or to any enforcing officer of either of said Governments or to representatives of the International Fisheries Commission, records

of each purchase or receipt of halibut, showing date, locality, name of vessel, person, firm or corporation purchased or received from and the amount in pounds according to trade categories of the halibut and other species landed with the halibut.

(b) All persons, firms or corporations receiving fish from a vessel fishing under permit as provided in Section 5 of these regulations shall within 48 hours make to an authorized enforcing officer of either of said Governments a signed statistical return showing the date, locality, name of vessel received from and the amount of halibut and of other species landed with the halibut and certifying that permission to receive such fish was secured in accordance with paragraph (c) of Section 5 of these regulations. Such persons, firms or corporations may be required by any officer of either of said Governments to support the accuracy of the above signed statistical return with a sworn statement.

(c) All records of all persons, firms or corporations concerning the landing, purchase, receipt and sale of halibut and other species landed therewith shall be open at all times to inspection by any enforcement officer of either of said Governments or of any authorized representative of the International Fisheries Commission. Such persons, firms or corporations may be required to certify to the correctness of such records and to support the certificate by a sworn statement.

(d) The possession by any person, firm or corporation of halibut which such person, firm or corporation knows to have been taken by a vessel without a valid halibut license or a vessel without a permit when such license or permit is required, is prohibited.

CLOSED SMALL HALIBUT GROUNDS

9. (a) The following areas have been found to be populated by small, immature halibut and are closed to halibut fishing, and no person shall fish for halibut in either of such areas, or shall have halibut in his possession while fishing for other species therein, or shall have halibut of any origin in his possession therein excepting in the course of a continuous transit across such area.

(b) First, that area in the waters off the coast of Alaska within the following boundary as stated in terms of the magnetic compass unless otherwise indicated: from the north extremity of Cape Ulitka, Noyes Island, approximately latitude $55^{\circ} 33' 48''$ N., longitude $133^{\circ} 43' 35''$ W., to the south extremity of Wood Island, approximately latitude $55^{\circ} 39' 44''$ N., longitude $133^{\circ} 42' 29''$ W.; thence to the east extremity of Timbered Islet, approximately latitude $55^{\circ} 41' 47''$ N., longitude $133^{\circ} 47' 42''$ W.; thence to the true west extremity of Timbered Islet, approximately latitude $55^{\circ} 41' 46''$ N., longitude $133^{\circ} 48' 01''$ W.; thence southwest three-quarters south sixteen and five-eighths miles to a point approximately latitude $55^{\circ} 34' 46''$ N., longitude $134^{\circ} 14' 40''$ W.; thence southeast by south twelve and one-half miles to a point approximately latitude $55^{\circ} 22' 23''$ N., longitude $134^{\circ} 12' 48''$ W.; thence northeast thirteen and seven-eighths miles to the southern extremity of Cape Addington, Noyes Island, latitude $55^{\circ} 26' 11''$ N., longitude $133^{\circ} 49' 12''$ W.; and to the point of origin on Cape Ulitka. The boundary lines herein indicated shall be determined from Chart 8157, as published by the United States Coast and Geodetic Survey at Washington, D. C., in June, 1929, and Chart 8152, as published by the United States Coast and Geodetic Survey at Washington, D. C., in March, 1933, and reissued March, 1939, except for the point of Cape Addington which shall be determined from Chart 8158, as published by the United States Coast and Geodetic Survey in December, 1923, provided that the duly authorized officers of the United States of America may at any time place a plainly visible mark or marks at any point or points as nearly as practicable on the boundary line defined herein, and such mark or marks shall thereafter be considered as correctly defining said boundary.

(c) Second, that area lying in the waters off the northern coast of Graham Island, British Columbia, within the following boundary, and including the waters of Sturgess Bay, Masset Sound, Masset Inlet, and bays and inlets thereof: from the northwest extremity of Wiah Point, latitude $54^{\circ} 06' 50''$ N., longitude $132^{\circ} 19' 18''$ W., true north five and one-half miles to a point approximately latitude $54^{\circ} 12' 20''$ N., longitude $132^{\circ} 19' 18''$ W.; thence true east approximately sixteen and three-tenths miles to a point which shall lie northwest (according to magnetic compass at any time) of the highest point of Tow Hill, Graham Island, latitude $54^{\circ} 04' 24''$ N., longitude $131^{\circ} 48' 00''$ W.; thence southeast to the said highest point of Tow Hill. The points on the shoreline of the above mentioned island shall be determined from Chart 3754, published at the Admiralty, London, April 11, 1911, provided that the duly authorized officers of the Dominion of Canada may at any time place a plainly visible mark or marks at any point or points as nearly as practicable on the boundary line defined herein, and such marks shall thereafter be considered as correctly defining said boundary.

DORY GEAR PROHIBITED

10. The use of any hand gurdy or other appliance in hauling halibut gear by hand power in any dory or small boat operated from a vessel licensed under the provisions of these regulations is prohibited in all convention waters.

NETS PROHIBITED

11. It is prohibited to retain halibut taken with a net of any kind or to have in possession any halibut while using any net or nets other than bait nets for the capture of other species of fish, nor shall any license or permit held by any vessel under these regulations be valid during the use or possession on board of any net or nets other than bait nets, provided that the character and the use of said bait nets conform to the laws and regulations of the country where they may be utilized and that said bait nets are utilized for no other purpose than the capture of bait for said vessel.

RETENTION OF TAGGED HALIBUT

12. Nothing contained in these regulations shall prohibit any vessel at any time from retaining and landing any halibut which bears an International Fisheries Commission tag at the time of capture, provided that such halibut with the tag still attached is reported at the time of landing to representatives of the International Fisheries Commission or to enforcement officers of either of said Governments and is made available to them for examination.

RESPONSIBILITY OF MASTER

13. Wherever in these regulations any duty is laid upon any vessel, it shall be the personal responsibility of the master or operator of said vessel to see that said duty is performed and he shall personally be responsible for the performance of said duty. This provision shall not be construed to relieve any member of the crew of any responsibility with which he would otherwise be chargeable.

SUPERVISION OF UNLOADING AND WEIGHING

14. The unloading and weighing of the halibut of any vessel licensed or holding a permit under these regulations shall be under such supervision as the customs or other authorized officer may deem advisable in order to assure the fulfilment of the provisions of these regulations.

PREVIOUS REGULATIONS SUPERSEDED

15. These regulations shall supersede all previous regulations adopted pursuant to the Convention between the United States of America and the Dominion of Canada for the preservation of the halibut fishery of the northern Pacific Ocean and Bering Sea, signed January 29, 1937, except as to offenses occurring prior to the approval of these regulations. These regulations shall be effective as to each succeeding year, with the dates herein specified changed accordingly, until superseded by subsequently approved regulations. Any determination made by the International Fisheries Commission pursuant to these regulations shall become effective immediately.

EDWARD W. ALLEN, Chairman
G. W. NICKERSON
MILTON C. JAMES
G. R. CLARK, Secretary

Approved by THE PRESIDENT OF THE UNITED STATES OF AMERICA,
April 6, 1951.

Approved by THE GOVERNOR GENERAL OF THE DOMINION OF CANADA,
by Order in Council of April 11, 1951, P.C. 1771.