

MANAGEMENT PLAN FOR CHINOOK AND COHO SALMON IN THE
SOUTHEAST ALASKA/YAKUTAT SUMMER TROLL FISHERY, 1991



Regional Information Report No. 1J91-11

Alaska Department of Fish and Game
Commercial Fisheries Division
Southeast Region
Juneau, Alaska

May 1991

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INTRODUCTION

The Southeast Alaska troll fishery occurs in State of Alaska and Federal Exclusive Economic Zone (EEZ) waters east of Cape Suckling. The fishery is managed according to regulations promulgated by the Alaska Board of Fisheries (Board), the North Pacific Fishery Management Council (Council) and the U.S./Canada Pacific Salmon Commission. In-season management is conducted by the Alaska Department of Fish and Game (Department) using emergency order authority. This plan discusses the management objectives and methods used to achieve the policies and goals set for the troll fishery.

The plan covers only commercial troll chinook and coho salmon. Other species caught and retained by trollers are considered incidental although trollers are increasingly targeting upon them in localized areas. The plan also does not cover openings in Special Hatchery Access areas.

1991 SUMMER SEASON DATES

1. Special June Hatchery Chinook Salmon Access Seasons:

June 5 through 7 (if the catch during this period does not exceed 25,000, and the total catch during June is projected to be less than 40,000 non-Alaskan hatchery produced chinook salmon, a second opening may begin on June 20 for 2 to 4 days).

2. Experimental Troll Fisheries:

May 28 through June 29.

3. General Summer Season:

July 1 through September 20. Once the chinook harvest ceiling is reached, chinook cannot be retained.

MANAGEMENT APPROACH

Chinook Salmon

The majority of the chinook salmon presently harvested in the Alaska troll fishery are produced from wild runs and hatcheries in Canada and the Pacific Northwest. Thus, the Southeast Alaska chinook salmon harvest is managed on an annual, all-gear catch ceiling established by the United States and Canada through the Pacific Salmon Commission (PSC). Similar catch ceilings exist for other coastal chinook salmon fisheries in Canada. In addition to the catch ceiling, provisions of the Pacific Salmon Treaty (PST) administered by the PSC, provide for an additional harvest of chinook salmon that have been produced in Alaskan hatcheries (addon). The addon is equal to the total number of hatchery chinook caught, minus the pre-Treaty production of chinook salmon (5,000), minus a risk adjustment factor (6,000 fish in 1991).

A 15-year natural chinook stock rebuilding program for Southeast Alaska began in 1981. The escapement goal for index streams in Southeast Alaska is 64,000 chinook salmon.

Management Objectives

1. Achieve the allowable chinook salmon harvest established by the PST.
2. Achieve the maximum harvest of Alaska hatchery produced chinook salmon (hatchery add on).
3. Continue the Southeast Alaska and coastwide natural chinook rebuilding programs.
4. Achieve catch allocations among user groups as mandated by the Board.
5. Minimize the incidental mortality of chinook salmon.

Management Methods

Time and area closures are the primary management measures employed to rebuild the natural Southeast Alaska chinook salmon stocks. All chinook salmon stocks in Southeast Alaska are "spring type" spawners; this means that mature chinook salmon return to their natal streams in May and June. Troll openings do not occur until June when experimental and hatchery access openings are used to target the

harvest on hatchery produced chinook while allowing natural chinook salmon to escape into the rivers. These fisheries are closely monitored to evaluate their effectiveness.

Determining when the general summer season for chinook salmon must close to stay within the allowable harvest is one of the major functions of the Department troll management plan. Tabulating the up-to-date troll catch is difficult due to the large number of fish tickets and the difficulty of receiving them from remote areas in a timely manner. Instead, a Fisheries Performance Data program (FPD), consisting of confidential interviews with skippers as they deliver catches, is used to estimate the catch rate per day in six areas (Figure 1). The total number of days the fishery will be open for chinook salmon is calculated by dividing the harvest goal by the estimated catch of the fleet per day. The number of chinook in the net fishery is totaled from fish tickets, while the catch in the recreational fishery is estimated by a creel census program carried out by the Sport Fish Division. The hatchery add on is calculated in-season through the FPD and port sampling programs. Chinook salmon are examined by a Department technician for presence of coded-wire tags (CWT's). The heads containing cwt's are sent to Juneau where the tags are read. The number of Alaskan hatchery fish is calculated by expanding the number of Alaskan produced hatchery fish in the sampled catch by the total catch.

After the chinook salmon quota has been reached, areas having high encounter rates of chinook salmon are closed. In addition, the Department urges fishermen to use methods for release that minimize injury to the fish.

Projected 1991 Chinook Salmon Harvests

The PSC established a 1991 all-gear allowable harvest ceiling for chinook salmon of 273,000. In addition to this "base" catch, Alaskan hatcheries are expected to contribute approximately 68,800 chinook salmon. From the pre-season estimate of total Alaskan hatchery contribution, the pre-treaty level catch of hatchery chinook salmon (5,000) and a risk adjustment factor (6,000) is subtracted to get an estimate of the total allowable hatchery add on of 57,800. Adding the Alaskan hatchery add on (57,800) to the ceiling of 273,000 gives a total 1991 projected all-gear catch ceiling of 330,800 chinook salmon.

It is important to recognize that these add on figures are only forecasts of the hatchery catch. The actual hatchery add on allowed will be determined in-season from estimated catches of Southeast Alaska hatchery chinook based on coded-wire tag recoveries. The projected hatchery add on for each fishery is based on the approximate proportions of hatchery harvests by gear type observed in 1990. The Board of Fisheries has not established levels of allocation for the hatchery production. The catch ceiling for the troll fishery is determined by subtracting the Board of Fisheries established ceiling for the net fisheries and the expected recreational catch from the all-gear catch ceiling. By Board regulation, there is a harvest limit of 20,000 chinook salmon, excluding Alaska hatchery chinook, for Southeast Alaska net fisheries. Details

of implementing this limit can be found in the net fishery (purse seine, drift gill net and set gill net) management plans.

The Board has not established a limit or guideline harvest level for recreational fisheries. The recreational fishery harvest of chinook salmon has increased during recent years. Based on these data, the Department projects a recreational catch of about 28,000, excluding Alaska hatchery chinook, for 1991. The estimate for the recreational harvest will be revised in-season based on creel census monitoring data.

The total chinook salmon catch is expected to be distributed as follows:

Fishery	<u>Total Chinook Catches in Thousands</u>		
	Base Catch	Hatchery ^{a/} Add-on	Total Catch
Troll	225	31.2 (54%)	256.2
Net	20	12.7 (22%)	32.7
Recreational	28	13.9 (24%)	41.9
All Gear	273	57.8 (100%)	330.8

^{a/} The 1990 hatchery harvest percentages are used for the 1991 projections.

The allowable harvest of 256,200 chinook salmon for the troll fishery is expected to occur as follows.

Total Troll Fishery Catch Projections

Fishery	<u>Troll Chinook Catches in Thousands</u> (Base Catch Plus Hatchery Addon)
Winter Fishery (Oct 90-Apr 91)	42
June Special Hatchery Access and Experimental Fisheries	52
Summer Season	162.2
Total Troll	256.2

The Board authorized chinook salmon hatchery access fishing periods during June. During 1989, six days of fishing produced 31,200 chinook of which 4,575 (15%) were Alaskan hatchery produced chinook salmon. In 1990, six days of fishing produced 34,810 chinook salmon of which 6,532 (19%) were Alaskan hatchery produced. The first opening in 1991 will again occur on June 5 - 7. The starting date and duration of a second opening is dependent upon the total catch in the first opening and the expected total catch in the experimental fishery openings. There is a limit of 40,000 chinook salmon, exclusive of Alaskan produced hatchery chinook salmon, for the June hatchery access, terminal and experimental fisheries.

Experimental troll fisheries, designed to increase the harvest of Alaska hatchery chinook, will be open in the Ketchikan (Carroll Inlet, Nichols Passage and Clarence Strait), Petersburg (Wrangell Narrows, Frederick Sound, and Stikine Passage) and Sitka Areas (Silver Bay) along with the Little Port Walter and Hidden Falls. The experimental fishery in Cross Sound is targeted on pink and chum salmon and is limited to 500 chinook salmon not including Alaskan hatchery produced chinook. Dates vary by fishery and are listed in the calendar at the end of this plan. Detailed area maps and descriptions are listed in the 1991 Troll Regulatory Guide available at Department area offices.

The general summer troll fishery will open July 1 regionwide for the harvest of all salmon species. The fishery will remain open for chinook salmon until in-season catch projections indicate the allowable chinook catch of 162,200 has been taken. The date on which the season will close for chinook will depend upon chinook abundance and the catch rate of the fleet. Based on recent years, we expect the chinook salmon season to close between July 14 and 24.

At the time of the chinook salmon closure, trollers will be required to off-load all chinook salmon they have on board prior to continuing to fish for other species. Areas of high chinook salmon abundance will be closed (Figure 2). In addition, trollers are encouraged to avoid areas of high chinook abundance in areas open to fishing, and to utilize fishing techniques which minimize incidental hooking of chinook salmon during the chinook salmon non-retention period.

Chilkat Inlet Closure

The summer troll fishing season for portions of Chilkat Inlet will be delayed from July 1 until July 15 in 1991. This closure is needed to provide additional protection for mature chinook salmon returning to spawn in the Chilkat River drainage. The troll closure corresponds to a similar closure for the drift gill net and recreational fisheries and includes all waters of Chilkat Inlet north of the latitude of Seduction Point.

Coho Salmon

Most coho salmon harvested in the troll fishery are believed to be of Alaskan origin. They spawn in approximately 2,000 streams in Southeast Alaska during the fall and early winter months. Coho salmon catches were depressed in the mid to late 1970's but improved through the 1980's. While information on the status of specific coho stocks is limited, some escapement and exploitation patterns based on coded-wire tagging studies have raised concerns for conservation, especially for stocks subject to harvest by multiple fisheries.

Troll fishery catches of coho salmon in outer coastal areas generally peak during mid-July to mid-August. Catches in inside fisheries generally peak during late August to mid-September. Most coho migrate into spawning streams between late September and mid-October.

Early in the season, coho stocks returning to southern southeast Alaska are harvested by the troll fishery in northern and central outside areas where they intermingle with coho bound for northern and central areas of the region. Lack of a general coho stock identification technique prevents assessment of run strength of individual stock groups contributing to these early season mixed stock fisheries. Thus, by the time information on run strength of individual stock groups becomes available later in the season, overharvest of weaker stock groups may have already occurred.

Southeast Alaska hatchery coho production first became significant in 1980. The contribution of hatchery coho salmon since then has varied from 0.4% of the total troll catch in 1980, 13.0% in 1986, 5.5% in 1988, and 15.9% in 1990. The average from 1980 to 1990 was 5.8%. Releases from private hatcheries have remained constant while those from State hatcheries have declined.

Management Objectives and Methods

1. Provide adequate escapement of coho salmon by area, to ensure sustainable populations.
2. Provide maximum opportunities for harvest of coho salmon consistent with conservation objectives.
3. Manage the coho fisheries to achieve allocations consistent with Board of Fisheries regulations.

As for chinook salmon, the Department's primary program for in-season assessment of catch rates is dockside interviews of vessel skippers. Catches by the net fisheries are obtained from fish tickets, while the recreational catch is estimated from a creel census conducted by the Sport Fish Division. An assessment of run strength using troll CPUE data from the skipper interview program occurs in mid-to-late July. Information available on individual coho indicator stocks will also be taken into account. Projected total season troll coho harvests will be used as a relative index of total run size. If the projected overall run size is less than 1,400,000, the Department will implement a 7 to 14 day conservation closure beginning sometime in late July.

Skipper interview data will be used to project total run size. Analysis of the skipper interview program has shown that cumulative areawide catch per day through statistical week 29 (average week ending date is July 19) is a good predictor of the total troll and all gear coho catch (Figure 3). In 1991, the Department will make this projection on July 23 (following statistical week 29).

The Department will continue to closely monitor all coho fisheries after this period in order to determine if the number of coho salmon reaching inside areas will be adequate to provide for spawning requirements, given normal or even restricted inside fisheries. The primary abundance indicators for this assessment consist of relative harvest levels by all fisheries and, in particular, catch-per-unit-effort in inside drift gill net and sport fisheries compared to 1971-80 levels.

Cumulative catch per day will be monitored in each of the six FPD areas (Figure 1) throughout August to assess run strength in each of the areas. Data will be compared with catches and CPUE within these areas and, if necessary, the department will implement area-specific closures.

Allocation Actions

The Board has established long term allocation goals for the coho harvest by each commercial gear type. Target percentages established by the Board are: troll - 61%; purse seine - 19%; drift gill net - 13%; set gill net - 7%. The Board specifically stated that subsistence, personal use, and recreational harvest of coho salmon are not affected by the established allocations between commercial gear types. The Board also stated that: "these percentages are guidelines only and may vary from season to season given natural fluctuations in salmon abundance and distribution and the limitations of fisheries management. It is, however, the Board's intent that these allocation guidelines be met as closely as possible over the long term. It is not the Board's intent for the Department to disrupt any of the traditional commercial fisheries upon which this historical allocation is founded. The Department may, however, make in-season adjustments to attempt to achieve these long term allocation guidelines." In 1991, the Department does not see a need to make any in-season adjustment to achieve long term allocation guidelines. The Department will, however, implement applicable, existing regulations. These regulations are:

1. A 10-day regionwide troll closure is required during the coho season to address allocations between outer coastal fisheries and inside water fisheries if the Department determines that the proportional share of coho salmon harvest by the troll fishery is larger than that of inside gill net and recreational fisheries compared to the 1971-80 levels. Primary inside fishery indicators for this assessment are overall coho salmon harvests and catch-per-unit-effort in the Tree Point, Prince of Wales, Taku/Snettisham, and the Lynn Canal drift gill net fisheries, and the Juneau marine sport fishery.
2. An 8-day on, 6-day off troll fishing schedule is required after mid-July for the upper portion of Chatham Strait (Section 12-B) and Lynn Canal (District 15); and
3. The troll fishing schedule in portions of State waters off Yakutat beginning early August, is keyed to weekly fishing periods in the set gill net fisheries.

If a regionwide troll closure is implemented to conserve coho salmon during late July or early August, the likelihood of a closure during mid-August to meet the allocation criteria will be reduced. Any potential transfer of coho harvest to inside fisheries resulting from an early closure, if implemented, will be reflected in inside fishery performance indicators used for comparison against the allocation criteria.

Sitka Area Coho Closure

Escapements of coho to index streams in the Sitka and Salisbury Sound have been depressed since 1986. The depressed escapement trend appears to be largely the result of poor survival conditions, probably in the marine environment. This is suggested by a concurrent but more severe decline in Sitka Sound, Salisbury Sound and Peril Strait pink salmon populations during the same time period. Therefore, the following waters will be closed to trolling from September 1 through 20:

the waters of 13-A including all waters of Salisbury Sound, Fish Bay, Deep Bay, St. John Baptist Bay, Neva Strait, Peril Strait south of the latitude of Pogishibi Point and east of the latitude of Kalinin Point;

in 13-B all the waters of Sitka Sound, Olga Strait, Nakwasina Sound, Katlian Bay, Silver Bay, eastern Channel east of a line from the westernmost tip of Cape Burunof to Kulichof Rock to Vitskari Rock to the southeast tip of Shoals Point;

all waters of 13-C will be closed.

Tentative 1991 Coho Season Schedule

The following is a generalized timetable for coho salmon management. It is emphasized that some modifications to this schedule may be required.

Dates	Expected Regulatory Actions
June 15-29	Beginning June 15, coho harvested incidentally during the June special hatchery access and experimental troll fisheries may be retained;
July 1	Established regulatory opening date of 1991 general summer troll season for all species; the troll chinook season will close when the guideline harvest level has been reached;
Late July/early Aug.	Potential 7 to 14 day regionwide closure if projected run size is less than 1,400,000; the projected total season commercial harvest will be used as index of run size;
Mid-to late August	A regionwide closure of approximately 10 days will be implemented if required for either coho conservation or allocation based on assessment of stock and fishery performance data relative to Board established criteria. If a regionwide conservation closure has occurred during late July, the likelihood of a closure being implemented for allocation at this time will be reduced.
Late Aug. to Sept. 20	Coho conservation measures implemented regionwide or by area as required to protect weak coho stocks including closure of Sitka and Salisbury Sounds and Peril Straits;
Sept. 21	Established regulatory closing date of 1991 general summer troll season.

Fishermen participating in the troll fishery are encouraged to review the 1991 Troll Fishery Regulatory Guide and the 1991/93 Commercial Finfish Regulation booklet for specific information regarding Board regulations.

The widespread and complex nature of the troll fishery necessitates a closely coordinated management program. In-season management is accomplished through a team led by the Southeast Regional Management Biologist and includes the Region's Troll Fishery Management Biologist, and the six Area Management Biologists. Names and work locations of people to contact concerning commercial troll fishery management are listed at the end of this management plan.

Following are Commercial Fisheries contacts regarding this management plan:

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P.O. Box 240020
Douglas, AK 99824
(907) 465-4250

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(907) 747-6688

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(907) 874-3822

Ray Staska
Area Management Biologist
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Haines, AK 99827
(907) 766-2830

The following is a list of telephone numbers that may be called during the troll fishing season to obtain recorded announcements concerning areas open to trolling:

Ketchikan	-	(907) 225-6870
Petersburg	-	(907) 772-3700
Wrangell	-	(907) 874-3822
Sitka	-	(907) 747-5022
Juneau	-	(907) 586-3505
Haines	-	(907) 766-2830

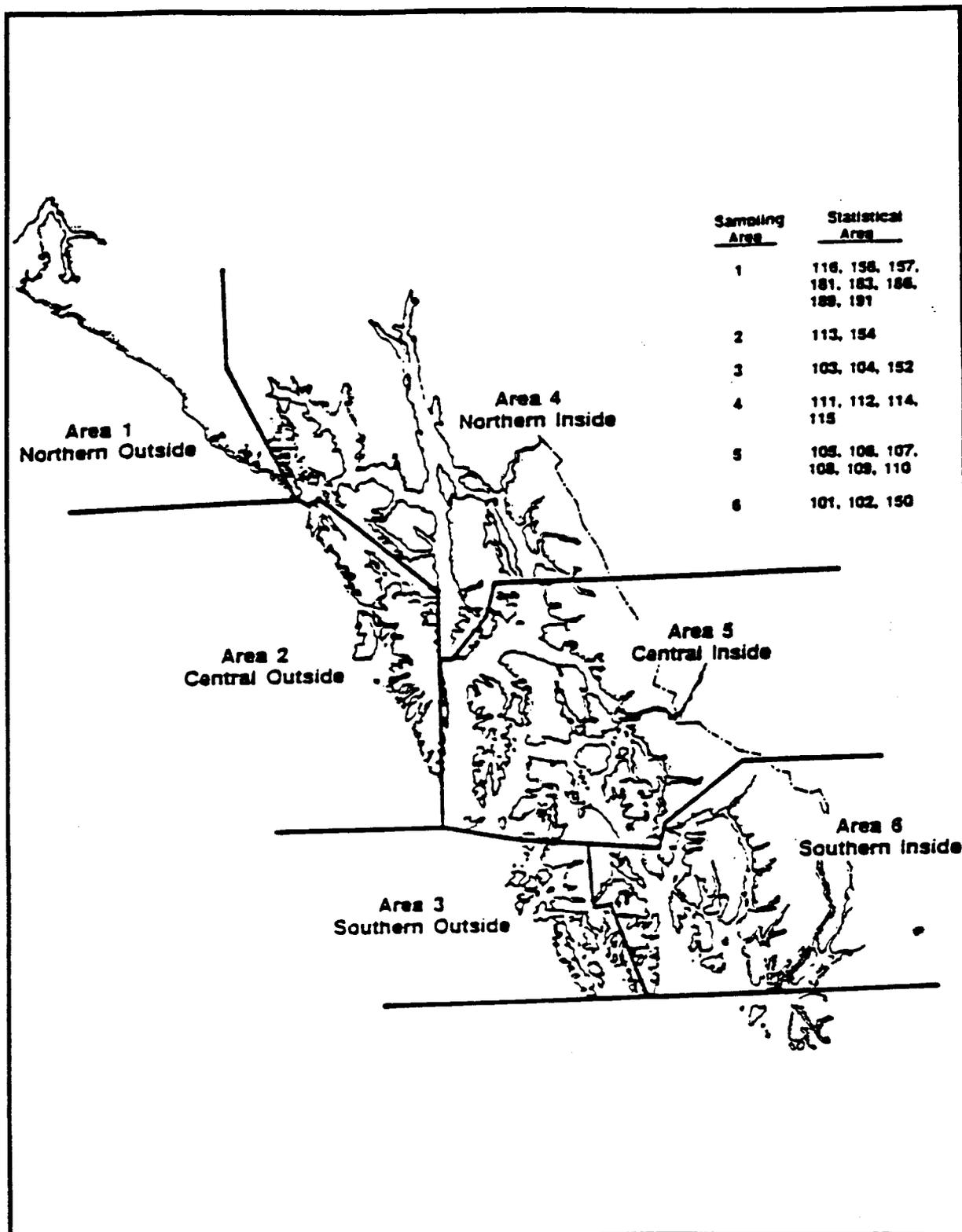


Figure 1. Fisheries Performance Data Program data collection areas in Southeast Alaska.

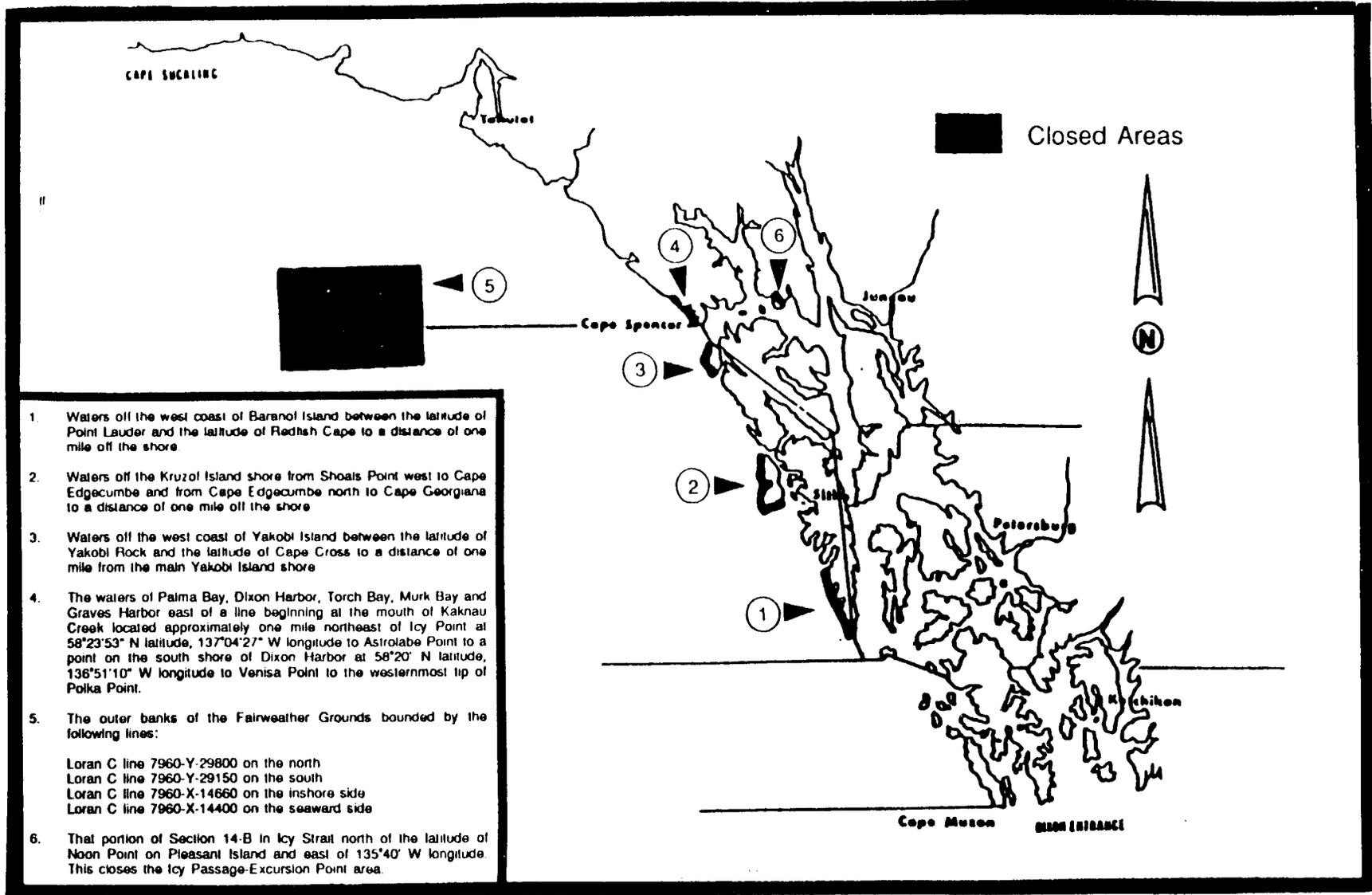
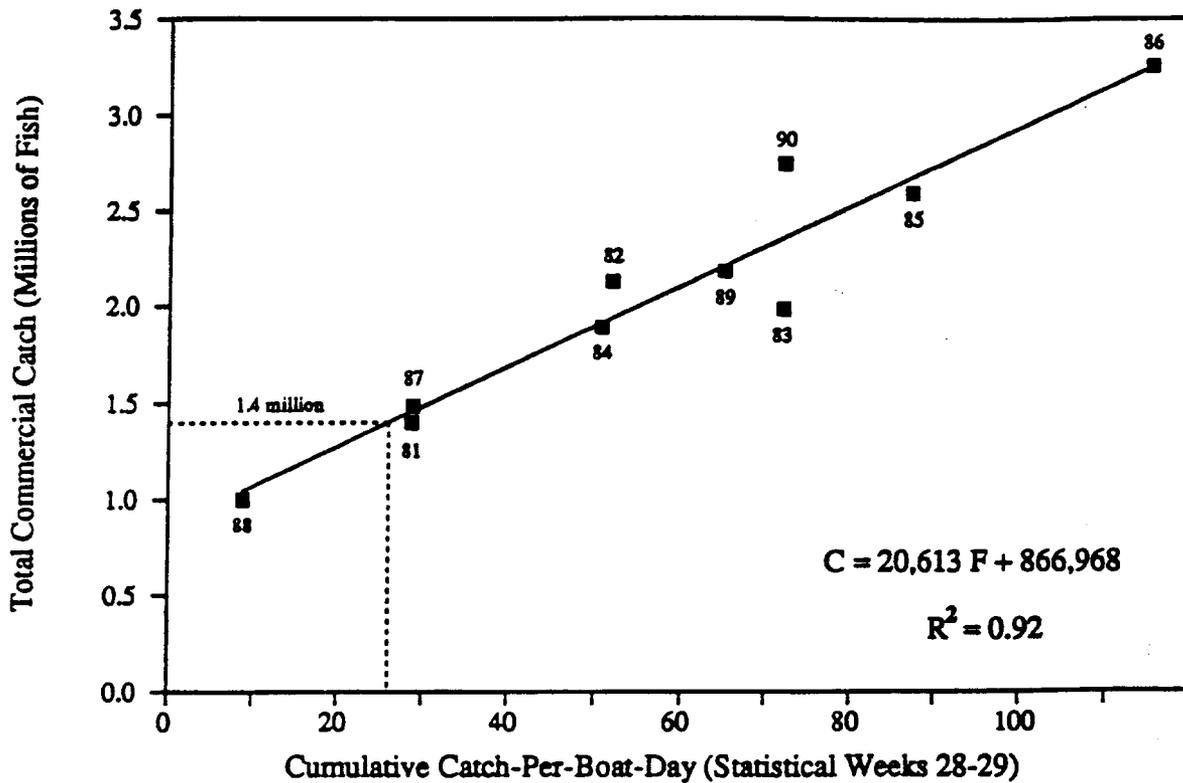


Figure 2. Southeast Alaska areas expected to be closed to trolling for all species during chinook non-retention periods of the 1991 Southeast Alaska summer troll season.



¹ C = Region total commercial coho salmon catch prediction (excluding hatchery cost recovery). F = Troll fishery cumulative catch-per-boat-day for statistical weeks 28-29 (July 7-20). F is calculated from fishery performance data (FPD) by adding the average daily catch rate for boats that land in week 28 (July 7-13) and the average daily catch rate for boats that land in week 29 (July 14-20).

Figure 3. Prediction model for the 1991 total Southeast Alaska commercial coho salmon catch used to assess the need for an early season troll closure for conservation.

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