

1990 MANAGEMENT PLAN
FOR CHINOOK AND COHO SALMON IN THE
SOUTHEAST ALASKA/YAKUTAT TROLL FISHERY



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Commercial Fisheries Division
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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. The department closely coordinates with the National Marine Fisheries Service (NMFS) to ensure compatibility of management actions. This plan discusses the management objectives and methods used to achieve the policies and goals set for the troll fishery.

The plan covers only chinook and coho salmon. Other species caught and retained by trollers are considered incidental.

1990 SEASON DATES

1. Winter Season:

October 1, 1989 through April 14, 1990.

2. Special June Hatchery Chinook Salmon Access Seasons:

June 5 through 7, and June 21 through 23. The Pacific Salmon Commission has established a catch quota of 30,000 non-Alaskan hatchery produced chinook salmon for the June troll fishery.

3. Experimental Troll Fisheries:

June 5 through June 29.

4. General Summer Season:

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

MANAGEMENT APPROACH

Chinook Salmon

Current information indicates that the majority of chinook salmon 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 Treaty. In addition to the catch ceiling, the Treaty provides for an additional harvest of chinook salmon that have been produced in Alaskan hatcheries (add-on). The add-on 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 (2,800 in 1990).

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 as established by the Pacific Salmon Commission.
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 user group catch allocations mandated by the Alaska Board of Fisheries
5. Minimize the incidental mortality of chinook salmon

Management Methods

Management methods for rebuilding the natural Southeast Alaska chinook salmon stocks, while harvesting Alaska hatchery produced chinook salmon, are primarily time and area closures. All chinook 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 primarily hatchery produced chinook while allowing naturally produced 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. 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 conducted 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 tags 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 are closed. In addition, the department urges fishermen to use methods for release that minimize injury to the fish.

Projected 1990 Chinook Salmon Harvests

The Pacific Salmon Commission established a 1990, all gear, allowable harvest ceiling for chinook salmon of 302,000. This includes a negotiated one year increase of 39,000 chinook salmon over the 1988 ceiling of 263,000. In addition to this base catch ceiling of 302,000, Alaskan hatcheries are expected to contribute approximately 29,200 chinook salmon. The projected hatchery add-on for 1990 of 21,400 was obtained by subtracting the pre-Treaty catch (5,000) of hatchery fish and the risk adjustment factor (2,800) from the estimated total catch of 29,200 fish. Adding the Alaskan hatchery add-on of 21,400 to the ceiling of 302,000 gives a total 1990 projected all-gear catch ceiling of 323,400 chinook salmon.

It is important to recognize that these 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. These estimates will be based on coded wire tag recoveries. The projected hatchery add-on for each fishery is based on approximate proportions of the hatchery harvest by gear type observed in 1989. The Board of Fisheries has no established levels of allocation for the hatchery production.

The catch ceiling for the troll fishery is determined by subtracting the Board of Fisheries established ceilings 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 for

recreational fisheries. The recreational harvest of chinook salmon has remained relatively constant during recent years. Based on these data, the department projects a recreational catch of about 22,000, excluding Alaska hatchery chinook, for 1990. For a preseason estimate of the allowable harvest for the summer troll fishery, this number of fish will be subtracted from the total allowable harvest. The estimate of recreational harvest will be revised in-season based on creel census monitoring data.

The catch is expected to be distributed as follows:

Fishery	Total Chinook Catches in Thousands		
	Base Catch	Hatchery Add-on ^{a/}	Total Catch
Troll	260	14.9 (69.4)	274.9
Net	20	2.8 (13.3%)	22.8
Recreational	22	3.7 (17.3%)	25.7
All Gear	302	21.4 (100%)	323.4

^{a/} The 1989 hatchery harvest percentages are used for the 1990 projections.

The allowable harvest of 274,900 chinook salmon for the troll fishery is expected to occur as follows.

Total Troll Fishery Catch Projections:

Fishery	Troll Chinook Catches in Thousands (Base Catch Plus Hatchery Add-on)
Winter Fishery (Oct 89-Apr 90)	33
June Special Hatchery Access and Experimental Fisheries	(26-34)
Summer Season	(206.9-216.9)
Total Troll	274.9

The Board authorized two special hatchery chinook salmon access fishing periods during June. In 1989, the six days of fishing produced 31,200 chinook, of which 4,575 were Alaskan hatchery produced fish.

In 1990 the openings will again occur on June 5 - 7 and June 21 - 23. A limit of 30,000 non-Alaskan hatchery chinook, including experimental fisheries, was established by the Pacific Salmon Commission for the month of June. The department will closely monitor catches in June and may adjust the time of the June 21 - 23 opening to comply with this agreement.

Experimental troll fisheries, designed to increase the harvest of Alaska hatchery chinook, will be open in June in the Ketchikan (Carroll Inlet, Nichols Passage and Clarence Strait), Petersburg (Wrangell Narrows, Frederick Sound) and Sitka Areas (Silver Bay), along with the Little Port Walter and Cross Sound areas. 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 1990 Troll Regulatory Guide available at Fish and Game offices. A catch of approximately 5,000 chinook salmon is projected for these fisheries.

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 that the allowable chinook catch has been taken. The estimated number available for the general summer opening is 211,900. The date on which the season will close for chinook will depend upon their abundance and the catch rate of the fleet. Based on recent years, we expect the chinook salmon season to close between July 14 and 20.

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 not closed, and to utilize fishing techniques which minimize incidental hooking of chinook salmon.

Chilkat Inlet Closure

The summer troll fishing season for waters of Chilkat Inlet will be delayed from July 1 until July 15. 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 fishery, and includes all waters of Chilkat Inlet north of the latitude of Seduction Point. Time and area restrictions and harvest limits have also been implemented in the sport fishery to conserve Chilkat River chinook salmon.

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 during the fall and early winter months. Coho salmon catches were depressed in the mid to late 1970's but improved during the 1980's. While information on the status of specific coho stocks is limited, some escapement and exploitation patterns based on coded wire tagging 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, southern Southeast Alaska coho stocks 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 has declined in recent years. In 1989, only 51,000 Alaskan hatchery coho were caught by the troll fishery. Releases from private hatcheries have remained constant while those from State hatcheries have declined. Recent ocean survival of hatchery cohos has been poor; it is not known if this problem will recur in 1990.

Management Objectives and Methods

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

As with chinook salmon, the department's primary program for in-season assessment of catch rates is based on dockside interviews of vessel skippers. Catches by the net fisheries are obtained from fish tickets, while the recreational catch is estimated by 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 is also 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 approximately 80% of the 1980-1988 average (1,500,000), the Department will implement a 7 to 14 day conservation closure in late July.

Skipper interview data will be used to make the projection of the run size. Analysis of the skipper interview program has shown that the cumulative catch from Area 2 (Central Outside) by statistical week 29 (average mid week date is July 19) is a good predictor of the total troll and all gear coho catch (Figure 3). By the following week the data (Figure 4) become quite reliable. In 1990, the department will make this analysis on July 23 (end of statistical week 29) and July 30 (end of statistical week 30).

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 are 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 1971-1980 levels.

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

A second, more limited conservation problem potentially exists for Lynn Canal coho stocks for which aggregate all-gear harvest rates have been relatively high in recent years (an average of 79% since 1982 with a range of 71-93%). This rate of exploitation is higher than is considered sustainable for coho over the long-term. These northern inside stocks are harvested by the troll fishery in both outside and inside areas, and by gill net and sport fisheries in inside waters. The Lynn Canal coho stocks exhibit late timing, with the primary harvest occurring in late August and September. During this time, the Department will monitor the run strength of these stocks and will implement conservation measures to reduce total harvest rates if necessary.

Allocation Actions

The Board has established long term 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 in an attempt to achieve these long term allocation guidelines." In 1990, 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 the 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.

Tentative 1990 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 1990 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 approximately 80% of 1980-88 average; 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;
Sept. 21	Established regulatory closing date of 1990 general summer troll season.

Fishermen participating in the troll fishery are encouraged to review the 1990 Troll Fishery Regulatory Guide and the 1989/90 Commercial Finfish Regulation booklet for specific information regarding Board of Fisheries 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, the five Area Management Biologists, and the Region's Troll Modeler. Names and work locations of people to contact concerning commercial troll fishery management are listed at the end of this management plan.

FISHERY CONTACTS

The following are Commercial Fisheries contacts regarding this management plan:

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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
Sitka	-	(907) 747-5022
Petersburg	-	(907) 772-3700
Juneau	-	(907) 586-3505

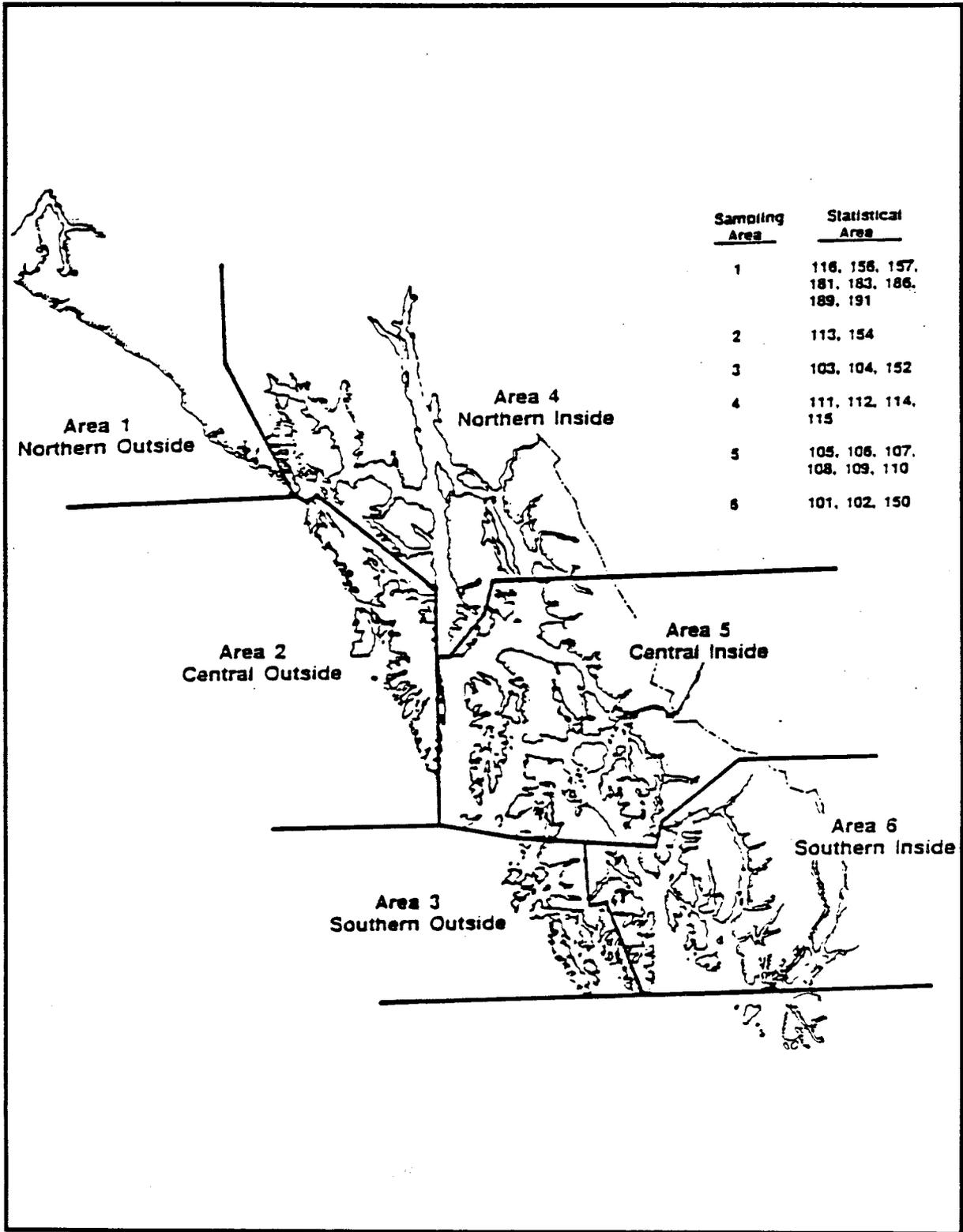


Figure 1. Southeast Alaska showing Fisheries Performance Data program data collection areas.

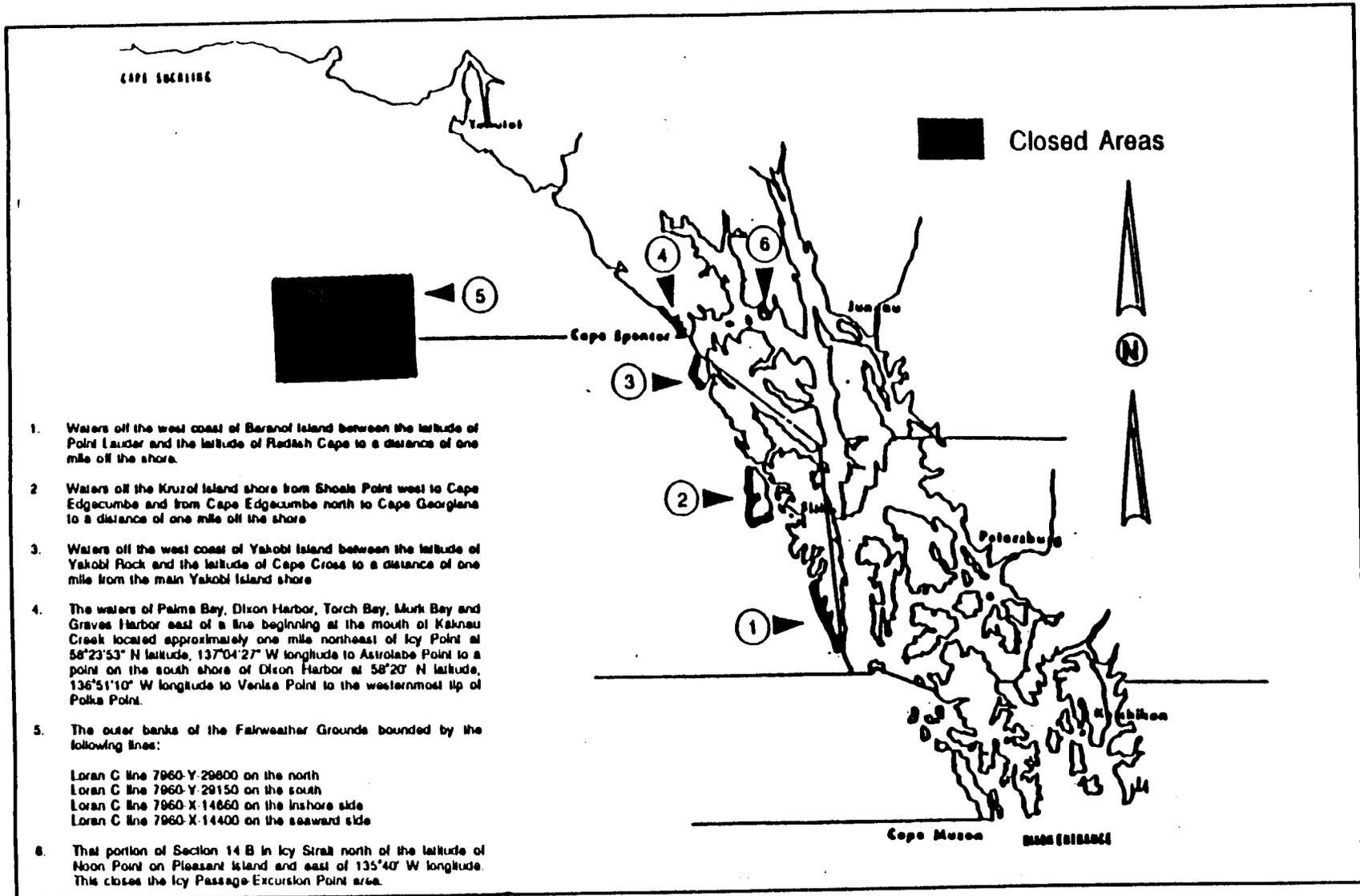


Figure 2. Southeast Alaska areas expected to be closed to trolling for all species during chinook non-retention periods of the 1989 Southeast Alaska summer troll season.

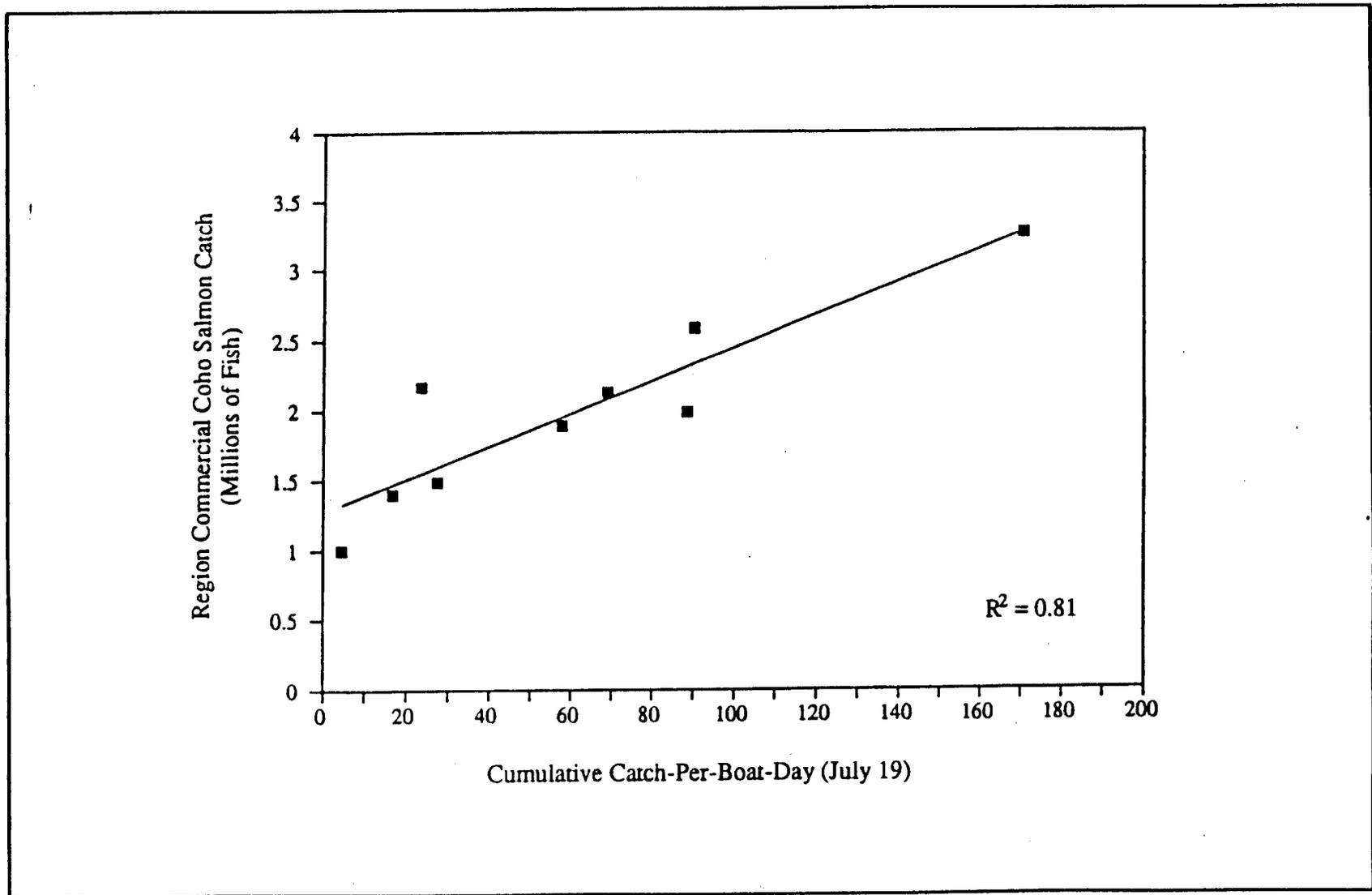


Figure 3. Linear regression of the Area 2 (central outside) troll fishery cumulative CPUE through July 19 against the total Southeast Alaska commercial coho salmon catch, 1980-89.

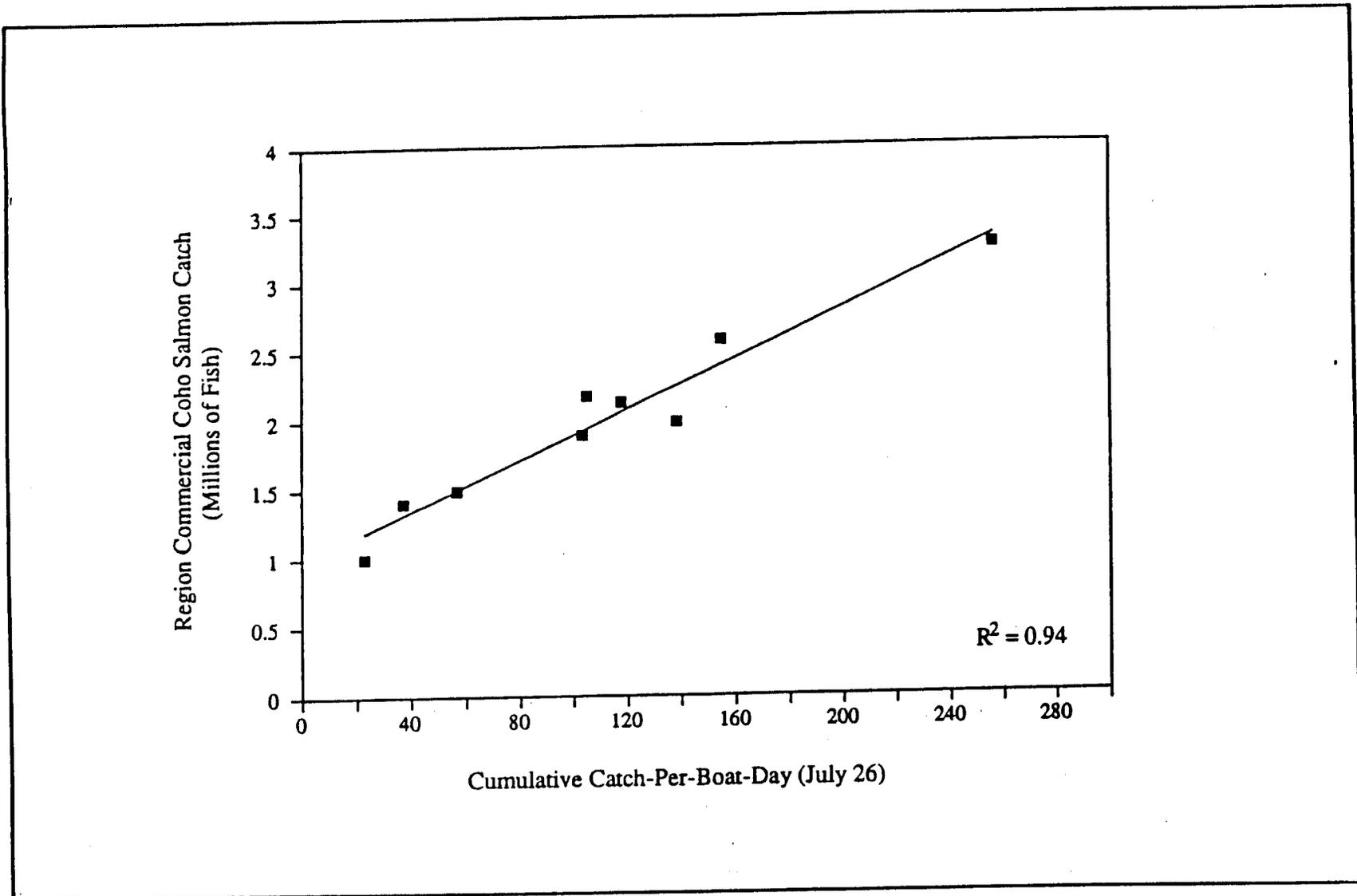


Figure 4. Linear regression of the Area 2 (central outside) troll fishery cumulative CPUE through July 26 against the total Southeast Alaska commercial coho salmon catch, 1980-89.

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Office of Equal Opportunity, U.S. Department of the Interior, Washington DC 20240

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