SCR

31

COMMITTEE REPORT

HOUSE

6/17/81

97)

FURTHER:

Date: March 1 1982

Mr. Speaker:

The Committee on RESOURCES has had CSSCR 31(Res)

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

[ ] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[✓] replace with CS for CSSCR 31 (Resources) [X] same title [ ] new title

and recommends _____

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note

[ ] reports it back without recommendation

[ ] referred to the _____ Committee

MEMBERS SIGNING
DO PASS

Eric Sutcliffe

MEMBERS HAVING
OTHER RECOMMENDATIONS:

Eric Sutcliffe

CHAIRMAN

H 60 (Rev. 12/78)

1981 SOUTHEAST ALASKA - YAKUTAT TROLL FISHERIES MANAGEMENT PLAN

Alaska Department of Fish and Game
Southeast Region

This plan provides an overview of the approach that will be employed to manage the 1981 Southeast Alaska troll commercial salmon fishery. The plan is based upon the best available pre-season information. The management approach may need to be refined during the coming season as in-season information becomes available, however, the current plan should prove valuable for planning by fishermen and industry.

A summary of new and other important fishing regulations for the 1981 troll season are provided. Information describing the troll management system, the salmon resources involved, and the rationale for important regulatory changes are included and should prove of interest to all fishermen.

Management System

The Alaska ocean salmon troll fishery occurs in waters under both State and Federal jurisdictions, east of the longitude of Cape Suckling. Salmon trolling is permitted only in State waters of the Yakutat and Southeastern commercial fishing areas, which extends from Dixon Entrance in the south to Cape Suckling in the north. The Federal jurisdiction encompasses all waters of the 3-200 mile Fisheries Conservation Zone (FCZ) adjoining the Yakutat and Southeastern areas. All other waters of Alaska, including the FCZ, west of Cape Suckling are closed to commercial salmon trolling.

The same stocks of salmon are often harvested in both State and Federal waters. Often times an individual troller will fish in both areas on the same day. A cooperative approach is essential for good management of the Alaskan troll fishery.

The Alaska Board of Fisheries promulgates State fishing regulations while the Secretary of Commerce is the Federal counterpart for regulating fishing activities in the FCZ. The Board of Fisheries and the North Pacific Fisheries Management Council meet jointly to insure that compatible management is employed.

Management of the troll fishery, like other Alaskan commercial fisheries, is based upon policies and regulations promulgated by the Board of Fisheries. The authority to issue in-season emergency orders, to adjust fishing season and areas, is delegated through the Commissioner of the Alaska Department of Fish and Game to Department fisheries management biologists. This provides the necessary flexibility to regulate the troll fishery in-season in response to resource availability. A similar approach exists in the federal management system as the National Marine Fisheries Service has the authority to institute in-season regulatory changes.

taining current production levels will require new management and regulatory approaches.

Chinook Salmon Management

Current Southeast Alaska chinook salmon escapements are below minimum desired levels. Spawning escapement improvements have not been adequate in spite of significant restrictions imposed in the terminal area troll and net fisheries since the mid 1970's. There are currently no directed gillnet or seine fisheries on chinook salmon in Southeast Alaska. Sport fisheries throughout Southeast Alaska harvest approximately 15,000 to 17,000 chinook salmon each year; however, sport fisheries management will not be addressed in this plan.

Spring Trolling Closure

The major management approach for rebuilding Alaskan chinook stocks will be to reduce the harvest of the mature spawning run fish during the spring and early summer fishing period. The specific regulation is to close the Alaskan troll fishery from April 15 through May 14.

This closure corresponds to the time period when the majority of chinook spawners of Alaskan origin would be available to the troll fishery. It should allow increased numbers of spawners to move into the spawning streams or enter inside terminal areas where current fishing regulations provide a high degree of protection.

Guideline Harvest Level

To prevent increased fishing pressure on immature Alaskan stocks and stocks of non-Alaskan origin, as a result of the reduced fishing time early in the season, the seasonal chinook salmon harvest ceiling will be 285,000 fish. The harvest level reduction will provide for additional Alaskan chinook salmon escapement in future years to the extent that immature salmon are not harvested. During the 1980 season the harvest ceiling (i.e., optimum yield or OY) was expressed as a range from 286,000 to 320,000 fish.

Winter Chinook Salmon Fishery

A distinct fishing season has been established for the traditional winter king salmon fishery. The winter fishing season is from October 1 through April 14. To maintain the winter fishery the seasonal calculation for the allowable chinook salmon catch has been specified to commence at the start of the winter season (on October 1), and end at the end of the summer season (September 20) of the following year.

(3) During the first three or four weeks following the beginning of the summer fishery on May 15, the troll fishery chinook harvest will be monitored to develop an estimate of the weekly catch rate.

(4) Using the estimated weekly catch rate and adjusting for an expected chinook harvest reduction during the anticipated 10-day mid-season coho closure, an estimate will be made of the summer season chinook harvest expected by approximately September 10 assuming no further closures (see Figure 1 for a graphical presentation of this management strategy). If the summer troll harvest projected in this manner, combined with the winter season troll harvest and the expected net fishery incidental harvest exceeds the OY ceiling, then an appropriate mid to late June closure will be developed. (Depending on the winter troll harvest, mid-May to mid-June harvest rates and actual calendar dates, the closure might occur as late as the first week in July.)

A September 10 target date for projecting total seasonal catches, as opposed to the September 20 summer season closure date, is being employed to allow for a final season adjustment, if needed, based on actual July and August chinook salmon harvest rates.

Coho Salmon Management

One of the major problems confronting the effective management of the coho fishery is the recent shift of fishing effort from the inside districts to the outer coastal fishing grounds. This has increased the mixed stock nature of the coho fishery. Management problems have resulted because a major portion of the coho catch is occurring in the coastal and outer coastal fishing areas prior to the time that the coho return enters the inside fishing districts where run strength can be assessed. The shift of fishing effort has also changed the historical allocation balance of coho salmon between user groups.

Inside/Outside Coho Harvest Objective

The Board of Fisheries adopted as part of the "Southeast-Alaska-Yakutat Chinook and Coho Salmon Troll Fisheries Management Plan" the objective of returning inside district coho salmon troll catches to pre-1978 levels by 1984.

Ten Day Troll Closure

In order to curtail fishing pressure on coho salmon early in the season, before the actual run strength can be determined, and to allow more coho salmon to move further along their migration routes and to inside waters, a ten day closure of commercial trolling can be expected in late July or early August.

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The complicated and widespread nature of the troll fishery necessitates a closely coordinated management program. State management of the troll fishery is accomplished through a management team approach led by the Southeast Regional Finfish Coordinator; and, including a Regional Troll Biologist, five Area Management Biologists, and a Regional Biometrician. The names and locations of people to contact concerning Alaskan troll fishery management are shown at the end of the management plan.

Salmon Stocks

The troll fishery harvest primarily chinook and coho salmon stocks. Other species of salmon harvested by trollers are normally considered incidental to the taking of the primary target species and will not be addressed in this plan. The troll fishery normally accounts for over 90% of the chinook salmon and 50-75% of the coho salmon taken in the Southeast Alaska commercial fisheries.

Native chinook and coho salmon stocks occur throughout Southeast Alaska. Chinook salmon stocks spawn primarily in the large mainland rivers and their tributaries, the most important of which are the Alsek, Taku, Stikine, Unuk, and Chickamin rivers. Some 28 other river systems in Southeast are known to produce runs of chinook salmon. Southeast Alaska chinook salmon stocks are all "spring type" in that they enter the spawning streams during the spring and early summer months. Current information indicates that a majority of the chinook salmon harvested in the Alaska troll fishery are produced from spawning streams in Canada and the Pacific Northwest. Results of recent coded wire tagging experiments have identified among others, the upper Columbia River "brite" stock as a major contributor to the Alaskan troll fishery. Several age classes of mature spawners and immature chinook salmon are harvested by trollers during any one fishing season.

By contrast, coho salmon populations occur in most of the 2,000 plus streams in Southeast Alaska which host anadromous fish, and spawn during the fall and early winter months. Most of coho salmon harvested by trollers are of Alaskan origin, are of a single age class, and are caught in the year of spawning.

Resource Problems

Southeast Alaska chinook and coho salmon stocks are depressed from historical production levels. Chinook salmon stocks are, additionally, depressed coastwide. Annual commercial catches in recent years by all Southeast Alaska gear types have often exceeded 300,000 chinook and 1,000,000 coho salmon. These harvests, though substantial, are considerably lower than levels produced between 1930 and 1950.

Until quite recently only minor regulatory restrictions have been imposed in the Alaska troll fishery. However, the fishing power of the troll fleet has increased greatly in recent years, relative to the available salmon and a more restrictive regulations have become necessary. The rebuilding of chinook and coho salmon stocks or even main-

taining current production levels will require new management and regulatory approaches.

Chinook Salmon Management

Current Southeast Alaska chinook salmon escapements are below minimum desired levels. Spawning escapement improvements have not been adequate in spite of significant restrictions imposed in the terminal area troll and net fisheries since the mid 1970's. There are currently no directed gillnet or seine fisheries on chinook salmon in Southeast Alaska. Sport fisheries throughout Southeast Alaska harvest approximately 15,000 to 17,000 chinook salmon each year; however, sport fisheries management will not be addressed in this plan.

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A distinct fishing season has been established for the traditional winter king salmon fishery. The winter fishing season is from October 1 through April 14. To maintain the winter fishery the seasonal calculation for the allowable chinook salmon catch has been specified to commence at the start of the winter season (on October 1), and end at the end of the summer season (September 20) of the following year.

In-Season Management of Chinook Salmon Fishery

The 1981 troll fishery will be managed in-season to insure that the catch of chinook salmon does not exceed the established guideline harvest level of 285,000 fish. The harvest level applies to the chinook salmon catch by all commercial gear types. The harvest calculation will also include all chinook salmon harvested since the beginning of the winter season on October 1, 1980. Thus, when the summer season opens, on May 15, a portion of the allowable catch would have already been harvested.

The Southeast Alaska troll fishery targets almost exclusively on chinook salmon from October through June, and on both coho and chinook salmon during July, August, and September,. The relative degree to which vessels target on coho or chinook from July through September depends on the relative abundance and price of the two species, factors which vary within a season and from year to year.

In managing the troll fishery to keep the total Southeast Alaska commercial chinook salmon harvest from exceeding the OY harvest ceiling, it is desirable insofar as possible to avoid chinook salmon only closures during July and August when the major coho salmon harvest occurs. A chinook salmon only closure during July and August would result in undesirable hook and release mortalities on both mature and immature chinook salmon, hooked incidentally by the fleet while targeting on coho salmon.

Late June is considered an ideal time period to implement any needed major troll fishery restriction to maintain the seasonal harvest of chinook salmon at the desired guideline harvest level. This is because of the relatively low abundance and smaller size of coho salmon during late June and the capability of the troll fleet to fully harvest the available salmon beginning in early July.

To determine the need for a June troll fishery closure and the required length of any closure, the following procedures will be used consistent with the afore mentioned considerations.

(1) The chinook salmon harvest taken during the winter troll fishery from October 1 of the previous year through April 14 of the current year will be determined during the April 15 - May 14 closure.

(2) The winter troll harvest and a projected incidental net fishery harvest will be subtracted from the established OY harvest ceiling to determine the maximum allowable troll harvest during the summer season of May 15 - September 20. An incidental net fishery harvest of 20,000 chinook salmon will be used as a pre-season projection; however, as the net fishery season progresses the number may be raised or lowered depending on the actual incidental catch rates.

(3) During the first three or four weeks following the beginning of the summer fishery on May 15, the troll fishery chinook harvest will be monitored to develop an estimate of the weekly catch rate.

(4) Using the estimated weekly catch rate and adjusting for an expected chinook harvest reduction during the anticipated 10-day mid-season coho closure, an estimate will be made of the summer season chinook harvest expected by approximately September 10 assuming no further closures (see Figure 1 for a graphical presentation of this management strategy). If the summer troll harvest projected in this manner, combined with the winter season troll harvest and the expected net fishery incidental harvest exceeds the OY ceiling, then an appropriate mid to late June closure will be developed. (Depending on the winter troll harvest, mid-May to mid-June harvest rates and actual calendar dates, the closure might occur as late as the first week in July.)

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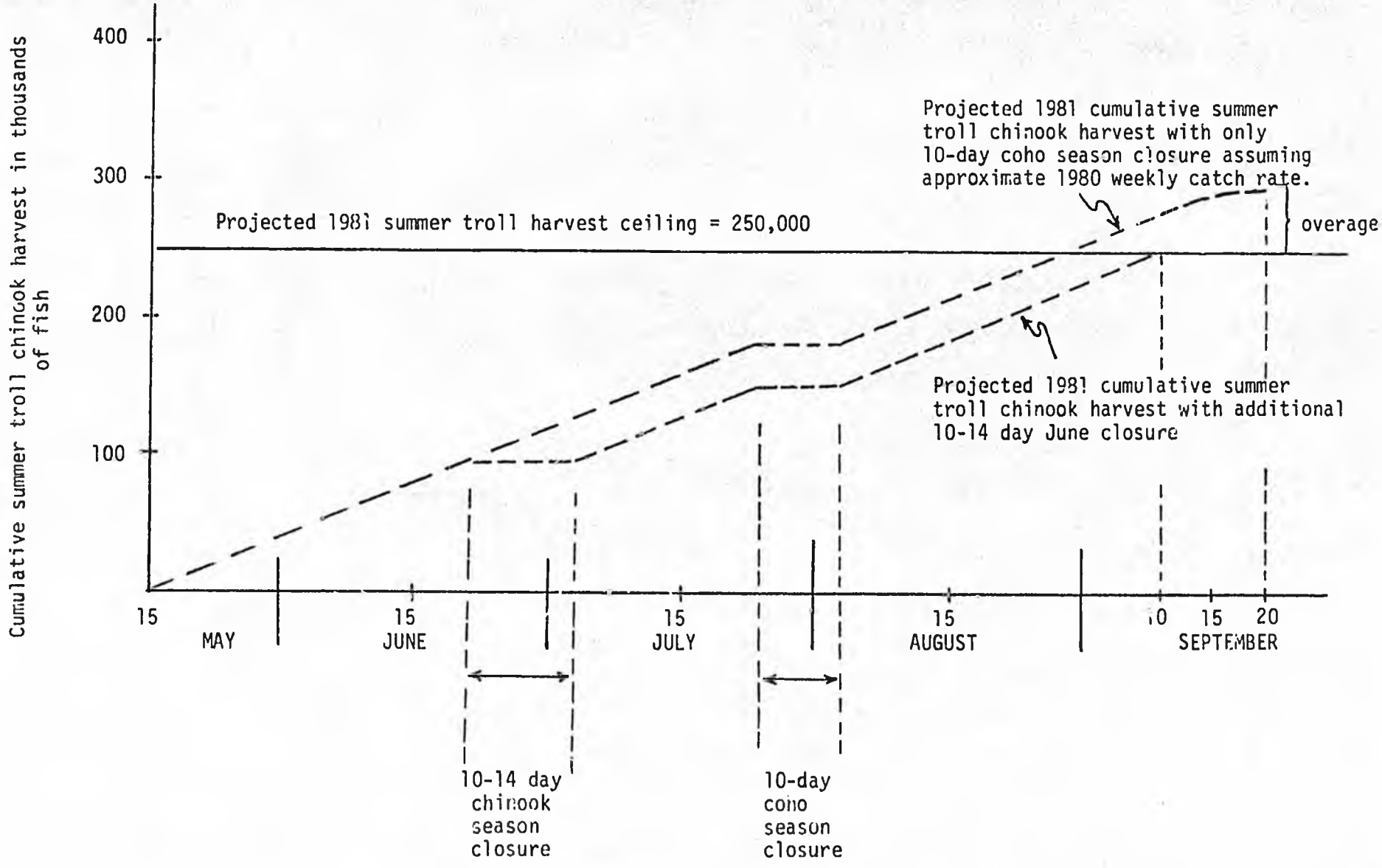

Figure 1. Graphical illustration of procedure for determining duration of June closure of Southeast Alaska troll fishery if needed for management of chinook salmon fishery (ADF&G-4/81).

This closure, as specified by the Board of Fisheries, will take place unless the coho run appears well above average in magnitude and the movement of coho to inshore waters appear to be good. The closure will apply to trolling for all species of salmon. If possible, the timing of the closure will overlap one of the 6 day closed periods specified under the 8 day on 6 day off fishing periods in northern areas.

Hand Troll Fishery

The hand troll fishery has undergone rapid change in recent years. Individual units of hand troll gear have increased in efficiency due to widespread conversion from the use of sport rods to hand gurdies and the development of a "full time" hand troll fleet. Additionally, the number of hand trollers has increased substantially. The combination of these factors has increased the total catching power of the hand troll fleet. This has resulted in an increased percentage of coho and chinook salmon being taken by hand trollers and a corresponding decrease in the proportion being taken by fishermen using other gear types.

The impending hand troll limited entry system will limit the number of hand trollers to 2,150 units of gear, a level which still has the potential fishing power to continue or even exaggerate conservation and allocation problems. The decision to issue a large number of permits was based on maintaining the traditional nature of the hand troll fishery and making it readily accessible to new entrants.

Hand Troll - Power Allocation Policy

Recognizing that the 2,150 maximum permit level would result in an expansion of efficiency in the hand troll fleet, the Board of Fisheries adopted a hand troll-power troll allocation policy in 1979 for 80% power troll and a 20% hand troll ratio for troll caught coho salmon. This policy will remain in effect for the 1981 season.

Hand Troll Management Outlook

To formalize the management of the hand troll fishery, the Board of Fisheries issued a policy statement during the January 1981 meeting, stating that "the hand troll fishery should be managed to preserve its unique historical character and to allow the larger number of people dependent on supplemental returns from hand trolling to continue to participate in the fishery." To achieve this goal while maintaining historical allocation balances between user groups the Board of Fisheries adopted more restrictive hand troll gear regulations. Coupled with the gear restrictions was the removal of time and area restrictions that were specific to handtrollers. The gear regultions (these were changed at a later meeting) specified an aggregate of four fishing rods or an aggregate of one hand troll gurdy and one fishing rod for the 1981 season.

Hand Troll Gear Regulations

The Board of Fisheries reconsidered the 1981 hand troll gear regulations at the spring shellfish meeting. A new management approach was adopted which included a relaxation of hand troll gear regulations that will be effective for the 1981 season. The new management approach specifies a two gurdy or four sport pole hand troll gear limitation and provides that the desired hand troll-power troll coho salmon allocation proportion be maintained by adjusting the hand troll fishing season. No more than one legal limit of hand troll gear (i.e., two troll gurdies or four sport poles) may be onboard any salmon hand troll vessel.

In-season Management of the Hand Troll Fishery

To maintain the desired allocation balance between troll gear types, the Board of Fisheries directed the Commercial Fisheries management staff to adjust hand troll fishing time. To achieve the desired hand troll harvest proportion, troll landing of coho salmon will be monitored closely through the early portions of the coho season. Any needed adjustment in hand troll fishing time will be accomplished by a hand troll fishing closure after mid-August.

To actually determine the duration of a mid-August hand troll closure if needed to achieve the 80:20 coho catch allocation as directed by the Board, the catch allocation through mid-August will be estimated from in-season catch records. (In past years the percentage allocation between hand and power troll gear by mid-August very closely approximated the total season percentage allocation.) Based on the projected percentage allocation through mid-August and the estimated relative proportion of the total troll coho catch which has already occurred, the duration of the hand troll closure will be calculated.

Hand Troll Fishing Areas

Area and time restrictions that were specific for hand troll gear have been removed. This means that hand trollers can fish seven days a week in district 1 for the entire season and in all coastal and offshore fishing areas. The 8 on and 6 off fishing periods will remain in effect in the northern areas, where they apply to both hand and power troll gear.

Summary

This management plan provides an overview of the approach that will be followed to manage the 1981 Alaskan troll salmon fishery. Management of the Alaskan troll fishery has undergone major changes in recent years in response to declining chinook and coho salmon populations. New man-

agement approaches are needed to rebuild chinook and coho salmon to former productive capabilities or to even maintain current production levels.

The major management approach for rebuilding Alaskan chinook salmon stocks will be to close the troll fishery from April 15 through May 14. This closure corresponds to the time period when a majority of chinook spawners of Alaskan origin would be available to the troll fishery. Coupled with the spring spawner closure will be a reduction of the chinook salmon harvest ceiling to 285,000. This compares to a harvest ceiling (i.e., optimum yield or OY) of 286,000 to 320,000 employed for the 1980 season. To achieve the desired harvest level, early season catch levels will be monitored closely and a closure of the troll fishery may be expected in late June to early July if seasonal catch projections indicated that the 285,000 harvest level, by all gear types will be exceeded. The spring spawner closure and the lower seasonal harvest level will also benefit chinook salmon stocks of non-Alaskan origin.

A ten day closure of the troll fishery during the coho season can be expected again during the 1981 season. This closure is designed to curtail fishing pressure on coho salmon early in the season, before the actual run strength can be determined, and to allow more coho salmon to enter the inside waters. The closure will be implemented in late July or early August, unless the coho run appears well above average in magnitude and the movement of coho to inshore waters appears to be good.

A new management approach will be followed for the 1981 hand troll fishery. The hand troll-power troll allocation policy adopted by the Board of Fisheries in 1979 will remain in effect for the 1981 season. The new management approach specifies a two gurdy or four sport pole hand troll gear limitation and provides that the desired hand troll-power troll coho allocation proportion will be maintained by adjusting the hand troll fishing season. To determine the need for any hand troll closure, coho salmon landings will be monitored closely through the early portion of the coho season to project seasonal harvest proportions. Any needed adjustment in hand troll fishing time will be accomplished by a hand troll fishing closure after mid-August.

Coupled with the new hand troll gear regulation was the removal of area and time restrictions that were specific to hand trollers.

This management plan presents only a portion of the troll regulations that will be in effect for the 1981 season. A complete listing of troll regulations is available in the 1981 Finfish Regulation booklet. A special recapitation of troll regulations entitled "1981 Alaska Commercial Salmon Trolling Regulation Guide" has been developed for the 1981 season and is available at local Fish and Game offices.

Department of Fish and Game Contacts

The following are Commercial Fisheries Division contacts regarding this management plan:

Dave Cantillon Region I Supervisor	230 S. Franklin St. Rm 301 Juneau
Gary Gunstrom Region I Research Supervisor	230 S. Franklin St. Rm 301 Juneau
Paul Larson Region I Finfish Coordinator	230 S. Franklin St. Rm 301 Juneau
Alan Davis Troll Management Biologist	Box 499 Sitka
Mel Seibel Region I Biometrician	230 S. Franklin St. Rm 301 Juneau
Don Ingledue Area Management Biologist	230 S. Franklin St. Rm 301 Juneau
William Bergmann Area Management Biologist	Box 667 Petersburg
Randy Timothy Assistant Area Biologist	Box 200 Wrangell
John Valentine Area Management Biologist	208 State Office Building Ketchikan
Bob DeJong Area Management Biologist	Box 499 Sitka
Ray Staska Area Management Biologist	Box 431 Haines

LARRY SMITH, TrollPACK

Proposed amendment to SCR 31

Page 2, line 6. Delete resolve clause, replace with:

BE IT RESOLVED by the Alaska State Legislature that it respectfully requests the Governor to contract with a private research organization of competent expertise to complete an investigation and evaluation of the research methodology and validity of the statistics used in fisheries resource management for the troll fishery in Southeast Alaska and to report those findings to the Legislature at the beginning of the First Session of the Thirteenth Legislature, along with proposals to rectify any shortcomings that are identified.

Justification: An objective analysis of the troll management program would benefit all parties. The Department of Fish and Game personnel have repeatedly stated they do not want the troll fleet and they are going to eliminate it. This is not the role of government and a look at Fish and Game procedures from the outside would be helpful. Also, in Senate Resource hearings with state and federal managers, in May, 1981, the people at Fish and Game were asked if they could prove any of their assumptions. The answer was "no". They were asked if these management plans were required The answer was "no". Managers say that all data is preliminary for 3 years.

Proposed amendment to CSSCR 31 (Res)

Submitted by Kellus Sewell

page 2, line 7 Delete: [TO DIRECT THE COMMISSIONER OF FISH AND GAME TO CONDUCT A COMPLETE INVESTIGATION]

Insert: to contract with a private research organization of competent expertise having prior working experience in the fisheries to complete an investigation

Page 2, line 10: After "Alaska", insert:

, carefully considering social, economic, and biological data; federal and state management objectives; adequacy of current and proposed appropriations relative to the value of the state's resource;

THE LEGISLATURE OF THE STATE OF ALASKA
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST

Bill/Resolution No. House CS For CS For Senate Concurrent Resolution #31 (Resources)
Title Southeastern Alaska Troll Fishery
Requested by House Resources Committee Date 3/25/82

II. FISCAL DETAIL

Agency Affected Department of Fish and Game
Program Category Affected Natural Resources and Environmental Conservation
BRU, Program, or Subprogram(s) Affected Div. of Commercial Fisheries
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Fund Source)						

POSITIONS

FULL TIME						
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instructions, Section III)

No fiscal impact associated with investigation, and evaluation of, research methodology and validity of statistics.

Any costs associated with action required as a result of the above will be included in proposal to the Legislature.

IV. DATE March 25, 1982 PREPARED BY John T. Stewart
AGENCY Department of Fish and Game
Original: Legislative Finance Bob Grogan PHONE 465-4120
cc: Budget and Management Ron Lehr
Prime Sponsor (First Legislator Named) Resource Committee
Office of the Governor Keith Specking

33-001 (Rev. 12/80)

Offered: 6/10/81
Original sponsor: Resources Committee Referred: Rules

IN THE SENATE BY THE RESOURCES COMMITTEE

CS FOR SENATE CONCURRENT RESOLUTION NO. 31 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWELFTH LEGISLATURE - FIRST SESSION

Relating to the Southeastern Alaska troll fishery.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS salmon trolling constitutes a major portion of the economic activity of Southeastern Alaska; and

WHEREAS the Board of Fisheries determines the time, place, and manner that trollers may take salmon in Alaska waters based on best available biological data furnished by the Alaska Department of Fish and Game; and

WHEREAS the U.S. Secretary of Commerce determines the time, place, and manner that trollers may take salmon in the Fisheries Conservation Zone based on best available biological data furnished by the Alaska Department of Fish and Game; and

WHEREAS the biological data furnished by the Department of Fish and Game should determine the number of fish that may be harvested in any one year without diminishing the number of fish that will be available to harvest in future years; and

WHEREAS the Department of Fish and Game ~~does not~~ may not furnish data on the methods it uses to collect the biological data it furnishes; and

WHEREAS complete data regarding salmon returns and salmon runs is not available; there is no single compendium of what data is available and what is missing; some of the data is interpolated, and these interpolations are not always clearly identified; and

WHEREAS the regulatory measures of the Board of Fisheries are imposed based on incomplete biological data; and

WHEREAS the regulatory measures of the Board of Fisheries that are not

based on complete data may increase fishing pressure on [certain] stocks and may be adverse to the conservation of the resource; and

WHEREAS the regulatory measures of the Board of Fisheries are imposed without using [adequate] information regarding, or consideration of, the effects of regulatory measures used in the past;

BE IT RESOLVED by the Alaska State Legislature that it respectfully requests the governor to direct the commissioner of fish and game to conduct a complete investigation, and evaluation of, the research methodology and validity of the statistics used in fisheries resource management for the troll fishery in Southeastern Alaska and to report his findings to the legislature at the beginning of the ~~Second~~ Session of the ~~Twelfth~~ Legislature, along with a proposal to rectify any shortcomings that are identified.

03-01-82

Offered: 6/10/81
Original sponsor: Resources Committee Referred: Rules

IN THE SENATE BY THE RESOURCES COMMITTEE

CS FOR SENATE CONCURRENT RESOLUTION NO. 31 (Resources)

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WHEREAS the U.S. Secretary of Commerce determines the time, place, and manner that trollers may take salmon in the Fisheries Conservation Zone based on the best available biological data furnished by the Alaska Department of Fish and Game; and — Vaska

WHEREAS the biological data furnished by the Department of Fish and Game should determine the number of fish that may be harvested in any one year without diminishing the number of fish that will be available to harvest in future years; and

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WHEREAS the regulatory measures of the Board of Fisheries that are not

based on complete data may increase fishing pressure on ~~certain~~ specific stocks and may be adverse to the conservation of the resource; and — Vaska

WHEREAS the regulatory measures of the Board of Fisheries are imposed without using ~~adequate~~ complete information regarding, or consideration of, the effects of regulatory measures used in the past; — Vaska

BE IT RESOLVED by the Alaska State Legislature that it respectfully requests the governor to direct the commissioner of fish and game to conduct a complete investigation, and evaluation of, the research methodology and validity of the statistics used in fisheries resource management for the troll fishery in Southeastern Alaska and to report his findings to the legislature at the beginning of the ~~Second~~ First Session of the ~~Twelfth~~ Thirteenth Legislature, along with a proposal to rectify any shortcomings that are identified. — Halford

Moved by Grussendorf

REPORT TO THE BOARD OF FISHERIES

1981 SOUTHEAST ALASKA SALMON TROLL FISHERY

By:

Region I Staff

Southeast Region
Alaska Department of Fish and Game
Commercial Fisheries Division
November 1981

TABLE OF CONTENTS

INTRODUCTION

The troll fishery in Southeast Alaska occurs in State and Federal waters from Cape Suckling southeast to Dixon Entrance (figure 1). Target species are primarily chinook and coho salmon although an increasing number of fishermen also target on pink salmon. Catches of chinook for the period 1970-1980 have averaged 301,000. The 1981 chinook catch by the troll fishery was 247,000. Catches of coho for the period 1970-1980 averaged 619,000. The 1981 coho catch was 861,000. Catches of other species by the troll fishery in 1981 included 576,000 pinks, 9,000 chums and 7,600 sockeye. Annual salmon catches by the troll fishery since 1970 are shown in Table 1. Fishing periods and period catches of chinook and coho for the 1981 seasons are shown in Table 2.

Historically trollers fished coastal and inshore waters but in the last 20 years a trend of increased fishing effort in offshore and coastal waters has occurred. Seventy-two percent of the 1981 troll catch of chinook was taken in coastal State and offshore Federal waters with 26% of the catch reportedly taken in offshore Federal waters (FCZ) only.

Troll gear, which annually harvests approximately 95% of the total all-gear chinook catch and 65% of the all-gear coho catch, is separated into two gear types; power and hand troll gear. The Alaska Commercial Fisheries Entry Commission currently issues 973 power troll permits and 2,150 hand troll permits. Preliminary estimates of gear actually fished during the 1981 season include approximately 850 power troll and 1,150 hand troll units. Hand troll gear permit holders accounted for approximately 13% of the chinook troll catch and 21% of the coho troll catch in 1981.

In recent years, several changes have occurred in the troll fishery that have affected management decisions and consequently the conduct of the fishery.

First, chinook salmon production from Southeast Alaska river systems has remained depressed as a result of decreased spawning escapements. In spite of severe curtailment of terminal area net fisheries, inside troll fisheries and sport fisheries beginning in the mid-1970's, escapements did not initially increase as increased effort by the troll fishery apparently offset inside and terminal area fishery restrictions. In 1980 and 1981, when more restrictive regulations were also extended to the troll fishery, some improvement in escapements occurred although the improvement was generally limited to two major systems, the Taku and Stikine Rivers. Escapements to many of the non-Alaskan chinook systems contributing to the S.E. Alaska troll fishery are also currently below optimum levels.

Second, coho escapements and production have generally declined although not as severely as chinook.

Third, increases in troll fishing effort have occurred. Increased numbers of participants during the 1970's as well as increased actual fishing power due to vessel and gear improvement produced this overall increase in fishing effort.

Fourth, recent restrictions placed on fishing time, gear and areas have resulted in more intense fishing effort during open periods.

Fifth, fishing restrictions, which were initially applied to terminal and inshore areas for the purpose of increasing escapements, transferred more fishing effort to coastal and offshore areas. As more fishermen became aware of better availability of fish in outer coastal areas, this outward shift of effort increased further. This further compounded mixed stock management problems. Harvests remained high in these areas while catches in inside fisheries and escapements of chinook and coho declined.

1981 Season Summary

Prior to the 1981 troll season, several regulatory changes were adopted by the Alaska Board of Fisheries and the North Pacific Fisheries Management Council. The two regulations that most influenced management strategy of the Department in 1981 were the reduction of the optimum yield or guideline harvest range for chinook and specification of the policy to curtail the outside coho catch to allow more fish to reach corridor and terminal areas.

The commercial chinook harvest guidelines established by the Board and Council for the 1981 season differed in that the range specified by the Board required approximately a 10% reduction over the 1980 range of 286,000 to 320,000 while the range specified by the Council required a 15% reduction. In numbers of fish, the Board's range was 272,000 to

285,000 [1/] and the Council range was 243,000 to 272,000. Since both of these ranges were significantly below recent years' chinook troll catches, but applied to both net and troll gear, the harvest ceilings represented a major step toward rebuilding Alaska's chinook stocks through providing increased escapements.

Winter and summer seasons were established for purposes of maintaining the traditional winter troll fishery and to facilitate enumeration of catches. The winter troll season was established as October 1 through April 14. To provide maximum benefit to depressed Alaskan stocks of chinooks the Board also specified a closure of the troll fishery to occur from April 15 to May 14. The summer season was established as May 15 thorugh September 20.

A major problem complicating effective coho troll fishery management is the magnitude of catch that occurs in outer areas prior to the time the stocks are segregated and run strength can be assessed. A progressively larger segment of the annual catch has been taken in recent years from coastal and offshore areas as the fish migrate from the offshore feeding areas to the terminal areas and spawning streams. This phenomenon has resulted in more restrictive measures imposed on all gears in the terminal areas to insure escapement which has in turn changed the historical allocation balance of coho salmon between user groups as shown

1/ A harvest guideline of 272,000 to 288,000 initially considered by the Board at the January 1981 meeting, was shown in the 1981 Regulation booklet. However, the final harvest guideline established by the Board at the March 1981 meeting was 272,000 to 285,000.

in Figure 2 and Table 3. The Board adopted a policy in 1981 to return these inside district troll coho catches to pre-1978 levels by 1984, by specifying a 10-day troll closure to allow more coho to move further along their migration routes and to inside waters.

In-season Management Strategy

The 1981 troll fishery was managed to insure that the chinook salmon catch did not exceed the guideline harvest level established by the Board. The guideline harvest level of 285,000 fish included catches by all commercial gear types. This was the second year that a guideline harvest range was established to limit the total commercial harvest of chinook salmon in Southeast Alaska fisheries.

The Department's management plan included provisions for implementing a closure during the latter part of June, if necessary, to extend the chinook season through the end of August. This was to insure that the guideline harvest level was not achieved prior to mid-August, thereby increasing effort on coho stocks and a higher mortality on chinook hooked and released in the resulting coho only fishery. By June 15 it was apparent that the catch levels to that date were above 3 of the 4 most recent years' catches (Figure 3). This indicated that if recent years' catch patterns occurred throughout the rest of the season the harvest level would have been achieved by late July. The troll fishery was then closed for 9 days, June 26 through July 5.

The higher than normal early season catch level was due to a combination of several factors: (1) unusually good weather which allowed access to prime fishing grounds for all of the 42 days between May 15 and June 25, and (2) increased early season effort in numbers of vessels fishing due to predicted poor returns of chinook in Washington and Oregon and corresponding closures, and the reduction of the guideline harvest level in Alaska.

Following the reopening of the troll fishery on July 5, chinook and coho catches were monitored on a weekly basis. Catch projections based on fish ticket accounting systems and port sampling of deliveries were used to estimate fishery performance for chinook and coho.

A system was devised whereby normal fish ticket accounting and early landing reports from major ports were combined. This system provided weekly fishery performance estimates. These weekly estimates were then compared to the 77-80 fishery performance weekly averages and projections were made on chinook total catch and coho run strength.

By the first week of August it appeared that the chinook harvest was comparable to previous years and catch projections indicated that the chinook catch would probably reach the guideline harvest level by the first week of September. Coho returns to inside areas, as determined from inshore and terminal area catches, were poor and below the 10 year average while coho catches by the troll fishery in outer areas were relatively strong compared to recent years (Figure 4).

The troll fishery was closed again on August 10 for 10 days for the purpose of allowing more coho to reach inside areas. The National Marine Fisheries Service issued a similar regulation for the FCZ, but did not reopen the FCZ to trolling for the remainder of the 1981 season because of projections that the Council OY ceiling of 272,000 chinook would be met and significant mortality due to hook and release of chinook would occur during any coho directed fishery.

During the period from August 20 when the fishery reopened to September 3, catches of chinook and coho were monitored closely because catches appeared to be approaching the harvest ceiling for chinook and several districts continued to exhibit poor coho catches.

Historically, effort levels in numbers of vessels targeting on chinook in coastal waters have produced substantial catches during late August and early September. Numbers of vessels continuing to fish during this time period, in 1981, were greater than normal and the Department projected that the guideline harvest level would be achieved by the first week of September. The troll fishery was closed to the taking of chinook salmon in all areas and certain districts were also closed to trolling entirely for coho conservation on September 4. Districts closed to coho fishing to protect weak coho runs were 5, 6, 7, 8, 10, 15 and portions of 9 and 12.

Between September 4 and 10 concerted efforts were made to collect all fish tickets from remote buyers and landing ports to tabulate the chinook catch. By September 10 preliminary figures indicated that the catches of chinook were at the low end of the Board's guideline harvest range of 272,000-285,000. In order to prevent hooking and release mortality of chinook salmon during the ongoing coho fishery, the troll fishery was reopened to the taking of chinook in those areas opened to coho fishing. The fishery remained opened in those areas until the close of the summer season on September 20.

In addition to the foregoing description of actions taken by the Department during the 1981 troll season in Southeast Alaska, the following management measures were also taken.

The waters of District 9 in the near proximity to Little Port Walter and Big Port Walter were not closed on September 4 to allow harvest of coho returns resulting from a surplus of hatchery and lake stocking experiments.

In the Yakutat area, the weekly fishing period for trolling specified in the regulations was extended to seven days for the area between Dangerous River and Sitkagi Bluff in August when it appeared coho returns to the Situk River were near average and catches by troll gear were minimal. Following the opening of the area to 7 day per week fishing by troll gear a period of mild weather and reductions in fishing areas elsewhere in Southeast Alaska resulted in increased effort in the Yakutat area to more than triple from 6 to 20 power troll vessels and 18 hand troll vessels. Coho availability in the area was good and catches by power

troll vessels of 150-200 coho per day were reported. Trolling was returned to the weekly fishing period specified in the regulations on August 31 when the high effort levels and good catches began to affect inriver net fishery management before coho run strengths could be assessed.

Evaluation of In-season Management Strategy

The primary management goals in 1981 for the troll fishery were: (1) Increase chinook escapement and reverse the trend in declining production from systems in Southeast Alaska; (2) provide for a harvest of chinook by all gear types within the range established by the Board, and (3) reverse the trend of declining escapements of coho and increase the numbers of coho reaching inside areas while providing for a harvest level determined by in-season assessment of run strength.

Preliminary estimates of the total chinook catch by all gear, including that portion of the winter troll fishery from October 1 to December 31, 1980, indicate that a harvest of approximately 268,100 fish was achieved. This includes an estimated 19,500 fish taken incidentally in net and trap fisheries as shown in Table 4. It appears, therefore, that the final catch will probably be near the lower end of the Board harvest guideline range and the upper end of the Council range (Figure 5).

Based on catch projections made in late August and early September, a slightly larger total season chinook harvest near the mid to upper end of the Board range of 272,000 to 285,000 had been expected. The lower catch apparently occurred due to several factors, including differences between preliminary in-season catch estimates and final catches tabulated by computer from fish tickets, and lower than expected late season catch rates resulting from reduced availability of chinook combined with a shift of effort to the relatively strong coho runs in some areas. Other factors included the impact of the FCZ being closed from August 10 through the remaining part of the season and an apparent reduction in the number of boats holding and freezing fish during the season to be sold at the end of the season.

Chinook escapements to two of the three major river systems in Southeast Alaska were increased in 1981 (Table 5). The major Taku River tributaries, the Nakina River and the Nahlin River, showed substantial improvement. The major Stikine River tributaries, the Tahltan River and Little Tahltan River, also showed significant improvement. Escapements to several other lesser producing chinook salmon systems including the Chilkat River and the Farragut Bay streams appeared to have improved over recent years.

In the southern portion of Southeast Alaska, escapements to the medium sized streams in Behm Canal were mixed. The Blossom River and Keta River escapements were approximately twice the 1980 escapements, however, the Unuk River escapement was less than 1980 and the Chikamin River escapement showed little improvement. Escapements to the Behm Canal systems were all substantially below minimum escapement goals.

It appears that, for northern Southeast Alaska streams, the fishing restrictions between April 15 and May 14 contributed to the increased escapements. In the southern districts, which have slightly later run timing, the closure did not contribute significantly to increasing the escapements. The Department has submitted proposals to delay the fishing season opening in portions of District 1. These proposals, if adopted, should increase the chinook escapements to southern Southeast streams.

Coho escapements in 1981 appear to have generally improved over recent years, however, surveys are still being conducted and a more complete assessment will be provided at the Board meeting. Exceptions to these improvements were in the middle districts (5-10) where some systems declined in escapements. The northern and southern systems showed generally good escapements. Primary reasons for the increases in coho escapements were the August 10-20 troll closures and the late season net gear restrictions.

Special Problems

The periodic closures during the 1981 season reportedly caused some crowding of boats into certain areas. Many skippers reported that they could not move into distant areas because of the short time during openings. The result was concentrations of 100-200 vessels in several coastal areas. Additionally, problems were reported in landing of the catch when all of these boats came to port following a closure. Difficulties in unloading, re-icing and re-supplying were a direct result of

overcrowding. Processors reported difficulty in maintaining production quality when large volumes of fish were unloaded at the start of a closed period. Some problems also arose during the time beginning August 20 when the federally managed Fishery Conservative Zone remained closed to fishing while state waters were open. Many fishermen were confused regarding the exact delineation of boundaries for the FCZ area.

Observations on Marked or Scarred Fish

A number of chinook and coho caught in the 198 troll fishery were observed to be scarred. The Department will present a short report with visual aids on this subject at the Board and Council joint session in January.

The incidence of these external scars was about 1% for chinook and 3% for coho overall, although there were incidences as high as 10% for some deliveries sampled. The scars appear to be caused from encounters with predators and/or fishing gear, possibly nets, of unknown origin. The Department and National Marine Fisheries Service is continuing to investigate the possible sources of these scars.

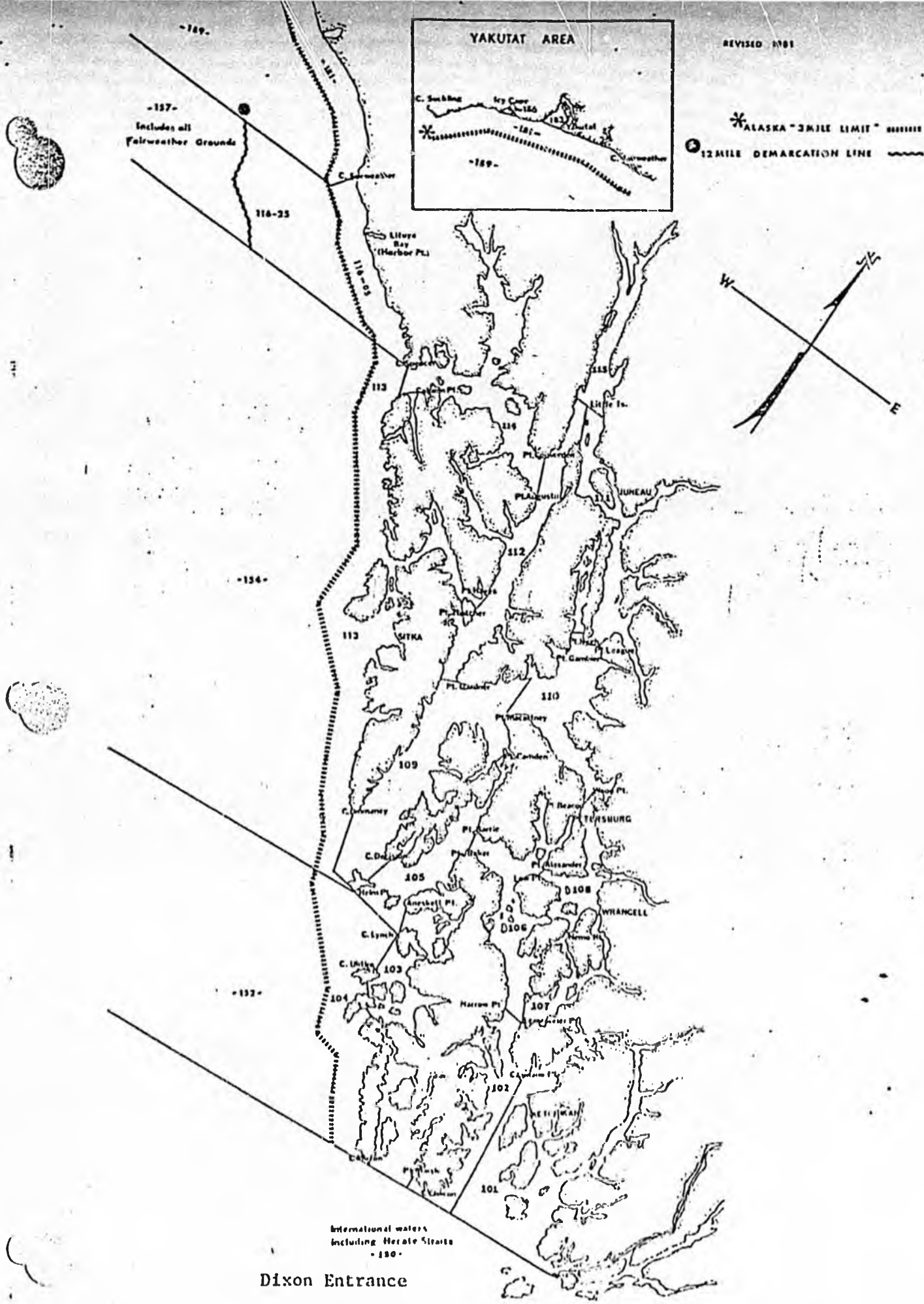

Figure 1 . Southeast Alaska Troll Fishery Statistical Areas

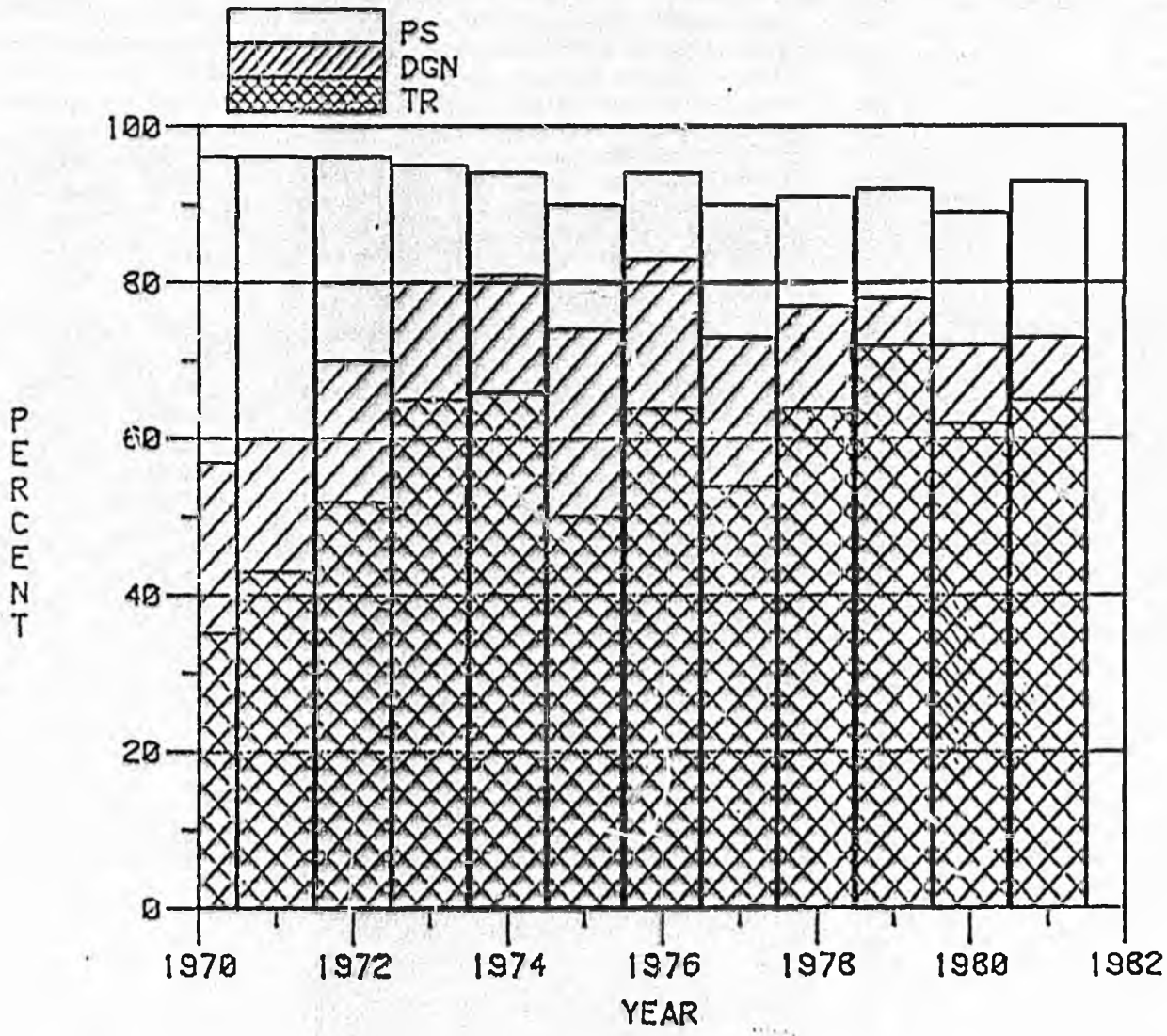

FIGURE 2. PERCENT OF TOTAL SOUTHEAST ALASKA REGION COHO SALMON HARVEST TAKEN BY PURSE SEINE(PS), DRIFT GILLNET(DGN) AND TROLL(TR) GEAR, 1970-81 (ADF&G)

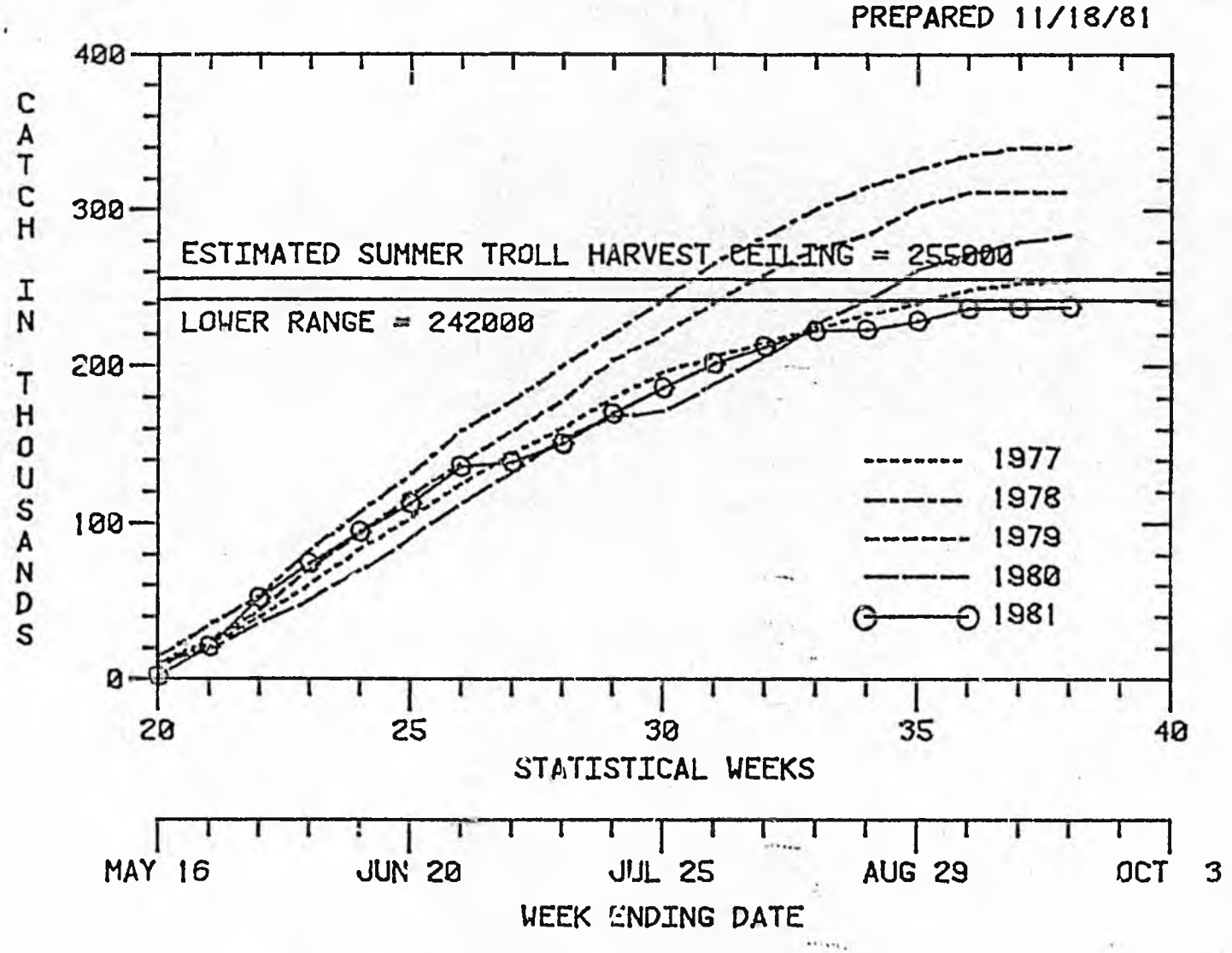

FIGURE 3. SOUTHEAST ALASKA TROLL FISHERY CUMULATIVE CHINOOK SALMON HARVEST BY WEEK BEGINNING MID-MAY, 1977-81 (ADF&G). (1981 DATA PRELIMINARY)

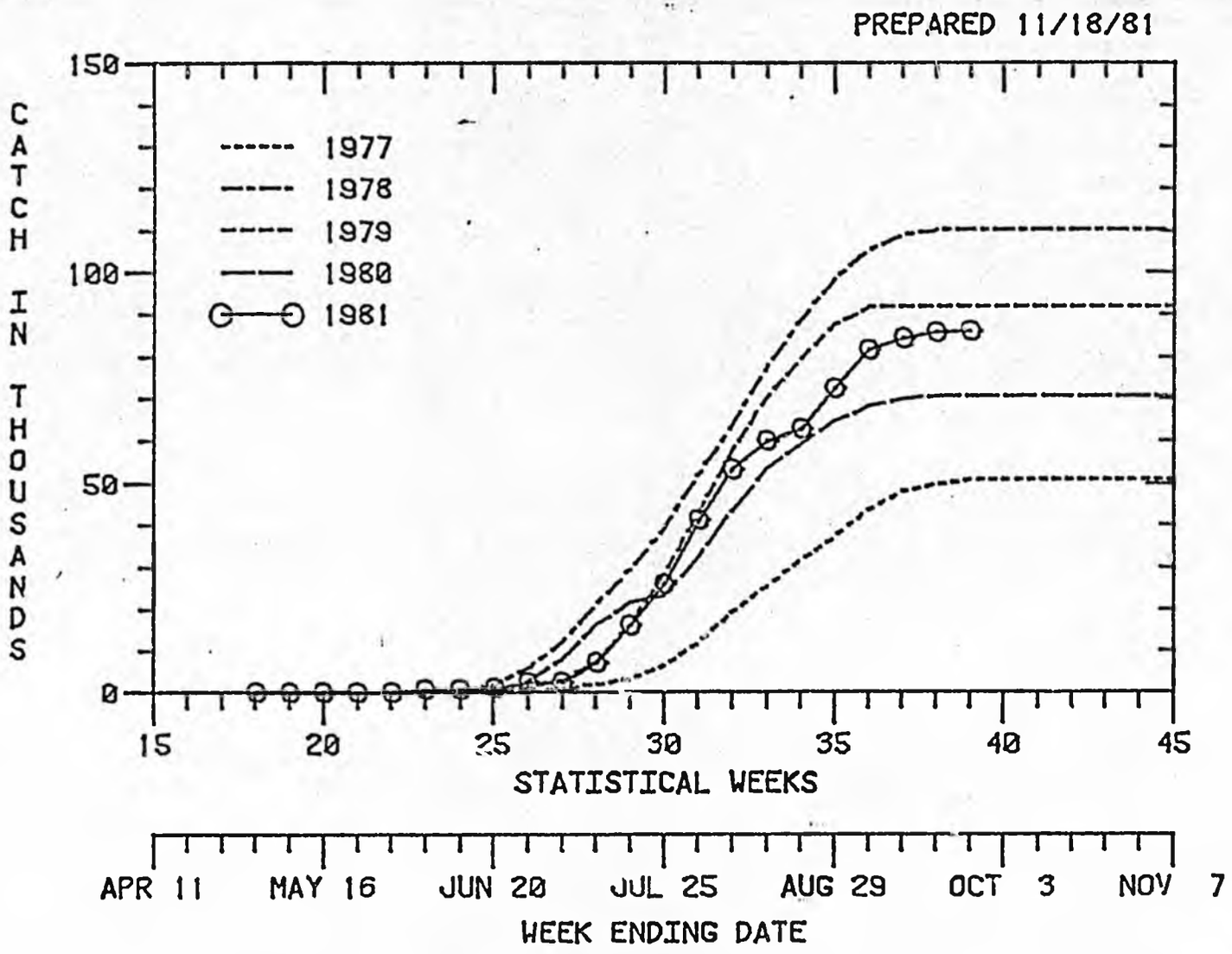

FIGURE 4. SOUTHEAST ALASKA TROLL FISHERY CUMULATIVE COHO SALMON HARVEST BY WEEK BEGINNING MID-MAY, 1977-81 (ADF&G). (1981 DATA PRELIMINARY)

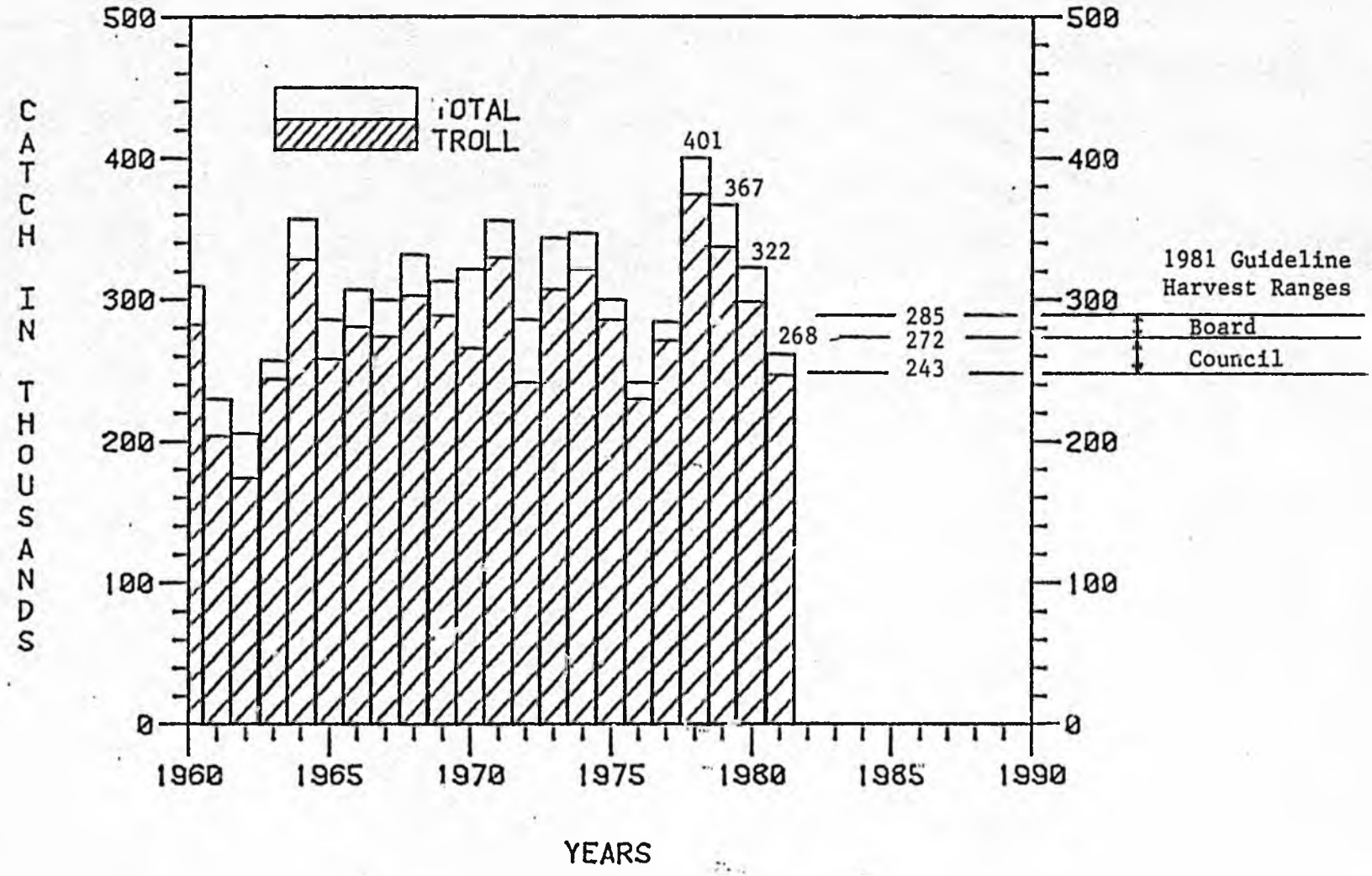

FIGURE 5. SOUTHEAST ALASKA COMMERCIAL CHINOOK SALMON CATCHES, 1960-81

Table 1 . Southeast Alaska region annual commercial salmon catches in numbers by species, 1970 to present (ADF&G 11/12/81).

Gear troll

Year	Chinook	Coho	Sockeye	Pink	Chum	Total
1970	305431	267763	477	70076	2804	646551
1971	333738	391569	936	104633	7672	838548
1972	242095	791668	1068	166853	11680	1213364
1973	307815	540104	1222	134585	10466	994192
1974	322208	846620	2606	263603	13819	1448856
1975	287348	214254	1103	77207	2825	582737
1976	231282	524992	1274	193777	4635	955960
1977	271777	506927	5701	281286	11617	1077308
1978	375624	1102063	2804	617817	26211	2124522
1979	338219	918596	6455	629192	24703	1917165
1980	299930	706521	2902	267465	12213	1289031
Average 1970 to present	301406	619189	2413	255136	11695	1189839
1981(Prelim.)	247000	860900	7600	576000	9000	1700500

Footnotes: (1) Most recent years data should be considered preliminary.

Table 2 . Preliminary 1981 Southeast Alaska Troll Fishery
Chinook and Coho Salmon Catches by Fishing Period
(ADF&G 11/81)

Closed Periods (Days)	Open Periods (Days)	Chinook	Coho
Winter Season			
	Oct. 1 - Dec. 31, 1980	1,600	
	Jan. 1 - April 14, 1981	8,000	
Winter Season Subtotals		9,600	
Summer Season			
April 15 - May 14 (30)			
	May 15 - June 25 (41)	138,900	23,400
June 26 - July 4 (9)			
	July 5 - Aug. 9 (36)	83,400	577,500
Aug. 10 - 19 (10)[1]			
	Aug. 20 - Sept. 3 (15)	15,000	240,800
Sept. 4 - 12 (9)[2]			
	Sept. 13 - 20 (8)	1,700	19,200
Sept. 21 - 30 (10)			
Summer Season Subtotals (68)	(100)	239,000	860,900
Season Totals[3]		248,600	860,900

Notes: [1] Federal FCZ waters remained closed to fishing after Aug. 10.

[2] The Sept. 4-12 closure included all districts for chinook salmon and districts 5-10, and portions of 12 and 15 for coho salmon. These coho closures remained in effect to the end of the coho season on Sept. 20.

[3] Troll fishery harvest of other species included 576,000 pinks, 9,000 chums, and 8,000 sockeye.

Table 3 . Southeast Alaska region annual commercial salmon catches by gear in numbers and (percent), 1970 to present (ADF&G 11/04/81).

Species Coho

Year	Seine	Drift Gillnet	Set Gillnet	Troll	Trap & Misc.	Total
1970	294624 (39)	166413 (22)	30279 (4)	267763 (35)	2510 (0)	761589 (100)
1971	326423 (36)	159240 (17)	37683 (4)	391569 (43)	12 (0)	914927 (100)
1972	390643 (26)	275527 (18)	46298 (3)	791668 (52)	4688 (0)	1508824 (100)
1973	129593 (15)	124369 (15)	41776 (5)	540104 (65)	557 (0)	836399 (100)
1974	166687 (13)	186583 (15)	77556 (6)	846620 (66)	1011 (0)	1278457 (100)
1975	70201 (16)	102237 (24)	37403 (9)	214254 (50)	3262 (1)	427357 (100)
1976	87613 (11)	156223 (19)	51744 (6)	524992 (64)	3089 (0)	823661 (100)
1977	160519 (17)	183702 (19)	92228 (10)	506927 (54)	1374 (0)	944750 (100)
1978	245074 (14)	223341 (13)	139500 (8)	1102066 (64)	4527 (0)	1714508 (100)
1979	177010 (14)	83214 (6)	95885 (7)	918596 (72)	9608 (1)	1284313 (100)
1980	194268 (17)	112608 (10)	119571 (11)	706521 (62)	2800 (0)	1135768 (100)
Average 1970 to present	203878 (19)	161223 (15)	69993 (7)	619189 (59)	3040 (0)	1057323
1981(Prelim.)	266000(20)	99700(8)	91000(7)	860900(65)	4200(0)	1321800

Footnotes: (1) Average percent harvest by gear type calculated from average harvest in numbers by gear type.
(2) Percents may not sum exactly to 100 due to rounding.
(3) Seine and drift gillnet catches inc. salmon harvested by Annette Island Reserve fishe

Table 4 . Preliminary 1981 Southeast Alaska Commercial Chinook Salmon Catches by Gear (ADF&G 11/81)

Fishery	Preliminary Catch
Troll Fishery	248,600 1/
Seine Fishery (incidental harvest)	9,700
Gillnet Fishery (incidental harvest)	8,800
Trap and miscellaneous	1,000
Est. Total Commercial Harvest	268,100

1/ Includes approximately 1,600 fish harvested during that portion of the winter season from Oct. 1 through Dec. 31, 1980.

Table 5. Preliminary estimates of 1981 chinook salmon escapements to selected Southeast Alaska systems (ADF&G 11/81).

Note: Over 30 chinook salmon producing systems exist in Southeast Alaska. However, due to poor surveying conditions in many systems only those included below are currently surveyed in a consistent manner each year to provide a relative measure or index of total chinook salmon escapements to Southeast Alaska systems.

System - Tributary	Type of Survey[1]	Escapements			Minimum Escapement Goal[2]
		Ave. 1975-80	1980	1981	
Major Systems (3 Total)					
Taku - Nakina	(1)	2,810	4,500	5,100	9,000
- Nahini	(1)	780	1,530	2,940	2,500
Taku Subtotal		3,590	6,030	8,040	11,500
Stikine - Little Tahltan	(1)	620	2,140	3,330	(2,100)
Alsek - Kluckshu	(2)	2,130	1,400	2,110	3,200
Medium Systems (8 Total)					
Situk	(2)	1,490	1,120	810	(5,100)
Behm Canal Systems					
Keta	(1)	250	190	330	500
Blossum	(1)	100	90	160	800
Chickamin	(1)	220	260	280	900
Unuk	(1)	800	1,050	730	1,800
Behm Canal Subtotals		1,370	1,590	1,500	4,000
Minor Systems (22 Total)					
King Salmon	(1)	76	70	100	200

[1] Type of Survey Codes (1) - Helicopter peak spawning count (primary method).
(2) - Weir total count.

[2] These minimum escapement goals, established in 1980, represent maximum escapements observed since the 1950's (except for the Situk) when Southeast Alaska chinook stocks were seriously depressed. Revision of goals for some systems, in particular the Situk and Stikine, is expected pending further data analysis.