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Review of 1993 South Coast Salmon Troll Fisheries

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SALMON TROLL FISHERIES

by

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ABSTRACT

Gillespie, G. E. and T.F. Shardlow. 1995. Review of 1993 South Coast salmon troll fisheries. Can. Manuscr. Rep. Fish. Aquat. Sci. 2303: viii + 83 p.

This report documents the management actions, catch and effort that occurred in South Coast troll salmon fisheries in 1993. In-season management actions were designed to keep catches of each salmon species within prescribed limits while allowing each fishery to remain open for as much of the season as possible. Troll fisheries in the Strait of Georgia, on the West Coast of Vancouver Island and in Johnstone Strait were managed with combinations of partial and total area closures and periods of non-retention and non-possession for certain salmon species and fisheries.

Salmon catches in the Strait of Georgia met or exceeded allocations and/or ceilings for all species except for coho. The sockeye catch was 399,387 or 2.9% of the TAC. This represents an underage by inside trollers of 18,613 of their 418,000 (3.0%) allocation. The coho catch was higher than any recorded in the previous 10 years, a total of 287,468 pieces. The pink salmon catch was 335,765 or 6.6% of the TAC, which was over the inside troll pink allocation of 4.0%. Chum salmon catch greatly exceeded the pre-season ceiling of 3,500 pieces, with a final catch of 9,485. The chinook catch for the Strait of Georgia in 1993 was 33,218 or 7.2% over the 31,000 catch ceiling.

Salmon catches were within the prescribed limits for the West Coast Vancouver Island troll fishery. Chinook catch was only 276,707 pieces. This shortfall was primarily due to a lack of abundance. The final coho catch was 948,355, which was only 55.8% of the 1.7 million coho ceiling. Sockeye and pink salmon catches were 1.052 million and 1.066 million, respectively. The allocation of sockeye for the outside troll (North and South Coast) was 16.2% of Canadian TAC. They actually caught 11.3% of the TAC. For southerly migrating pink salmon, outside trollers caught less than their allocation of 29% and actually obtained 24.2%.

Key words: Pacific salmon, troll fishery management, southern British Columbia.

RÉSUMÉ

Gillespie, G. E. et T.F. Shardlow. 1995. Review of 1993 South Coast salmon troll fisheries. Can. Manuscr. Rep. Fish. Aquat. Sci. 2303: viii + 83 p.

Le présent rapport fait état des mesures de gestion et des données sur les prises et l'effort de la pêche du saumon à la traîne de la côte sud en 1993. Les mesures de gestion en cours de saison ont été conçues afin de maintenir les prises de chaque espèce en deçà des limites établies tout en permettant à chaque pêche de demeurer en activité le plus longtemps possible au cours de la saison. Les pêches à la traîne du détroit de Géorgie, de la côte ouest de l'île Vancouver et du détroit de Johnstone ont été gérées par le moyen d'une combinaison de fermentures partielles ou totales de zones et de périodes de non-rétention et de non-possession s'appliquant à certaines espèces ou à certaines pêches.

À l'exception du coho, les prises de toutes les espèces de saumon du détroit de Géorgie ont atteint ou dépassé la valeur des allocations ou des maximums. Les prises de saumon rouge se sont élevées à 399 387 poissons à poissons, ou 2,9 % du TAC. Cette valeur est inférieure du 18 613 poissons à l'allocation de 418 000 saumons (3 %) des pêcheurs du détroit. Les prises de coho, qui ont atteint 287 468 poissons, sont les plus importantes notées depuis 10 ans. Celles de saumon rose, de 335 765 poissons, ou de 6,6 % du TAC, ont été supérieures de 4 % à l'allocation des pêcheurs à la traîne dans le détroit. Les prises de saumon kéta, de 9485 poissons, ont largement dépassé la limite de pré-saison fixée à 3 500. Les prises de quinnat ou détroit de Géorgie ont atteint 33 218 poissons en 1993, valeur supérieure de 7,2 % à la limite de 31 000 saumons.

Les prises de saumon de la côte ouest de l'île Vancouver n'ont pas dépassé les limites imposées à la pêche à la traîne. Les prises de quinnat ne se sont élevées qu'à 276 707 saumons et cette valeur s'explique surtout par une faible abondance. Les prises définitives de coho ont atteint 948 355 poissons, ce qui ne représente que 55,8 % de la limite fixée à 1,7 million. Les prises de saumons rouge et rose ont atteint, respectivement, 1,052 million et 1,066 million de poissons. L'allocation de saumon rouge au large (côte nord et sud) correspondait à 16,2 % du TAC canadien. Les pêcheurs n'ont capturé que 11,3 % du TAC. Dans le cas des saumons roses migrant vers le sud, les pêcheurs à la traîne du large n'ont pas atteint leur allocation de 29 %, leurs prise ne correspondant qu'à 24,2 %.

Mots clés: Saumon de Pacifique, gestion de la pêche à la traîne, sud de la Colombie-Britannique

1.0 INTRODUCTION

Troll fisheries in southern British Columbia were actively managed in 1993 by the Department of Fisheries and Oceans (DFO), as they have been since 1985. The reports reviewing the troll fishery for these years are:

Fishing Season	Report
1985	Shardlow <i>et al.</i> 1986
1986	Shardlow <i>et al.</i> 1988
1987	Shardlow <i>et al.</i> 1991
1988	not documented
1989	Ryall and Shardlow 1991
1990	Ryall and Shardlow 1992
1991	Ryall 1993
1992	Gillespie <i>et al.</i> (in prep).
1993	This report

Active in-season management was primarily due to the continuation of salmon catch ceilings and allocations for the troll fishery (Table 1). Catch ceilings for chinook (*Oncorhynchus tshawytscha*) and coho salmon (*O. kisutch*) were a requirement of the Pacific Salmon Treaty. Allocation for sockeye (*O. nerka*), pink (*O. gorbuscha*) and chum salmon (*O. keta*) for the 1991 through the 1994 fishing seasons was reached by a subcommittee from the Commercial Fishing Industry Council early in 1991. The allocation plan reflects cycle year averages in most respects. Modification to the sharing arrangement for Fraser River sockeye above a defined base catch was instituted in 1991, in order to assist a fair and equitable allocation among all commercial gear sectors.

Detailed fishing plans were developed in consultation between industry and DFO fishery managers (Appendices 2 and 3). Advisory committees consisting of fishermen, industry representatives and DFO personnel developed the initial fishing plans prior to the 1993 fishing season. This report documents the 1993 troll fishing plans for southern British Columbia (waters south of Cape Caution (Fig. 1)), in-season management actions and resulting catches in pieces for three troll fisheries: Strait of Georgia (historically known as Gulf of Georgia, Statistical Areas 13 to 18 and 29 (Fig. 1)), West Coast Vancouver Island (Areas 21 to 27, 121 to 127 and 130-1) and Johnstone Strait (Areas 111, 11, 12 and 13).

1.1 SOURCES OF CATCH DATA

Catch data in this report are provided by two time frames: in-season and post-season.

(a) In-season

In-season catches are provided by the In-season Catch Monitoring Program (ISCMP) (Webb et al. 1983), and by a program of on water hails coupled with aerial overflights. Both sources of information are used to make management decisions during the season. Catch figures are provided each week during the fishery, and are continually updated through the course of the season. Catch figures attempt to capture the actual catch date versus the date when the catch was landed.

(b) Post-season

The second catch data source is provided by sales slips (Wong, 1983). In this report, the sales slip estimates are catches as provided by sales slips received up to March 3, 1994.

1.2 ALLOCATION GOALS

Commercial salmon fishing plans in 1993 reflect the departmental goals of meeting escapement targets while harvesting available surpluses in a manner that ensures international and domestic allocations are achieved. Since sockeye and pink allocations were in percentages, the actual numbers of fish allocated to troll fisheries were adjusted during the season as run size estimates were updated.

2.0 STRAIT OF GEORGIA TROLL

2.1 BACKGROUND AND DEVELOPMENT OF FISHING PLANS

The 1993 Strait of Georgia troll fishing plans (Appendix 1) were drawn up in pre-season meetings with the Inside Troll Advisory Committee (ITAC) which consisted of members of the Gulf Trollers Association and United Fishermen and Allied Workers Union.

The 1993 season was scheduled from June 28 to September 30. Management goals included achieving chinook allocation, maintaining harvest rates of coho, obtaining the allocation of sockeye salmon with minimum non-retention periods, and completing pink allocation primarily from Fraser River stocks.

2.1.1 Chinook

In 1993 the catch ceiling was set at 31,000 chinook for Gulf trollers (Table 1). The 1993 catch ceiling was based upon a continuation of the 20% harvest rate reduction over the 1987 level, first introduced in 1988. As coho abundance was predicted to be similar to the recent low average found

in 1991 and 1992, it was assumed that the chinook allocation might be reached early in the season. If 29,000 chinook were caught before the sockeye opening, then non-retention and non-possession of chinook, and a single barbless hook restriction would be implemented until the sockeye fishery started. If shaking of chinook salmon was above acceptable levels, then additional management measures would be implemented. These additional measures would be decided upon after consultation with the in-season advisory committee. During discussion of an increase in the size limit to slow chinook catch, information was provided to ITAC that such an increase would require a reduction in the catch ceiling, to compensate for increased shaker mortality. The size limit of 62 cm fork length, adopted in 1986 (Shardlow *et al.* 1988), was continued.

Chinook would re-open in September, when it was estimated that the remainder of the ceiling (2,000 pieces) would last until late September. The reasons for this plan were:

- 1) the majority of the fleet would be fishing for sockeye initially and therefore would not create any shaking problems with regards to chinook salmon;
- 2) to allow incidental chinook retention during the pink fishery and the later part of the sockeye fishery; and
- 3) allow the inside troll season to continue until late September.

2.1.2 Coho

While there was no catch ceiling on coho for inside trollers (Table 1), the goal was not to increase harvest rate levels from recent years. Therefore, in 1993 inside trollers were restricted to traditional effort levels. Coho abundance was forecasted to be similar to the recent average, thus coho catch would be limited in 1993 by available abundance and amount of fishing time.

2.1.3 Chum

The chum catches for Strait of Georgia trollers was not to exceed 1% of the Canadian Total Allowable Catch (TAC). The Canadian TAC was estimated to be 350,000 (pre-season), and this would allow inside trollers to catch 3,500 pieces. No directed chum fisheries, outside of opportunities before the September 30 season closure, were planned for 1993.

2.1.4 Sockeye

The pre-season estimate of run size for Fraser River sockeye was 17.4 million, with a predicted Canadian commercial catch of between 9 to 10 million. This would allow an Inside Troll allocation of 201,000 to 250,000 pieces. The determination of inside trollers' allocation for sockeye salmon is based upon a percentage of the Canadian TAC. For a complete description of the Canadian and United States TAC determination process, see the report by

the Fraser River Panel on the 1990 Fraser River sockeye and pink salmon fishery (Pacific Salmon Commission, 1991).

Sockeye allocation for 1993 was based upon a two-tiered process. For a base Canadian commercial catch of 8.3 million Fraser River sockeye the allocation for inside trollers was 2.0%. The allocation for any catch above 8.3 million was 5.0%. Furthermore, catch-up/make-up of Fraser River sockeye continued for the fourth year. Consequently, inside trollers would pay back 26,000 sockeye in 1993 in order to compensate for a 1992 overage. There were a number of objectives governing the sockeye fishing plan for 1993 including:

- 1) Achieve the allocation target;
- 2) Provide sufficient and simultaneous fishing opportunities in Johnstone Strait and Strait of Georgia;
- 3) Pace the sockeye fishery so that pink salmon allocation is taken simultaneously with sockeye; and
- 4) In the event that an upgrade in run size or a revision of catch is made after sockeye has closed, inside troll fishing will resume to take the outstanding balance, provided there are a minimum of 5,000 pieces.

The fishery was to be paced in such a way as to reserve 10% of the allocation for the directed pink fishery. This was designed to reduce the number of sockeye shakers during the pink fishery.

When the sockeye fishery commenced, retention would be permitted 7 days per week in the areas that were opened to other species June 28. Trolling in the net areas of Area 13 were to follow the gillnet fishery and end prior to the commencement of the seine fishery. Trolling in Area 12 was to start concurrent with the seine openings, but would receive one extra fishing day per week than the seine gear. Subareas 18-4 and 29-5 were to open 7 days a week. Subareas 29-1 to 29-4, 29-6, 18-1 and 18-11 were to open for 2 days, in conjunction with the Area 13 openings. This separation of gear types was to prevent any potential conflicts occurring among the user groups.

2.1.5 Pink

The catch allocation of pink salmon for inside trollers is a percentage of southerly migrating pink salmon, with the major component consisting of Fraser River stocks in 1993. The Strait of Georgia troll catch allocation for pink salmon was set at 4%. Based upon a predicted 31 million run size, and thus a 15 million Canadian commercial catch, the inside trollers would receive 600,000 pink salmon.

Due to expected low abundances, a directed fishery in Area 12 targetting Study Area pink salmon was not anticipated in 1993. However, no major problems were anticipated in obtaining the inside troll share of Fraser River pink salmon in 1993.

2.2 CATCH AND IN-SEASON ACTIONS FOR STRAIT OF GEORGIA

2.2.1 Chinook

Trolling for chinook began as scheduled on June 28 and continued until July 22, when it was estimated that the early season catch ceiling of 29,000 had been reached (Table 2). On July 23 non-retention and non-possession of chinook salmon was put into effect; in addition a barbless hook regulation was enforced. It was also announced that further action may be necessary if chinook shaking problems developed. These in-season actions to moderate chinook catch rate were similar to those invoked in the 1986, 1991 and 1992 seasons (Shardlow et al. 1988; Shardlow, unpubl. data).

As in 1991 and 1992, barbed hooks were allowed when the sockeye season commenced on August 7, but chinook non-retention and non-possession remained in effect. After a meeting with ITAC on August 19, advisors agreed to re-open the Strait of Georgia for chinook retention on September 1. Chinook non-retention and the single barbless hook restriction were re-imposed September 19, in conjunction with the closures of the inside sockeye and pink fisheries. The final catch of chinook salmon by inside trollers was 33,218 pieces, a 7.2% overage of their 31,000 piece ceiling (Tables 1 and 3).

2.2.2 Coho

Coho trolling opened on June 28 and continued uninterrupted until September 30 when the main Strait of Georgia troll fishery closed as scheduled (Table 2). The Strait of Georgia troll coho catch was 287,468 pieces (Table 3), the highest recorded in over ten years (Table 4).

2.2.3 Sockeye

Sockeye concerns dominated the troll season in August and September. The pre-season run-size estimate for of Fraser River sockeye was 17.4 million, which would allow a Canadian TAC of between 9 and 10 million pieces. During pre-season, it was anticipated that the sockeye opening date would fall after July 23. The fishery opened later than anticipated, on August 7 in regular areas, with additional openings in Areas 12, 13, 18 and 29. The single barbless hook restriction invoked for chinook non-retention on July 23 was removed for the sockeye fishery. The fishery was closed 2359 H August 13, as the catch estimates were nearing the allocation.

The fishery was re-opened to harvest remaining allocation on August 16, and closed after August 17. On August 27 the Pacific Salmon Commission (PSC) increased the Fraser River sockeye run size from 17.4 million to 20 million. The fishery was re-opened August 29, for regular Areas and some Subareas of 13, 18 and 29. Area 29 was closed to trolling on August 30, to prevent conflict during a gillnet opening, and re-opened August 31. The PSC further upgraded the Fraser River sockeye run size estimate to 22 million on August 31. Area 12 gillnet areas were opened for inside trollers September 2. In-season catch estimates indicated that the inside allocation had been taken, and the season was closed September 18. The final catch was estimated at 399,387.

2.2.4 Pink

The season opened June 28 in the Strait of Georgia with pink salmon retention, and continued through to September 18. The allocation of 4.0% of southerly migrating pink salmon allowed for a estimated pre-season catch of 600,000. Catch rates were low until the second week of August, when an estimated 42,000 pinks were taken by inside trollers.

By late August it was apparent that the Fraser River pink salmon run size would be considerably less than the pre-season estimate of 31 million. On August 27 the PSC announced that the run size projection was decreased to 10 million. In-season catch estimates of pink salmon were steady until the first week of September, during which approximately 125,000 pink salmon were caught, for an in-season total of 213,000 pieces. On September 3, the PSC upgraded the Fraser River run size estimate to 12 million, which allowed for an inside troll catch of 204,000 southerly migrating pink salmon. The department announced that the inside fleet had exceeded their allocation on September 13. This was evaluated in light of other species' fishery goals, particularly the desire to harvest the inside allocations for chinook and sockeye. Fishing for pink salmon continued until September 18, and the total catch was estimated at 335,765 pieces (Table 3).

2.2.5 Chum

The chum fishery primarily occurred between September 19 and September 30, after the Strait of Georgia fisheries for sockeye, pink and chinook salmon had been closed. In-season chum catch to September 18 was estimated to be 1,500 pieces, which left 2,000 pieces remaining on the inside allocation. The catch rate proceeded faster than anticipated and total catch of 9,485 pieces was taken by September 30. The inside trollers exceeded their 1% pre-season allocation of TAC of inside chum stocks by nearly 3,000 pieces.

2.2.6 Summary

The Strait of Georgia troll season commenced June 28 and continued until September 30. The chinook catch was slightly greater than the ceiling of 31,000 with 33,218 pieces landed. Pink and sockeye allocations were altered several times throughout the season responding to changes in estimated run sizes. Post-season catch estimates show that Inside trollers landed 2.9% of the Canadian Fraser River sockeye TAC, just under their allocation of 3.0%. The goal for pink salmon was 4.0% of the Canadian TAC and Inside trollers actually landed 5.5%. Coho catch totalled 287,468 pieces, the largest Gulf troll catch in over 10 years. The chum catch was 9,485 pieces, significantly over the 1% allocation of 3,500 pieces.

2.3 STRAIT OF GEORGIA TROLL GEAR COUNTS

Aerial counts of trollers fishing in the Strait of Georgia were made throughout the 1993 season to enable timely catch estimation (Table 5). As in previous years, troll counts were conducted in conjunction with the Georgia Strait creel survey flights (Collicutt and Shardlow, 1992). The two flight routes covered an area from Sheringham Point off Victoria to Granite Point north of Campbell River (Figure 2). All troll gear sighted was recorded by Statistical Area. There were 20 such flights during the 1993 troll season from June 28 to September 30. There were a number of peaks in the 1993 effort profile which correspond to fisheries directed upon chinook, sockeye or pink salmon. During the first three weeks of July the bulk of the effort was directed at chinook fisheries in Areas 13 and 14. During the sockeye fishery

in the first week of August, effort was concentrated in Area 13, with some effort in Areas 18 and 29. Effort in Areas 13, 14 and 29 during the first three weeks of September were sockeye and pink directed fisheries.

3.0 WEST COAST VANCOUVER ISLAND TROLL

3.1 BACKGROUND

The 1993 West Coast Vancouver Island (WCVI) troll fishing plans (Appendix 1) were drawn up in pre-season meetings with the Outside Troll Advisory Committee (OTAC). OTAC was formed in 1986 to represent the concerns of WCVI trollers and consisted of representatives from the Northern Trollers Association, Pacific Trollers Association, United Fishermen and Allied Workers Union, Native Brotherhood, Nuu-chah-nulth Tribal Council, Pacific Seafood Council and Fisheries Council of B.C.

WCVI management goals for 1993 were directed towards keeping troll harvest of chinook and coho within the catch ceilings specified by the Pacific Salmon Treaty (Table 1). Other goals included obtaining domestic allocation targets for Fraser River sockeye and southern bound pink salmon, while maintaining undisrupted fisheries and maintaining or increasing the economic benefits to the troll fleet and coastal communities. Achievement of the catch ceilings and allocations was to be done with a minimum number of non-retention fisheries, to reduce the impacts of associated mortalities. The season would be extended to mid-September and was to be managed by Red and Green Line catches in the case of chinook and coho.

The chinook and coho catch ceilings were 360,000 and 1.8 million pieces, respectively. The sockeye allocation was 18.4% of Canadian TAC or 1,442,000 pieces pre-season. The pink allocation was 29% of Canadian TAC, or 1,705,000 pieces estimated pre-season.

3.2 DEVELOPMENT OF FISHING PLANS

OTAC met three times prior to the 1993 season to discuss fishing plan development. Catch ceilings coupled with the understanding that the troll season and fishing areas were to remain similar to recent years, provided a framework for WCVI fishing plan discussions. Also considered was DFO's desire to avoid, where possible, non-retention fisheries due to the disruptive effect of high shaker catches on fish stocks. A further condition to be considered in developing troll fishing plans was to maintain chinook harvest rates at the average level for the years 1985-87. This requirement was implemented by Canada because of a desire to rebuild the Harrison River chinook stock.

At the first OTAC meeting, advisors agreed to propose a season opening date of July 1 to the Minister of Fisheries. There was also discussion of the sockeye fishing plan. The main points to be included in the sockeye fishing plan as identified by DFO were:

- 1) Total closure prior to sockeye opening to promote enforcement;

- 2) A biological trigger that would commence the sockeye fishery after the passage of the majority of the summer run stocks and on the building phase of the late run Fraser River sockeye stocks; and
- 3) If abundance of sockeye was low after attaining their sockeye allocation there would be a non-retention and non-possession fishery. If abundance was high, then a total closure for one or two days would be considered.

After considerable discussion, no agreement could be reached regarding the need for a total closure prior to the sockeye opening.

Two other pre-season meetings concentrated on sockeye fishing plans. In the second meeting, two options were considered: a shotgun opening of the sockeye fishery; or a pre-announced closure prior to the opening. At the third meeting, several proposals were considered, but the advisors were unable to reach agreement on an opening strategy.

The fishing plan consisted of the following points.

- (1) An opening date for chinook, coho, pink and chum on July 1 and fishing to continue to the third week of September unless the catch ceilings and/or allocations were achieved prior to this time.
- (2) The sockeye opening date was expected to occur not earlier than July 23. The precise opening date for sockeye would occur when the fishery could exploit mainly late run sockeye stocks, after the passage of the majority of summer run stocks. No troll closure was planned prior to the sockeye troll opening date.
- (3) Pink salmon non-retention in effect in the areas of north west Vancouver Island (126-4, 127, 130-1, 11 and 111) and all sub-areas inside and outside the surf line south of Chads Point (142-1, 130-3 and 130-2) until the sockeye opening date. After the sockeye opening date these areas would open to the retention of pink salmon.
- (4) Catch-up/make-up for Fraser River sockeye was to continue for a fourth year. Outside trollers would pay back 237,000 sockeye in 1993 to compensate for a 1991 overage.
- (5) Minimum size limit of troll-caught chinook remained at 67 cm fork length, or 56 cm for the "head off" length.
- (6) Management of chinook and coho fisheries was to be conducted by maximum catch guidelines called Red Line catches. The season would commence with Areas A to E, I to L, and F2 open (Figure 3). Areas S, G, H and F1 would be closed. Some or all of these areas would open 14 if coho catch was below the Green Line, and there were no major conservation concerns.

Further details of the 1993 WCVI troll plan are available in the Salmon Troll Fishing Plan (Appendix 2).

3.3 CATCH AND IN-SEASON ACTIONS FOR WCVI

3.3.1 Chinook

Trolling for chinook began as scheduled on July 1 (Table 7). Chinook catch rates were below the green line throughout the duration of the 1993 fishing season (Figure 4). With the intent of increasing chinook catch rates, Conservation Areas F1 and H were opened July 17, and Conservation Area G was opened July 24. The West Coast Vancouver Island fishery stayed open for chinook retention until season closure on September 30, with the exception of the coast-wide closures preceding and following the sockeye fishery. Statistical Areas 11, 111 and 130-1 closed to the retention and possession of chinook on August 3, in conjunction with the closure of the North Coast chinook troll fishery. Areas 130-1 and a portion of 111 re-opened for chinook August 27, and the remainder of 111 and Area 11 opened August 29, in conjunction with the sockeye fishery re-start. Chinook non-retention was re-implimented in Areas 11 and 111 on September 13, until the season closed September 30. The estimated troll catch of chinook for the west coast of Vancouver Island in 1993 was 276,707 pieces.

The total number of days open for chinook off the west coast of Vancouver Island was 85, while the average number of days fishing during the years 1985-1987 was 77. Total effort in 1991, 36,071 boat-days, was down by 28.6% from the 1985-1987 average of 50,500. This preliminary analysis would indicate that the WCVI troll fishery met the objectives of not exceeding the 1985-87 average harvest rate, in a manner consistent with the intent of the Canada/U.S. Treaty.

3.3.2 Coho

Fishing for coho salmon started July 1 with all areas open except for areas F1, G, H and S (Table 7). Areas F1, G and H were closed to moderate the coho catch rate in order to extend the total troll season. In addition, by delaying the catch, the average body weight of coho would increase. Areas F1 and H were opened July 17, and Area H was opened July 24, as the estimated catch of coho was below the Green Line. This action was taken in compliance with the troll plan's protocol. The coho fishery was interrupted only by the coast-wide closures preceding and following the sockeye fishery, and closed in accordance with the fishing plan on September 30. The estimated catch of coho off the west coast of Vancouver Island in 1993 was 948,355 pieces, or 55.8% of the 1.7 million piece ceiling.

3.3.3 Sockeye

The WCVI sockeye fishery opened August 7, after a two-day coast-wide closure (Table 7). This closure was designed to prevent illegal trolling for sockeye before the fishery began. When the fishery opened, Conservation Areas A to L were open, and Area S closed. The fishery continued uninterrupted for 8 days at which time it was estimated the sockeye allocation for the current run size estimate had been reached. The in-season catch of Fraser River sockeye by outside troll fleet was estimated to be 1.45 million, at a 17.4 million run size. No further sockeye fishing was anticipated unless the sockeye run size increased.

The Pacific Salmon Commission upgraded the Fraser River run size estimate to 20 million on August 27. The sockeye fishery was re-opened August

29, including the net areas of Area 12. The net areas of Area 13 were opened to the outside troll fleet September 2, as they had not filled their allocation, and sockeye abundance was decreasing in Area 12. Trolling in Areas 12 and 13 closed September 13. The west coast of Vancouver Island remained open for sockeye until the season closure on September 30.

Total commercial catch in Canada was 13.852 million Fraser River sockeye in 1993 (W. Saito, Pacific Salmon Commission, pers. comm., December 30, 1993). The outside troll catch was 1.565 million Fraser River sockeye. As the outside troll fishery was allocated 16.2% of the Canadian TAC, or 2.246 million pieces, the outside troll fleet harvested only 11.3% of their allocation in 1993 (Table 1).

3.3.4 Pink

As in 1991, pink salmon fishing plans were designed to minimize the catch of South Coast Study Area pink salmon stocks for conservation reasons while still obtaining the outside troll share from other southerly migrating pink stocks. As Study Area pink salmon are generally an earlier timed stock, non-retention and non-possession of pink salmon in the main migration pathways was implemented until Study Area pink stocks had passed through the area. Consequently, Areas 142-1, 2W, 130, 127, 126-4, 111, and 11 were closed to pink salmon retention and possession from July 1 until the opening of the Fraser River sockeye fishery on August 7 (Table 7). Catch of pink salmon in areas open to retention was incidental. As the run of Fraser River pink salmon started to build in the later part of August the catch rates of pink salmon off the west coast of Vancouver Island increased greatly. No management actions other than the one described above were required in 1991 to moderate the pink salmon catch. Pink salmon retention continued until the end of the outside troll season on September 30.

The total Canadian commercial catch of southerly migrating pink salmon was 5.103 million pieces (W. Saito, Pacific Salmon Commission, pers. comm., December 30, 1993). The outside troll fleet's allocation of 29% would allow a catch of 1.480 million pink salmon. The fleet landed 1.233 million pieces, or 24.2% of the Canadian TAC, an underage of 247,000 pieces.

3.3.5 Summary

In 1993, the WCVI troll fishery opened July 1, and experienced two total closures and a number of large area closures. Actions at the start of the season were taken to speed coho and chinook catch rates, as both were below green line catch levels. Even with all Conservation Areas except S open, the catch of both chinook and coho remained below the green line catch level throughout the season. No further actions could be taken to increase the harvest rates of these species.

The next sequence of management actions taken were prior to and after the first sockeye opening when closure of WCVI to all trolling was enforced for a total of 6 days. These actions were enacted in order to prevent illegal fishing for sockeye salmon.

The sockeye run size underwent several revisions during the season. On August 27 the run was upgraded to 20 million from 17.4 million. It was subsequently upgraded to 22 million on August 30, to 22.4 million on September 10, and to 22.6 million on September 17. The initial sockeye opening was for 8 days, at which time the allocation was achieved. Following

the first run size upgrade, the fishery was re-opened on August 29, and remained open for the rest of the season, for a total of 40 days sockeye fishing in 1993. The fast pace of the sockeye catch, and late timing of the run, high diversion rate and late season upgrade of run size made it difficult to manage the fishery so as to obtain the outside troll allocation. The final total outside Fraser River sockeye catch was estimated to be 1.565 million, which was 11.3% of the TAC. This was well under their allocation of 16.2%.

The WCVI troll was open for the harvest of chinook salmon for a total of 85 days in 1993. The final catch figure for chinook salmon in 1993 was 276,707 pieces. The final catch of coho was 948,355 pieces, well below the catch ceiling of 1.7 million fish. The WCVI fishery also landed 1,066,469 pink salmon and 15,273 chum salmon in 1993.

3.4 WCVI TROLL GEAR COUNTS

Aerial counts of trollers fishing the WCVI were made throughout the 1993 season to help provide more timely estimates of troll effort. These effort estimates were then used in conjunction with CPE estimates obtained by dockside samplers and/or on-water "hails" to generate in-season estimates of troll catch. In 1993 troll counts were from regularly scheduled tracker flights performed for the Department of National Defense. Aerial overflights counts for the southwest of Vancouver Island were augmented by radar counts. Vessel counts presented here (Table 7) are from aerial overflights only.

4.0 JOHNSTONE STRAIT TROLL

4.1 SUMMARY

Fishing in Johnstone Strait is mainly by net gear. Therefore, troll management actions are linked to concerns for net species and net fleet activities. Consequently, Johnstone Strait trollers were not assigned catch ceilings, but rather had their Johnstone Strait catches assigned to other fishing area catch ceilings or allocations. For example, chinook caught in Areas 111 and 11 were assigned to the North Coast catch ceiling, chinook caught in Area 12 to the WCVI catch ceiling, and chinook caught in Area 13 to the Strait of Georgia catch ceiling. Assignment of species to catch ceilings or allocations were as follows:

STATISTICAL AREA	CHINOOK	COHO	PINK	SOCKEYE	CHUM
111,11	North Coast	No Ceiling	Outside troll	Outside troll	NA ¹
12	WCVI	No Ceiling	By troll licence	By troll licence	By troll licence
13	Strait of Georgia	No Ceiling	By troll licence	By troll licence	By troll licence

¹NA = Not applicable

Table 8 summarizes the management actions taken in the 1993 Johnstone Strait troll fishery. Trolling was permitted from June 28 to September 30, as per the pre-season plan. Due to the late restart of the sockeye fishery, and reduced abundance in Areas 11 and 12, Outside trollers were allowed into the net areas of Area 13 for the first time since area licensing was instituted in 1981 (Argue et al. 1987).

Catch results from sales slip records (Table 9) are as follows: pink salmon accounted for the largest catch by season-end (694,295), followed by sockeye (552,398), coho (54,443), chum (7,376) and chinook (4,036).

4.2 CHINOOK CONSERVATION ACTIONS FOR LOWER GEORGIA STRAIT

In 1988 DFO initiated, at the Minister's request, a conservation plan for the lower Strait of Georgia chinook (LGS) stocks. The plan involved all major fisheries impacting on LGS chinook and called for a 20% reduction in harvest rate. The harvest rate reduction was translated into a 20% reduction in catch, assuming that abundance and mortalities associated with fishing remain the same as in a base period. For upper Johnstone Strait and Lower Central Coast the base period chosen was 1985 to 1987. The average catch during this period for Areas 10, 11, 111 and 110 was 24,102. A 20% reduction in this catch would produce a catch of about 19,000. This catch ceiling plus the closure of parts of Area 10 and 11 (Appendix 3; Fig 2) addressed the Minister's conservation directive to reduce the harvest rate of LGS chinook stocks by 20% in the lower central coast troll fishery.

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TABLES

Table 1. Summary of catch ceilings and allocations for the 1993 South Coast troll fisheries.

STRAIT OF GEORGIA				
Species	Allocated % of TAC	Allocation or Ceiling	Actual Catch	
			Pieces	% of TAC
Sockeye	3.0%	418,000	399,387	2.9%
Coho	NA	NA	287,468	NA
Pink	4.0%	204,000	335,765	6.6%
Chum	1.0%	3,500	9,485	2.7%
Chinook	(ceiling)	31,000	33,218	NA

Notes: Sockeye base allocation = 2% up to a total catch of 8.3 million, additional allocation at 5%. Actual total sockeye allocation was 444,000 less 26,000 payback.

Pink base allocation = 4% of Southern Bound Pink Salmon.

NA = not applicable.

Catches from ISCMP, accessed November 1, 1993. Catches are in pieces.

WEST COAST VANCOUVER ISLAND				
Species	Allocated % of TAC	Allocation or Ceiling	Actual Catch	
			Pieces	% of TAC
Sockeye	16.2%	2,246,000	1,565,000	11.3%
Coho	(ceiling)	1,700,000	948,355	NA
Pink	29.0%	1,480,000	1,233,000	24.2%
Chum	NA	NA	15,273	NA
Chinook	(ceiling)	360,000	276,707	NA

Notes: Sockeye allocation and catch represent Total Outside Fraser River sockeye salmon. Sockeye base allocation = 10% up to a total catch of 8.3 million, additional allocation at 30%. Actual total sockeye allocation was 2,496,000 less 250,000 payback. Estimate of Total Outside Fraser River sockeye catch from W. Saito, Pacific Salmon Commission, pers. comm., December 30, 1993.

Pink allocation and catch represent Total Outside Southern Bound pink salmon. Pink base allocation = 29% of Southern Bound Pink Salmon. Estimate of Total Outside Southern Bound pink salmon from W. Saito, Pacific Salmon Commission, pers. comm., December 30, 1993.

NA = not applicable.

Catches from ISCMP, accessed November 1, 1993. Catches are in pieces.

Table 2. Summary of management actions for the 1993 Strait of Georgia troll fishery.

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
June 28 to June 30	Coho Pink Chum Chinook	Fishery opened 0001H June 28. Sockeye non-retention and non-possession in effect.	Fishery opened as per fishing plan.	<u>Area 13</u> : S/A's -1 to -3, -14 to -20 and -23. <u>Area 14</u> : all S/A's except -11 and -14. <u>Area 15</u> : all S/A's except -6. <u>Area 16</u> : all S/A's. <u>Area 17</u> : all S/A's except -7 and -14. <u>Area 18</u> : all S/A's except -1, -8 and -11. <u>Area 29</u> : S/A -5 only.
July 1 to July 14	Coho Pink Chum Chinook	Deserters Group fishery opened.	Fishery opened in conjunction with WCVI troll season.	<u>Area 12</u> : S/A's -10 and -13 only, chinook and coho retention only. All other areas open as above.
July 15 to July 22	Coho Pink Chum Chinook	Subarea 17-5 and a portion of 17-9 (Chemainus River mouth) closed to all trolling 0001H July 15. Portions of Subareas 17-13 and 17-16 (outer Nanaimo Harbour) closed to the retention of chinook 0001H July 15.	Protection of local chinook stocks	<u>Area 17</u> : all S/A's except -7, -14, -15 and a portion of -9; chinook non-retention in portions of -13 and -16. All other areas as above.
July 23 to August 6	Coho Pink Chum	All Areas and Subareas (except 12-10 and 12-13) closed to chinook retention and possession 2359H July 22. Single barbless hook restriction in effect 2359H July 22.	Catch approaches chinook allocation. Remaining chinook allocation to be taken during directed sockeye fishery.	<u>Area 12</u> : S/A's -10 and -13 only, chinook and coho retention only. All other areas open as above, non-retention and non-possession of chinook.
August 7 to August 8	Sockeye Coho Pink Chum	Sockeye fishery opened in all areas currently open to coho, pink and chum. Net areas of Area 13 and Area 29 opened. Barbless hook restriction removed for sockeye fishery.	Commence sockeye fishery.	<u>Area 13</u> : S/A's -1 to -3, -7 to -10, -14 to -20, -23 and -27 to -32, non-retention and non-possession of chinook. <u>Area 18</u> : all S/A's except -8, non-retention and non-possession of chinook. <u>Area 29</u> : S/A's -1 to -6, non-retention and non-possession of chinook. All other areas open as above, non-retention and non-possession of chinook.

Table 2. Summary of management actions for the 1993 Strait of Georgia troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
August 9 to August 13	Sockeye Coho Pink Chum	Net areas of Area 13 and Area 29 closed 2359H August 8. Area 12 net areas open in conjunction with seine opening 1800H and closed 2359H August 9.	Pace sockeye fishery.	<u>Area 12</u> : S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12, non-retention and non-possession of chinook. S/A's -10 and -13 remain open for chinook and coho only. <u>Area 13</u> : S/A's -1 to -3, -14 to -20 and -23, non-retention and non-possession of chinook. <u>Area 18</u> : all S/A's except -1, -8 and -11, non-retention and non-possession of chinook. <u>Area 29</u> : S/A -5 only, non-retention and non-possession of chinook. All other areas open as above, non-retention and non-possession of chinook.
August 14 to August 15	Coho Pink Chum	Non-retention and non-possession of sockeye in all Areas and Subareas effective 2359H August 13. Subarea 18-4 closed to all trolling 2359H August 13.	Close sockeye fishery as catch approaches allocation.	<u>Area 18</u> : all S/A's except -1, -4, -8 and -11, non-retention and non-possession of chinook and sockeye. All other areas open as above, non-retention and non-possession of chinook and sockeye.
August 16 to August 17	Sockeye Coho Pink Chum	Sockeye fishery restarted 0001H August 16. Subarea 18-4 and gillnet areas of Area 12 opened 0001H August 16.	Fishery reopened to harvest remaining sockeye allocation.	<u>Area 12</u> : gillnet areas open, non-retention and non-possession of chinook and coho. <u>Area 18</u> : all S/A's except -1, -8 and -11, non-retention and non-possession of chinook. All other areas open as above, non-retention and non-possession of chinook.
August 18 to August 27	Coho Pink Chum	All inside salmon troll Areas closed to trolling for sockeye 2359H August 17. Subarea 18-4 and Area 12 (except for 12-10 and 12-13) closed to all trolling 2359H August 17. Barbed hooks permitted.	Sockeye fishery closed as allocation approached, remainder to be taken in directed pink fishery.	<u>Area 12</u> : S/A's -10 and -13 only, retention of chinook and coho only. <u>Area 18</u> : all S/A's except -1, -4, -8 and -11, non-retention and non-possession of chinook and sockeye. All other areas open as above, non-retention and non-possession of chinook and sockeye.
August 28	Coho Pink Chum	Portion of Subarea 13-3 (Duncan Bay) closed to all trolling 2359H August 27 to 2359H August 28.	Area closed due to high incidence of sockeye shakers.	<u>Area 13</u> : S/A's -1, -2, a portion of -3, -14 to -20 and -23, non-retention and non-possession of chinook and sockeye. All other areas open as above, non-retention and non-possession of chinook and sockeye.

Table 2. Summary of management actions for the 1993 Strait of Georgia troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
August 29	Sockeye Coho Pink Chum	Sockeye fishery reopened 0001H August 29, in all Areas currently open to coho, pink and chum. Subarea 18-4 opened to trolling 0001H August 29. Net areas of Areas 13 and Area 29 opened to trolling 0001H August 29 and closed 2359H August 29.	Sockeye fishery reopened to harvest remaining allocation, following run size upgrade to 20 million August 27.	<u>Area 13</u> : S/A's -1 to -3, -7 to -10, -14 to -20, -23 and -27 to -32, non-retention and non-possession of chinook. <u>Area 18</u> : all S/A's except -8, non-retention and non-possession of chinook. <u>Area 29</u> : S/A's -1 to -6, non-retention and non-possession of chinook. All other areas open as above, non-retention and non-possession of chinook.
August 30	Sockeye Coho Pink Chum	Subareas of Area 29 and Area 18 closed 2359H August 29. Area 13 net area opening extended until further notice.	Continued harvest of remaining sockeye allocation. Area 29 closed due to gillnet fishery.	<u>Area 18</u> : all S/A's except -1, -8 and -11, non-retention and non-possession of chinook. <u>Area 29</u> : S/A -5 only non-retention and non-possession of chinook. All other areas open as above, non-retention and non-possession of chinook.
August 31	Sockeye Coho Pink Chum	Subareas of Area 29 and Area 18 reopened.	Continued harvest of remaining sockeye allocation, following run size upgrade to 22 million August 30.	<u>Area 18</u> : all S/A's except -8, non-retention and non-possession of chinook. <u>Area 29</u> : S/A's -1 to -6, non-retention and non-possession of chinook. All other areas open as above, non-retention and non-possession of chinook.
September 1 to September 2	Sockeye Coho Pink Chum Chinook	Chinook fishery reopened in all areas currently open, except "Banana" area in Area 29 and outer Nanaimo Harbour.	Fishery reopened to harvest remaining 2,000 pieces in chinook allocation, with protection of some local stocks.	<u>Area 17</u> : all S/A's except -7 and -14, open to all species. S/A's -13 and -16 open, with non-retention of chinook in some portions (outer Nanaimo Harbour). <u>Area 29</u> : S/A's -1 to -6 open to all species, except "Banana" area, which is non-retention of chinook. All other areas open as above, for all species.
September 2 to September 18	Sockeye Coho Pink Chum Chinook	Net areas of Area 12 open to trolling 1800H September 2, non-retention of chinook and coho.	Area opened to speed harvest of sockeye allocation, while protecting local chinook and coho stocks.	<u>Area 12</u> : S/A's -1, -3 to -6, -8 to -12 and a portion of -18, non-retention of chinook and coho. S/A's -10 and -13 remain open for chinook and coho only. All other areas open as above.

Table 2. Summary of management actions for the 1993 Strait of Georgia troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
September 19 to September 30	Coho Chum	Sockeye, chinook and pink fisheries closed 2359H September 18. Coho and chum still permitted, chinook and coho permitted in 12-10 and 12-13. Single barbless hook restriction in effect. Area 12, 13 and 29 net areas and Subarea 18-4 closed to trolling 2359H September 18.	Pink, sockeye and chinook allocations reached. Coho and chum fisheries remain open.	<p><u>Area 12</u>: S/A's -10 and -13 only, chinook and coho retention only.</p> <p><u>Area 13</u>: S/A's -1 to -3, -14 to -20 and -23.</p> <p><u>Area 14</u>: all S/A's except -11 and -14.</p> <p><u>Area 15</u>: a;; S/A's except -6.</p> <p><u>Area 16</u>: a;; S/A's.</p> <p><u>Area 17</u>: all S/A's except -7, -14, -15 and a portion of -9.</p> <p><u>Area 18</u>: all S/A's except -1, -4, -6, -8 and -11.</p> <p><u>Area 29</u>: S/A -5 only.</p> <p>Areas 13 to 18 and 29 coho and chum retention only, single barbless hook restriction.</p>
October 1	CLOSED	All inside troll fisheries closed 2359H September 30.	Troll season closed as per fishing plan.	NONE.

Table 3. Weekly catch and days fished for the 1993 Strait of Georgia troll fishery.

Statistical Week	Sockeye		Coho		Pink		Chum		Chinook		Effort	
	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Boat Days	Cumul. Effort
7/1	1	1	66,676	66,676	47	47	0	0	8,322	8,322	564	564
7/2	0	1	65,766	132,442	112	159	0	0	8,524	16,846	851	1,415
7/3	0	1	42,908	175,350	161	320	0	0	7,106	23,952	745	2,160
7/4	15	16	40,019	215,369	272	592	1	1	5,504	29,456	672	2,832
7/5	0	16	28,108	243,477	365	957	2	3	44	29,500	562	3,394
8/1	10,466	10,482	15,537	259,014	2,126	3,083	1	4	24	29,524	518	3,912
8/2	170,951	181,433	1,830	260,844	49,699	52,782	23	27	2	29,526	939	4,851
8/3	35,816	217,249	1,995	262,839	24,338	77,120	22	49	0	29,526	431	5,282
8/4	1,712	218,961	12,571	275,410	15,350	92,470	96	145	0	29,526	337	5,619
9/1	99,051	318,012	1,475	276,885	111,384	203,854	46	191	123	29,649	729	6,348
9/2	35,652	353,664	2,852	279,737	54,241	258,095	152	343	773	30,422	541	6,889
9/3	28,494	382,158	2,450	282,187	56,037	314,132	261	604	1,881	32,303	494	7,383
9/4	12,135	394,293	2,608	284,795	14,463	328,595	464	1,068	861	33,164	280	7,663
10/1	5,094	399,387	2,673	287,468	7,170	335,765	8,417	9,485	54	33,218	345	8,008
Total	399,387		287,468		335,765		9,485		33,218		8,008	

Notes: Catch and effort estimates are from ISCMP, accessed March 3, 1994.
 Effort estimates are for Statistical Areas 13 to 18 and 29, and do not include effort in Statistical Area 13 by Outside trollers.
 Catch estimates from Statistical Areas 12 and 13 do not include catch by Outside trollers.
 Chinook catches do not include Area 12 catches, which are assigned to the Outside troll ceiling.

Table 4. Catch and effort by Statistical Area for the 1993 Strait of Georgia troll fishery.

Statistical Area	Species					Boat Days
	Sockeye	Coho	Pink	Chum	Chinook	
12	129,865	14,306	73,503	501	0	1,225
13	116,278	34,213	118,233	8,709	8,940	1,678
14	2,863	205,940	9,683	216	19,732	3,126
15	309	7,455	567	1	1,354	199
16	21,740	6,947	8,090	3	1,675	359
17	2,598	16,066	2,071	20	825	371
18	7,203	1,363	3,360	0	60	130
29	118,531	1,178	120,258	35	632	920
Total	399,387	287,468	335,765	9,485	33,218	8,008

Notes: Catch and effort estimates are from ISCMP, accessed March 3, 1994.
Coho catch does not include Statistical Area 12 catch by Outside trollers.
Chinook catch from Statistical Area 12 is assigned to the Outside troll ceiling.
Catch and effort estimates from Statistical Areas 12 and 13 do not include catch or effort by Outside trollers.

Table 5. Catch (pieces) by species and year, Strait of Georgia troll fishery, 1981-1992.

Year	Species				
	Sockeye	Coho	Pink	Chum	Chinook
1981	36,897	66,526	191,029	708	238,876
1982	209,630	177,488	3,048	697	178,263
1983	139,941	69,109	169,656	963	105,061
1984	121,274	82,255	2,495	99	88,158
1985	135,543	191,791	356,029	2,323	55,686
1986	283,706	182,748	3,563	2,176	43,899
1987	95,253	219,051	144,939	590	38,695
1988	90,749	259,361	22,605	20,819	19,611
1989	254,891	74,775	427,032	10,201	28,474
1990	456,544	172,574	294,869	15,904	34,394
1991	223,973	15,306	387,028	52,586	32,230
1992	130,052	151,593	89,871	18,460	37,249

Notes: Catches are from ISCMP, March 3, 1994.
Sockeye, coho, pink and chum catches are for Areas 13-18, 29 and 12 (Inside).
Chinook catches are for Areas 13-18 and 29.

Table 6. Troll vessel counts by overflight for the 1993 Strait of Georgia troll fishery.

Stat Week	Date	Statistical Area							Day Total	Week Total
		13	14	15	16	17	18	29		
7/1	28-Jun	21	99	3	4	2	0	0	129	243
	3-Jul	26	82	2	4	0	0	0	114	
7/2	4-Jul	21	99	3	4	2	0	0	129	217
	9-Jul	26	53	1	2	6	0	0	88	
7/3	12-Jul	12	58	4	4	4	0	0	82	177
	17-Jul	5	80	2	0	7	0	1	95	
7/5	25-Jul	1	60	0	2	2	1	7	73	107
	29-Jul	2	24	1	0	6	1	0	34	
8/1	1-Aug	5	61	10	0	13	1	3	93	308
	7-Aug	172	0	0	2	1	10	30	215	
8/2	11-Aug	5	1	0	12	2	17	0	37	37
8/3	15-Aug	0	2	0	1	0	0	0	3	20
	21-Aug	1	10	0	1	5	0	0	17	
8/4	23-Aug	1	16	1	1	5	0	0	24	101
	27-Aug	18	49	2	1	7	0	0	77	
9/1	4-Sep	82	8	1	4	3	0	87	185	185
9/2	10-Sep	16	12	0	0	6	0	51	85	85
9/3	14-Sep	56	22	1	0	3	0	25	107	107
9/4	19-Sep	0	8	0	0	1	0	0	9	41
	24-Sep	0	16	0	0	7	1	8	32	

Table 7. Summary of management actions for the 1993 West Coast Vancouver Island troll fishery.

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
July 1 to July 15	Coho Pink Chum Chinook	Fishery opened 0001H July 1, with Conservation Areas F1, G, H and S closed. Pink non-retention in Areas 11, 111, 126-4, 127 and 130-1.	Conservation Areas F1, G and H closed to control coho catch rate, and thus pace the fishery. Conservation Area S closed as per Can/US treaty agreement. Pink non-retention to protect Study Area pink stocks.	<p><u>Outside Surfline:</u> Area 121 to 127, 111, and 130-1. Pink non-retention in 111, 126-4, 127 and 130-1.</p> <p><u>Conservation Areas:</u> A to E, F2 and I to L.</p> <p><u>Inside Surfline:</u> <u>Area 23:</u> all S/A's except -1 and -2. <u>Area 24:</u> all S/A's. <u>Area 25:</u> S/A -7 only. <u>Area 26:</u> S/A 26-11 only (pink non-retention). <u>Area 27:</u> all S/A's except -7 to -11. <u>Area 11:</u> S/A -1 and a portion of -2 (pink non-retention). <u>Area 12:</u> S/A's -10 and -13, chinook and coho retention only.</p>
July 16 to July 23	Coho Pink Chum Chinook	Conservation Areas F1 and H opened to trolling, all species except sockeye, 0001H July 17.	Chinook and coho catches below green line catch level.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> A to E, F1, F2 and H to L.</p> <p><u>Inside Surfline:</u> As above.</p>
July 24 to July 31	Coho Pink Chum Chinook	Conservation Area G opened to trolling for all species except sockeye, 0001H July 24.	Chinook and coho catches below green line catch level.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> A to L.</p> <p><u>Inside Surfline:</u> As above.</p>

Table 7. Summary of management actions for the 1993 West Coast Vancouver Island troll fishery (contd).

PERIOD	MANAGEMENT ACTION			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
August 1 to August 2	Coho Pink Chum Chinook	Area 27 and portions of Area 24 closed to trolling 0001H August 1.	Areas closed for the protection of local stocks.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> As above.</p> <p><u>Inside Surfline:</u> <u>Area 23:</u> all S/A's except -1 and -2.. <u>Area 24:</u> S/A's -2, -6 and -8 only. <u>Area 25:</u> S/A -7 only. <u>Area 26:</u> S/A -11 only (pink non-retention). <u>Area 11:</u> S/A -1 and a portion of -2 (pink non-retention). <u>Area 12:</u> S/A's -10 and -13 (chinook and coho retention only).</p>
August 3 to August 4	Coho Pink Chum Chinook	Areas 11, 111 and 130-1 closed to chinook retention 2359H August 2.	Closed in conjunction with North Coast chinook closure.	<p><u>Outside Surfline</u> Areas 121 to 127, 111 and 130-1, non-retention of chinook in 111 and 130-1.</p> <p><u>Conservation Areas:</u> As above.</p> <p><u>Inside Surfline:</u> <u>Area 11:</u> S/A -1 and a portion of -2 (pink and chinook non-retention). All other areas open as above.</p>
August 5 to August 6	CLOSED	Fishery closed 2359H July 4.	All areas closed prior to commencement of sockeye fishery.	NONE

Table 7. Summary of management actions for the 1993 West Coast Vancouver Island troll fishery (contd).

PERIOD	MANAGEMENT ACTION			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
August 7 to August 9	Sockeye Coho Pink Chum Chinook	Fishery re-opened 0001H August 7. Conservation Area S closed, non-retention and non-possession of chinook in Areas 11, 111 and 130-1. Trolling for sockeye prohibited in Area 23.	Commencement of sockeye troll fishery. Conservation Area S closed as per Can/US treaty agreement. Areas 11, 111 and 130-1 closed to chinook retention in conjunction with North Coast chinook closure. Area 23 closed to sockeye trolling to protect Barkley Sound stocks.	<p><u>Outside Surfline:</u> Areas 121 to 127, 111 and 130-1. Chinook non-retention and non-possession in 111 and 130-1.</p> <p><u>Conservation Areas:</u> A to L.</p> <p><u>Inside Surfline:</u> <u>Area 23:</u> all S/A's except -1 and -2 (trolling for sockeye prohibited). <u>Area 24:</u> S/A's -2, -6 and -8. <u>Area 25:</u> S/A -7. <u>Area 26:</u> S/A -11. <u>Area 11:</u> S/A -1 and a portion of -2 (non-retention and non-possession of chinook). <u>Area 12:</u> S/A's -10 and -13 (chinook and coho retention only).</p>
August 9 to August 11	Sockeye Coho Pink Chum Chinook	Area 12 seine areas open to trolling 1800H August 9.	Trolling allowed in Area 12 seine areas at seine times to pace sockeye fishery.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> A to L.</p> <p><u>Inside Surfline:</u> <u>Area 12:</u> S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12 (non-retention of chinook and coho), S/A's-10 and -13 (chinook and coho retention only). All other areas open as above.</p>
August 11 to August 14	Sockeye Coho Pink Chum Chinook	Area 12 seine areas closed 1800H August 11.	End of net area opening.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> A to L.</p> <p><u>Inside Surfline:</u> <u>Area 12:</u> S/A's-10 and -13 (chinook and coho retention only). All other areas open as above.</p>

Table 7. Summary of management actions for the 1993 West Coast Vancouver Island troll fishery (contd).

PERIOD	MANAGEMENT ACTION			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
August 15 to August 18	CLOSED	Fishery closed 2359H August 14.	Sockeye catch approaches allocation.	NONE
August 19 to August 26	Coho Pink Chum Chinook	Fishery reopened 0001H August 19. Conservation Area S, Areas 11, 111, 130-1 and portions of waters inside the surfline remain closed.	Fishery reopened to harvest remaining allocations of species other than sockeye. Conservation Area S closed as per Can/US treaty agreement. Areas 11, 111 and 130-1 remain closed due to high abundance of sockeye.	<u>Outside Surfline:</u> Areas 121 to 127. <u>Conservation Areas:</u> A to L. <u>Inside Surfline:</u> <u>Area 23:</u> all S/A's except -1 and -2.. <u>Area 24:</u> S/A's -2, -6 and -8. <u>Area 25:</u> S/A -7. <u>Area 26:</u> S/A -11. <u>Area 27:</u> a portion of S/A -4. <u>Area 12:</u> S/A's -10 and -13 (chinook and coho retention only).
August 27 to August 28	Coho Pink Chum Chinook	Area 130-1 and a portion of Area 111 opened for coho, pink, chum and chinook 0001H August 27.	Areas opened to harvest pink salmon.	<u>Outside Surfline:</u> Areas 121 to 127, 130-1 and a portion of 111. <u>Conservation Areas:</u> A to L. <u>Inside Surfline:</u> As above.

Table 7. Summary of management actions for the 1993 West Coast Vancouver Island troll fishery (contd).

PERIOD	MANAGEMENT ACTION			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
August 29 to September 2	Sockeye Coho Pink Chum Chinook	Sockeye fishery reopened 0001H August 29. Area 130 and a portion of Area 111 opened 0001H August 29 to trolling for chinook, chum, coho and pink. Net areas of Area 12 opened to trolling for sockeye pink and chum.	Sockeye fishery reopened to harvest remaining allocation, following run size upgrade to 20 million on August 27.	<p><u>Outside Surfline:</u> Areas 121 to 127, 111 and 130-1.</p> <p><u>Conservation Areas:</u> A to L.</p> <p><u>Inside Surfline:</u> <u>Area 23:</u> S/A's -3 to -11 closed to sockeye.. <u>Area 24:</u> S/A's -2, -6 and -8. <u>Area 25:</u> S/A -7. <u>Area 26:</u> S/A -11. <u>Area 27:</u> a portion of S/A -4. <u>Area 11:</u> S/A -1 and a portion of -2. <u>Area 12:</u> S/A's -1, -3 to -6, -8 to -11, and portions of -5 and -12 (non-retention of chinook and coho), S/A's-10 and -13 (chinook and coho retention only).</p>
September 2 to September 3	Sockeye Coho Pink Chum Chinook	Uchucklesit Inlet (portion of Subarea 23-3) closed to trolling 1800H September 2. Net areas of Area 13 opened to trolling 1800H September 2.	Area closed to conserve Henderson Lake sockeye stock. Area 13 opening to provide further opportunities to harvest remaining sockeye allocation, following run size upgrade to 22 million on August 30.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> As above.</p> <p><u>Inside Surfline:</u> <u>Area 13:</u> S/A's -7 to -10 and -27 to -32 (non-retention of chinook and coho). <u>Area 23:</u> a portion of S/A -3 and -4 to -11 (closed to trolling for sockeye). All other area open as above.</p>

Table 7. Summary of management actions for the 1993 West Coast Vancouver Island troll fishery (contd).

PERIOD	MANAGEMENT ACTION			MANAGEMENT AREAS OPEN
	Species Open	Action	Purpose	
September 3 to September 12	Sockeye Coho Pink Chum Chinook	Area 21 opened to trolling for all species 1800H September 3.	Area opened to harvest local chinook stocks returning to Nitnat system.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> As above.</p> <p><u>Inside Surfline:</u> <u>Area 21:</u> all S/A's. All other areas as above.</p>
September 13 to September 18	Sockeye Coho Pink Chum Chinook	Non-retention of chinook in Areas 11 and 111 effective 0001H September 13.	Areas closed in conjunction with closure of North Coast chinook fishery.	<p><u>Outside Surfline:</u> Areas 121 to 127 and 130-1. Area 111 open , non-retention of chinook.</p> <p><u>Conservation Areas:</u> As above.</p> <p><u>Inside Surfline:</u> <u>Area 11:</u> open, non-retention of chinook. All other areas as above.</p>
September 19 to September 30	Sockeye Coho Pink Chum Chinook	Areas 12 and 13 closed to trolling 2359H September 18, except Subareas 12-10 and 12-13, which remain open for chinook and coho only.	Areas closed to protect chum stocks passing through Areas 12 and 13, and no further sockeye fishing opportunities available.	<p><u>Outside Surfline:</u> As above.</p> <p><u>Conservation Areas:</u> As above.</p> <p><u>Inside Surfline:</u> <u>Area 21:</u> all S/A's open, non-retention of chinook <u>Area 23:</u> a portion of S/A -3 and -4 to -11 (closed to trolling for sockeye). <u>Area 24:</u> S/A's -2, -6 and -8. <u>Area 25:</u> S/A -7. <u>Area 26:</u> S/A -11. <u>Area 27:</u> portion of S/A -4 . <u>Area 11:</u> open, non-retention of chinook. <u>Area 12:</u> S/A's -10 and -13, retention of chinook and coho only.</p>
October 1	CLOSED	Fishery closed 2359H September 30.	Fishery closed in accordance with fishing plan, regarding chum harvest guidelines, conservation concerns and low abundance of coho and chinook.	NONE

Table 8. Weekly catch and days fishing for the 1993 West Coast Vancouver Island troll fishery.

Statistical Week	Sockeye		Coho		Pink		Chum		Chinook		Effort	
	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Boat Days	Cumul. Effort
7/1	0	0	10,804	10,804	41	41	4	4	1,963	1,963	262	262
7/2	1	1	114,772	125,576	684	725	61	65	24,997	26,960	3,233	3,495
7/3	0	1	60,056	185,632	993	1,718	41	106	23,529	50,489	2,229	5,724
7/4	163	164	227,150	412,782	6,548	8,266	129	235	48,543	99,032	4,135	9,859
7/5	284	448	145,653	558,435	9,481	17,747	406	641	26,319	125,351	3,401	13,260
8/1	6,628	7,076	138,606	697,041	18,776	36,523	434	1,075	28,642	153,993	3,680	16,940
8/2	522,576	529,652	36,602	733,643	187,046	223,569	1,553	2,628	21,067	175,060	4,065	21,005
8/3	309,738	839,390	16,007	749,650	106,159	329,728	1,271	3,899	9,749	184,809	2,423	23,428
8/4	1,717	841,107	55,609	805,259	44,140	373,868	201	4,100	26,134	210,943	3,074	26,502
9/1	82,610	923,717	42,092	847,351	272,079	645,947	2,194	6,294	19,681	230,624	2,445	28,947
9/2	98,749	1,022,466	42,688	890,039	264,583	910,530	2,781	9,075	22,921	253,545	2,349	31,296
9/3	21,977	1,044,443	32,649	922,688	104,257	1,014,787	2,990	12,065	13,268	266,813	2,305	33,601
9/4	5,388	1,049,831	17,857	940,545	38,975	1,053,762	1,928	13,993	5,596	272,409	1,489	35,090
10/1	1,882	1,051,713	7,810	948,355	12,707	1,066,469	1,280	15,273	4,298	276,707	981	36,071
Total	1,051,713		948,355		1,066,469		15,273		276,707		36,071	

Notes: Catch and effort estimates are from ISCMP, accessed March 3, 1994.
 Sockeye, pink and chum catches are from Statistical Areas 11, 111, 12, 21-27, 121-127 and 130-1.
 Coho catches are from Statistical Areas 21-27, 121-127 and 130-1.
 Chinook catches are from Statistical Areas 12, 21-27, 121-127 and 130-1.
 Effort estimates are from Statistical Areas 21-27, 121-127 and 130-1.

Table 9. Catch and effort by Statistical Area for the 1993 West Coast Vancouver Island troll fishery.

Statistical Area	Species					Boat Days
	Sockeye	Coho	Pink	Chum	Chinook	
11/111	206,988	0	82,387	1,417	0	2,509
12	208,585	16,389	524,912	5,195	4,038	3,878
13	8,108	0	14,912	336	0	192
21/121	13,966	62,850	32,358	341	5,885	1,217
23/123	60,500	313,913	65,501	478	63,376	8,099
24/124	148,521	150,759	76,181	308	37,012	6,144
25/125	98,043	91,313	55,826	548	28,290	3,738
26/126	38,442	107,669	31,957	727	38,628	4,079
27/127	268,560	221,851	182,435	5,923	99,478	12,794
Total	1,051,713	964,744	1,066,469	15,273	276,707	42,650

Notes: Catch and effort estimates are from ISCMP, accessed March 3, 1994.
 Coho catch from Statistical Area 11/111 is assigned to North Coast catch.
 Chinook catch from Statistical Area 11/111 is assigned to North Coast catch..
 Chinook catch from Area 12 includes Inside Troll catch.

Table 10. Catch by species and year for the West Coast Vancouver Island troll fishery, 1981-1992.

Year	Species				
	Sockeye	Coho	Pink	Chum	Chinook
1981	72,317	1,390,315	3,687,219	16,315	411,446
1982	2,229,471	1,780,104	48,227	79,024	554,059
1983	141,408	2,193,206	2,340,430	24,449	404,549
1984	47,761	2,183,765	80,370	20,210	470,522
1985	1,098,879	1,389,055	2,476,389	280,705	357,630
1986	1,831,349	2,157,449	201,020	365,270	346,051
1987	498,526	1,824,723	644,768	18,586	381,713
1988	75,455	1,597,459	644,769	69,586	410,549
1989	1,207,299	1,955,430	2,301,721	32,013	206,510
1990	1,998,411	1,846,608	528,375	11,275	300,602
1991	1,412,283	1,890,213	1,437,534	14,069	204,183
1992	222,648	1,673,240	201,827	50,713	349,935

Notes: Catches are from ISCMP, March 3, 1994.
 Sockeye and pink catches include Areas 21-27, 121-127, 130-1 and 12 (Outside).
 Coho and chum catches include Areas 21-27, 121-127 and 130-1.
 Chinook catches include Areas 21-27, 121-127, 130-1 and 12 (Inside and Outside).

Table 11. Troll vessel counts by overflight for the 1993 West Coast Vancouver Island troll fishery.

Stat Week	Date	Statistical Area									Day Total	Week Total
		11	12	21	23	24	25	26	27	30		
7/1	2-Jul	82	13	N/A	109	119	54	138	137	N/A	652	652
7/2	5-Jul	38	14	2	76	87	8	45	178	N/A	448	448
7/3	13-Jul	40	13	12	138	58	9	91	146	N/A	507	507
7/4	19-Jul	20	12	19	27	72	23	71	108	N/A	352	702
	23-Jul	4	14	41	35	65	40	59	92	N/A	350	
7/5	26-Jul	24	18	28	50	89	24	101	100	N/A	434	904
	29-Jul	33	28	3	51	81	80	96	98	N/A	470	
8/1	3-Aug	N/A	N/A	22	56	41	19	40	85	N/A	263	1138
	7-Aug	62	N/A	N/A	69	341	46	55	300	2	875	
8/2	10-Aug	226	134	13	43	412	39	31	170	N/A	1068	1961
	13-Aug	324	150	87	38	68	8	124	94	N/A	893	
8/3	21-Aug	9	29	32	56	57	21	30	271	N/A	505	505
8/4	25-Aug	N/A	32	23	107	59	187	62	219	N/A	689	689
9/1	31-Aug	1	225	51	38	69	9	21	50	N/A	464	464
9/2	7-Sep	3	N/A	31	49	23	18	106	82	N/A	312	312
9/3	12-Sep	4	84	14	16	22	10	41	77	N/A	268	268
9/4	21-Sep	2	1	15	51	31	12	31	45	N/A	188	188
10/1	26-Sep	2	7	8	18	17	14	24	26	N/A	116	116

Table 12. Summary of management actions for the 1993 Johnstone Strait troll fishery.

PERIOD	MANAGEMENT ACTIONS				MANAGEMENT AREA OPEN
	STAT AREA	SPECIES OPEN	ACTION	PURPOSE	
Jun. 28 to Jun. 30	11	CLOSED	None.		NONE
	12	CLOSED	None.		NONE
	13	Coho Pink Chum Chinook	Fishery opened to inside licensed trollers	Commence troll season in conjunction with Strait of Georgia.	S/A's -1 to -3, -14 to -20 and -23.
Jul. 1 to Jul.22	11	Coho Chum Chinook	Fishery open to outside licensed trollers.	Commence troll season in conjunction with WCVI.	S/A -1 and a portion of -2; 7 days per week.
	12	Coho Chinook	Deserters Group fishery open to inside and outside licensed trollers.	Commence troll season in conjunction with WCVI.	S/A's -10 and -13; 7 days per week.
	13	Coho Pink Chum Chinook	No change.		S/A's -1 to -3, -14 to -20 and -23.
Jul. 23 to Aug.2	11	Coho Chum Chinook	No change		S/A -1 and a portion of -2; 7 days per week.
	12	Coho Chinook	No change.		S/A's -10 and -13; 7 days per week.
	13	Coho Pink Chum	Chinook non-retention implimented.	Inside troll catch approaches chinook allocation.	S/A's -1 to -3, -14 to -20 and -23.
Aug. 3 to Aug. 4	11	Coho Chum	Chinook non-retention implimented.	Closed in conjunction with North Coast chinook closure.	S/A -1 and a portion of -2, non-retention of chincok; 7 days per week.
	12	Coho Chinook	No change.		S/A's -10 and -13; 7 days per week.
	13	Coho Pink Chum	No change.		S/A's -1 to -3, -14 to -20 and -23.
Aug. 5 to Aug. 6	11	CLOSED	Outside troll fishery closed.	Fishery closed prior to sockeye opening.	NONE.
	12	Coho Chinook	Closed to Outside trollers.	Fishery closed prior to sockeye opening.	S/A's -10 and -13, inside trollers only; 7 days per week.
	13	Coho Pink Chum	No change.		S/A's -1 to -3, -14 to -20 and -23.

Table 12. Summary of management actions for the 1993 Johnstone Strait troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS				MANAGEMENT AREA OPEN
	STAT AREA	SPECIES OPEN	ACTION	PURPOSE	
Aug. 7 to Aug. 8	11	Sockeye Coho Pink Chum	Sockeye fishery opened for Outside trollers.	Commence Outside sockeye fishery.	S/A -1 and a portion of -2; 7 days per week.
	12	Coho Chinook	Re-opened to Outside trollers.	In conjunction with Outside troll fishery re-start.	S/A's -10 and -13; 7 days per week.
	13	Sockeye Coho Pink Chum	Sockeye fishery opened for inside trollers, with some net areas open.	Commence sockeye fishery in concert with Strait of Georgia.	S/A's -1 to -3, -7 to -10, -14 to -20, -23 and -27 to -32.
Aug. 9 to Aug. 11	11	Sockeye Coho Pink Chum	No change.		S/A -1 and a portion of -2; 7 days per week.
	12	All Species	Outside trollers permitted in seine areas, inside trollers in gillnet areas 1800H August 9. Deserters Group fishery unchanged.	Commence harvest of sockeye allocation.	S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12 (non-retention of chinook and coho). S/A's -10 and -13 as above.
	13	Sockeye Coho Pink Chum	Net area opening for inside trollers ends 2359 August 8.	Pace sockeye fishery.	S/A's -1 to -3, -14 to -20 and -23.
Aug. 11 to Aug. 13	11	Sockeye Coho Pink Chum	No change.		S/A -1 and a portion of -2; 7 days per week.
	12	All Species	Seine area opening for outside licensed trollers ends 1800H August 11. Gillnet area opening for inside trollers ends 1800H August 13.	Pace sockeye fishery.	S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12 (non-retention of chinook and coho). S/A's -10 and -13; 7 days per week (chinook and coho only).
	13	Sockeye Coho Pink Chum	No change.		S/A's -1 to -3, -14 to -20 and -23.
Aug. 14	11	Sockeye Coho Pink Chum			S/A -1 and a portion of -2; 7 days per week.
	12	Coho Chinook	No change.		S/A's -10 and -13; 7 days per week.
	13	Coho Pink Chum	Inside trollers closed to sockeye retention.	Pace sockeye fishery.	S/A's -1 to -3, -14 to -20 and -23.

Table 12. Summary of management actions for the 1993 Johnstone Strait troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS				MANAGEMENT AREA OPEN
	STAT AREA	SPECIES OPEN	ACTION	PURPOSE	
Aug. 15	11	CLOSED	Outside troll fishery closed.	Prevent enforcement problem with illegal retention of sockeye.	NONE.
	12	Coho Chinook	Deserters Group fishery open to inside licensed trollers only.	Closed to outside trollers in conjunction with WCVI fishery closure.	S/A's -10 and -13; 7 days per week.
	13	Sockeye Coho Pink Chum	No change.		S/A's -1 to -3, -14 to -20 and -23.
Aug. 16 to Aug. 17	11	CLOSED	No change.		NONE
	12	All Species	Sockeye fishery re-opened for inside trollers. Inside trollers permitted in gillnet areas.	Continue harvest of sockeye allocation.	S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12 (non-retention of chinook and coho). S/A's -10 and -13 as above.
	13	Sockeye Coho Pink Chum	No change.		S/A's -1 to -3, -14 to -20 and -23.
Aug. 18 to Aug. 27	11	CLOSED	Outside troll fishery re-opened August 19, Area 11 remains closed	Area closed due to high sockeye abundance.	NONE
	12	Coho Chinook	Gillnet area opening for inside licensed trollers ends 2359H August 17. Deserters Group fishery unchanged.	Pace sockeye fishery.	S/A's -10 and -13; 7 days per week (chinook and coho only).
	13	Coho Pink Chum	Non-retention of sockeye implimented 2359H August 17.		S/A's -1 to -3, -14 to -20 and -23 (non-retention and non-possession of chinook and sockeye).
Aug. 28	11	CLOSED	No change.		NONE
	12	Coho Chinook	No change.		S/A's -10 and -13; 7 days per week (chinook and coho only).
	13	Coho Pink Chum	Duncan Bay (portion of 13-3) Closed to all trolling 2359H August 27 to 2359H August 28.	Area closed due to high incidence of sockeye shakers.	S/A's -1, -2, portion of -3, -14 to -20 and -23.

Table 12. Summary of management actions for the 1993 Johnstone Strait troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS				MANAGEMENT AREA OPEN
	STAT AREA	SPECIES OPEN	ACTION	PURPOSE	
Aug. 29 to Aug. 31	11	All Species	Fishery reopened 0001H August 29, following run size upgrade August 27.	Harvest remaining allocations and ceilings.	S/A -1 and a portion of -2; 7 days per week.
	12	All Species	Net areas opened to outside licensed trollers 0001H August 29. Deserters Group fishery remains open to inside licensed trollers only.	Harvest remaining allocations and ceilings.	S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12, outside trollers (non-retention of chinook). S/A's -10 and -13, inside trollers (chinook and coho only).
	13	Sockeye Coho Pink Chum	Net areas opened to inside licensed trollers 0001H August 29.	Harvest remaining allocations and ceilings.	S/A's -1, -3 to -6, -14 to -20, -23, and -27 to -32.
Sept. 1	11	All Species	No change.		S/A -1 and a portion of -2; 7 days per week.
	12	All Species	No change.		S/A's -1, -3, -4, -8 to -11, and portions of -5 and -12, outside trollers (non-retention of chinook). S/A's -10 and -13, inside trollers (chinook and coho only).
	13	All Species	Chinook retention allowed to inside trollers 0001 H September 1.	Harvest remaining ceiling.	S/A's -1, -3 to -6, -14 to -20, -23, and -27 to -32.
Sept. 2 to Sept. 12	11	All Species	No change.		S/A -1 and a portion of -2; 7 days per week.
	12	Sockeye Coho Pink Chum Chinook	Net areas opened to inside licensed trollers 1800H September 2. Deserters Group fishery unchanged.	Harvest remaining allocations and ceilings.	S/A's -1, -3 to -6 and -8 to -12, and a portion of -18 (non-retention of chinook and coho). S/A's -10 and -13; 7 days per week (chinook and coho only).
	13	All Species	Net areas opened for outside licensed trollers 1800H September 2.	Harvest remaining allocations and ceilings.	S/A's -1, -3 to -6, -14 to -20, -23, and -27 to -32, inside trollers. S/A's -7 to -10 and -27 to -32, outside trollers (non-retention and non-possession of chinook and coho).

Table 12. Summary of management actions for the 1993 Johnstone Strait troll fishery (contd).

PERIOD	MANAGEMENT ACTIONS				MANAGEMENT AREA OPEN
	STAT AREA	SPECIES OPEN	ACTION	PURPOSE	
Sept. 13 to Sept 18.	11	Sockeye Coho Pink Chum	Chinook non-retention implimented 0001H September 13.	Chinook fishery closed in concert with North Coast fishery closure.	S/A -1 and a portion of -2 (non-retention of chinook).
	12	Sockeye Coho Pink Chum Chinook	No change.		S/A's -1, -3 to -6 and -8 to -12, and a portion of -18 (non-retention of chinook and coho). S/A's -10 and -13; 7 days per week (chinook and coho only).
	13	All Species	No change.		S/A's -1, -3 to -6, -14 to -20, -23, and -27 to -32, inside trollers. S/A's -7 to -10 and -27 to -32, outside trollers (non-retention and non-possession of chinook and coho).
Sept. 19 to Sept. 30	11	Sockeye Coho Pink Chum	No change.		S/A -1 and a portion of -2 (non-retention of chinook).
	12	Coho Chinook	Net areas closed to all trolling 2359H September 18.	Areas closed to protect migrating chum stocks.	S/A's -10 and -13; 7 days per week (chinook and coho only).
	13	Coho Chum	Net areas closed to all trolling 2359H September 18. Non-net areas open to inside licensed trollers only.	Areas closed in concert with closures for sockeye, pink and chinook in the Strait of Georgia.	S/A's -1 to -3 -14 to -20, and -23 (coho and chum only).
Oct. 1	11	CLOSED	All troll fisheries closed 2359H September 30.	Fisheries closed as per fishing plan.	NONE
	12	CLOSED			NONE
	13	CLOSED			NONE

Table 13. Weekly catch and days fished for the 1993 Johnstone Strait troll fishery.

Statistical Week	Sockeye		Coho		Pink		Chum		Chinook		Effort	
	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Catch	Cumul. Catch	Boat Days	Cumul. Effort
7/1	0	0	1,130	1,130	1	1	2	2	19	19	85	85
7/2	1	1	11,985	13,115	47	48	9	11	374	393	364	449
7/3	0	1	6,107	19,222	70	118	14	25	294	687	236	685
7/4	45	46	4,972	24,194	29	147	41	66	193	880	209	894
7/5	0	46	6,178	30,372	72	219	6	72	94	974	199	1,093
8/1	688	734	9,623	39,995	526	745	45	117	176	1,150	351	1,444
8/2	260,125	260,859	3,553	43,548	96,910	97,655	931	1,048	138	1,288	1,590	3,034
8/3	90,011	350,870	676	44,224	40,824	138,479	240	1,288	12	1,300	679	3,713
8/4	3,374	354,244	3,048	47,272	5,977	144,456	9	1,297	146	1,446	177	3,890
9/1	78,088	432,332	2,655	49,927	221,380	365,836	1,496	2,793	1,473	2,919	1,294	5,184
9/2	94,463	526,795	3,030	52,957	225,390	591,226	1,875	4,668	781	3,700	1,630	6,814
9/3	18,421	545,216	859	53,816	67,943	659,169	1,228	5,896	231	3,931	627	7,441
9/4	6,444	551,660	594	54,410	30,864	690,033	1,026	6,922	91	4,022	301	7,742
10/1	738	552,398	33	54,443	4,262	694,295	454	7,376	14	4,036	61	7,803
Total	552,398		54,443		694,295		7,376		4,036		7,803	

Notes: Catch and effort estimates are from ISCMP, accessed March 3, 1994.
 Estimates include catches and effort in Statistical Areas 11, 111 and 12 by both license types and Outside license catch and effort from Statistical Area 13.
 Chinook catch estimate is for Statistical Area 12 only.

Table 14. Catch and effort by Statistical Area and troll license for the 1993 Johnstone Strait troll fishery.

Statistical Area	Troll License	Species					Boat Days
		Sockeye	Coho	Pink	Chum	Chinook	
11/111	Outside	206,988	23,803	82,387	1,417	7,523	2,508
12	Inside	128,717	14,251	72,084	428	956	1,225
	Outside	208,585	16,389	524,912	5,195	3,080	3,878
	Total	337,302	30,640	596,996	5,623	4,036	5,103
13	Inside	115,638	34,145	116,834	8,705	8,934	1,678
	Outside	8,108	0	14,912	336	0	192
	Total	123,746	34,145	131,746	9,041	8,934	1,870
Total	Inside	244,355	48,396	188,918	9,133	9,890	2,903
	Outside	423,681	40,192	622,211	6,948	10,603	6,578
Grand Total		668,036	88,588	811,129	16,081	20,493	9,481

Notes: Catch and effort estimates are from ISCMP, accessed March 3, 1994.
 Inside trollers were not allowed to fish in Statistical Area 11/111.
 Outside trollers were not allowed to retain chinook or coho in Statistical Area 13.

FIGURES

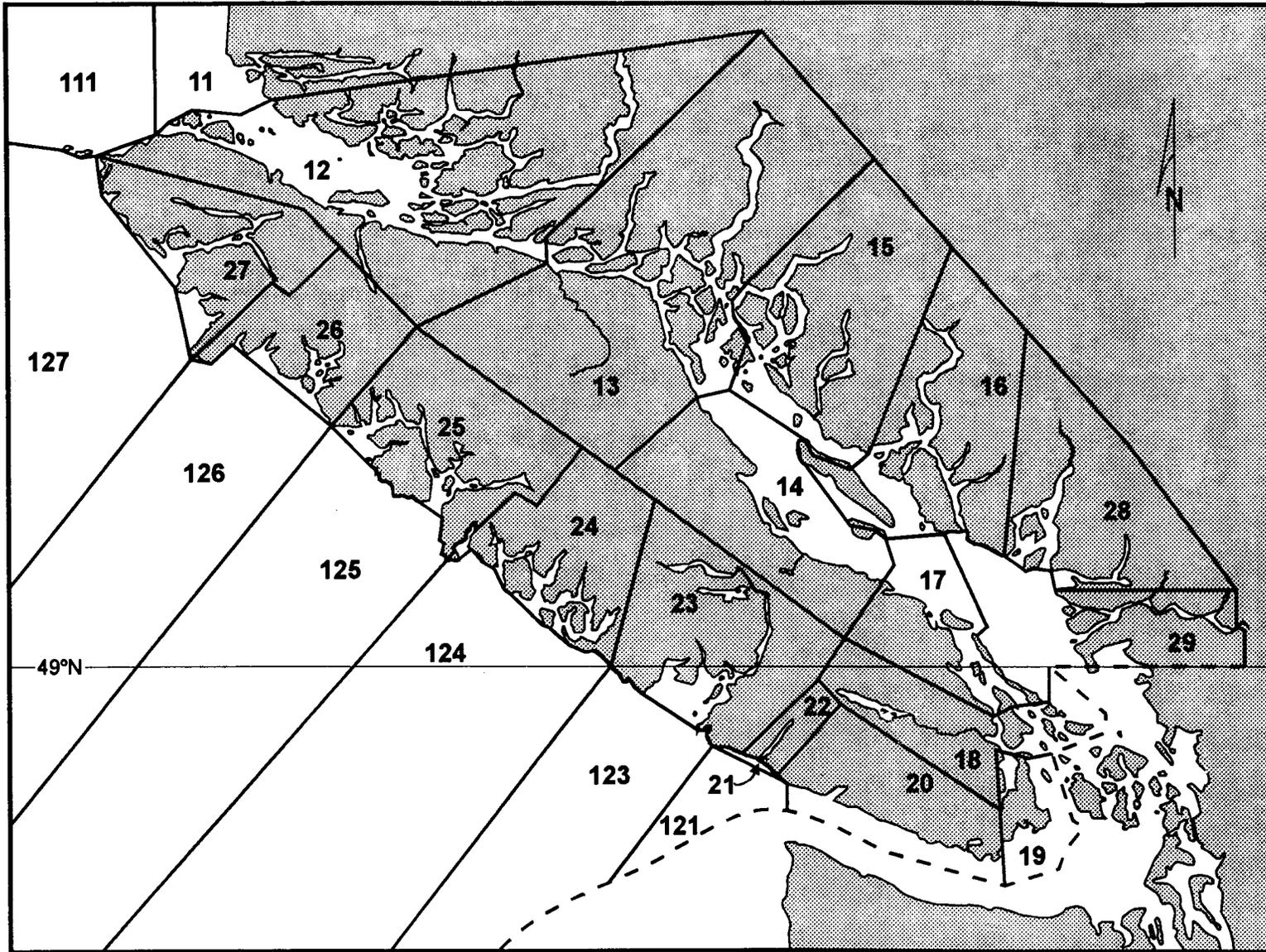


Figure 1. Statistical Areas of the South Coast of British Columbia.

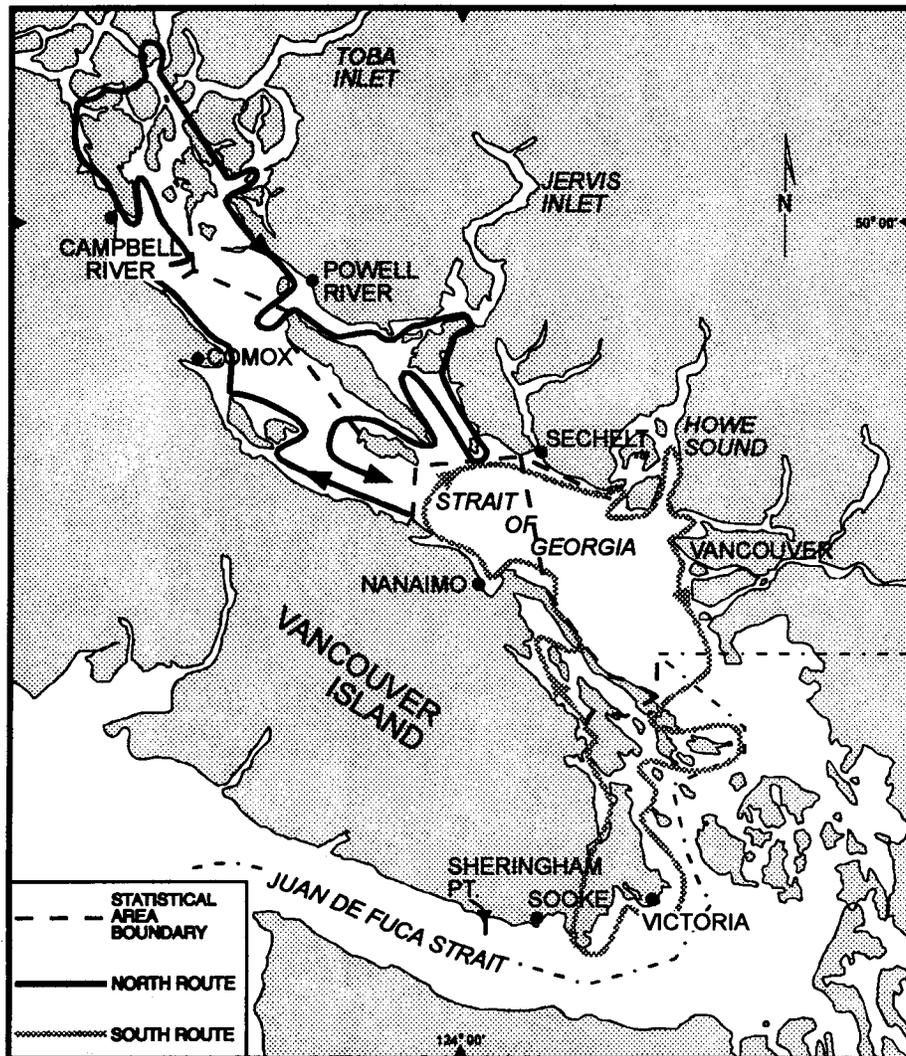


Figure 2. Overflight routes for troll vessel counts in the Strait of Georgia in 1993.

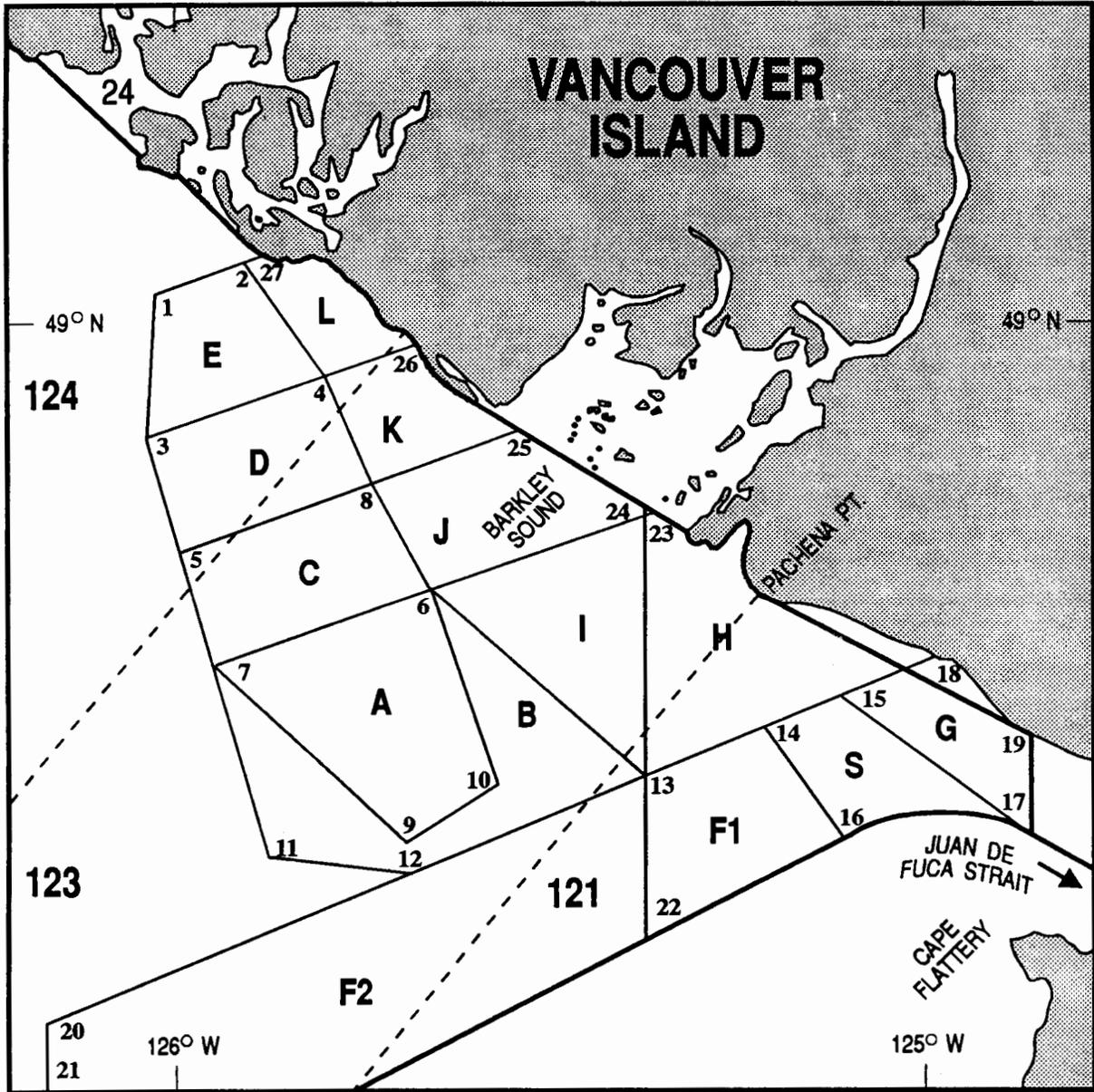


Figure 3. Conservation areas for the West Coast Vancouver Island troll fishery, 1993.

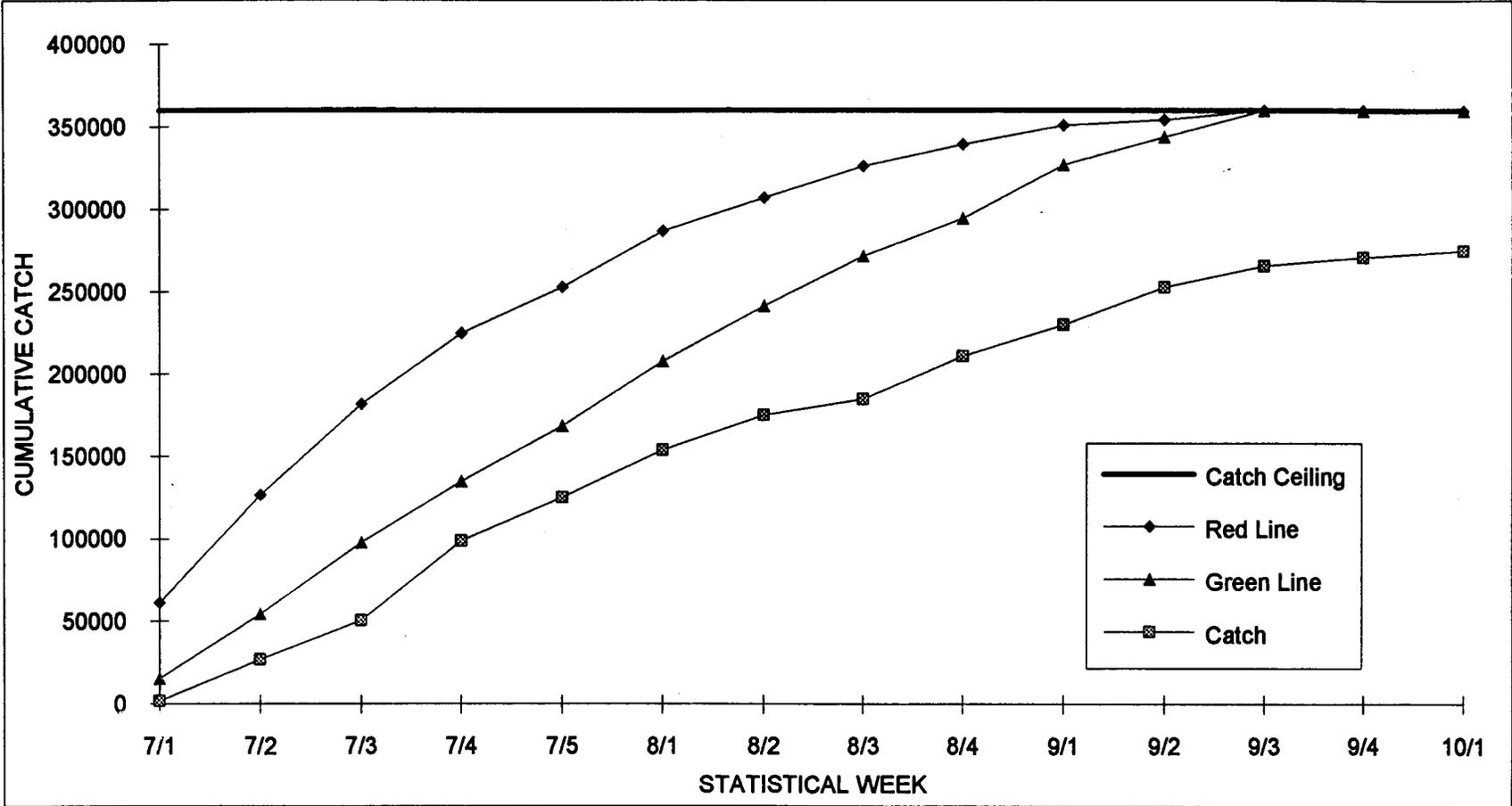


Figure 4. 1993 West Coast Vancouver Island chinook troll catch estimates compared to red and green lines.

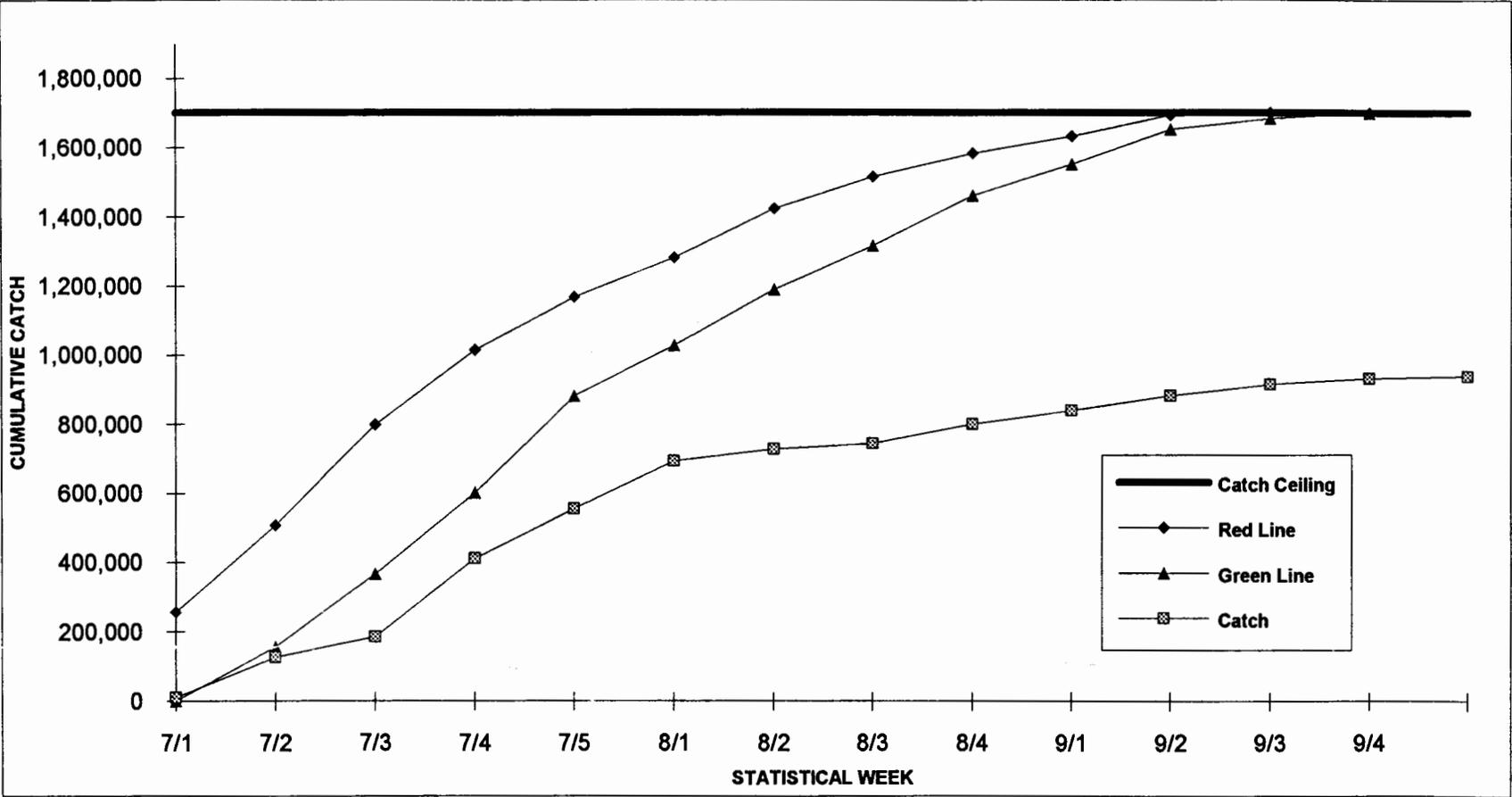
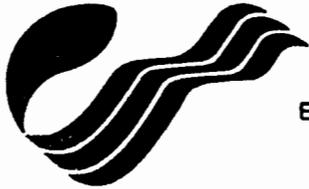


Figure 5. 1993 West Coast Vancouver Island coho catch estimates compared to red and green lines.

APPENDICES

APPENDIX 1

INFORMATION BULLETIN:
1993 SALMON TROLL FISHING PLANS
STRAIT OF GEORGIA AND JOHNSTONE STRAIT



Scientific Excellence • Resource Protection & Conservation • Benefits for Canadians
Excellence scientifique • Protection et conservation des ressources • Bénéfices aux Canadiens

PACIFIC REGION

1993 SALMON TROLL FISHING PLAN

Strait of Georgia and Johnstone Strait



Fisheries
and Oceans

Pêches
et Océans

Canada

1.0 INTRODUCTION

This fishing plan has been developed through meetings with the Inside Troll Advisory Committee which is composed of representatives of the Gulf Trollers Association and the United Fishermen and Allied Workers Union.

Catches are limited by Pacific Salmon Treaty quotas, domestic allocations, and stock abundance.

2.0 MANAGEMENT OBJECTIVES

The troll fishing plan for 1993 was developed with consideration of the following objectives.

1. **Minimize non-retention fisheries and the impacts of associated mortalities.**
2. **Maintain or increase the economic benefits to the troll fleet under current limitations.**
3. **Contribute to the Lower Strait of Georgia chinook conservation program.**
4. **Manage Northern and Southern Inside Troll areas as a co-ordinated unit.**
5. **Maintain manageability and enforceability of the plan.**
6. **Manage in a manner that fosters a positive relationship with other gear types, and meets long term Pacific Salmon Treaty objectives.**
7. **Minimize the loss of fishing opportunity on harvestable species resulting from conservation measures on another species.**

3.0 HIGHLIGHTS

1. **Trolling for salmon except sockeye will start June 28, 1993. The sockeye opening is expected to occur no earlier than on July 24th. Prior to this opening sockeye non-retention and non-possession will be in effect.**
2. **There are no size limit changes in 1993.**
3. **Catch-up/make-up for Fraser River sockeye is continuing. Allocation overages and underages in 1993 will be addressed in 1994 and/or later years.**
4. **Proposed management actions and catch information for the Inside Troll fleet will be broadcast on B.C. Telephone marine band frequencies on Wednesdays of each week at 1500 hours (July 7 - September 29, 1993) and additionally on Fridays at 1700 hours (July**

SOCKEYE

The allocations are two tiered in 1993 in accordance with the long term allocation plan. The base Canadian commercial catch is 8.3 million with an allocation for Inside Trollers of 2%. The allocation for any catch above 8.3 million is 5%. Because 1993 catch limits for U.S. fishers and other user groups are still uncertain, only a catch range is available for Canadian commercial fisheries. If the total allowable catch is between 9 and 10 million the Inside Troll allocation would be between 201,000 and 251,000. A specific catch target will be decided before the fishery starts.

PINK

As with sockeye the pink catch available for Canadian commercial fisheries is uncertain. The Inside troll catch is limited to 4% of the total Canadian commercial catch of all southern bound pinks. This may be about 15 million, and if so, the Inside Troll allocation would be approximately 600,000.

AREA 12

Due to expected low abundances a directed fishery on Study Area pinks is not anticipated for 1993.

CHUM

The chum allocation is not to exceed 1% of the total allowable commercial catch of Johnstone Strait - Fraser River stocks. The Canadian commercial catch is expected to be 350,000. Therefore the Inside Troll allocation is approximately 3,500.

4.2 ASSUMPTIONS REGARDING ABUNDANCE**CHINOOK**

Abundance similar to 1992 is expected.

COHO

Coho abundance is expected to be similar to the recent average.

SOCKEYE

Fraser River sockeye total run size is expected to be 17.4 million.

23 - August 13, 1993) on the following channels.

Port Hardy	CH24	Nanaimo	CH87
Sayward	CH28	Powell River	CH85
Campbell River	CH64	Ganges	CH27
Courtenay	CH23	Vancouver	CH24

Clarification of management actions or information should be directed to fishing representatives on the Inside Troll Advisory Committee.

- All times referred to in this plan are local times.
- Recorded phone services for troll information is provided at the following locations.

Vancouver	666-1506
Nanaimo	754-0281
Campbell River	287-2151

4.0 STRAIT OF GEORGIA AND JOHNSTONE STRAIT TROLL FISHING PLAN

4.1 ALLOCATIONS AND LIMITATIONS

CHINOOK

The chinook catch allocation for 1993 is 31,000. In the event of higher than expected chinook catches measures will be taken to slow the catch rate of chinook. If 29,000 of the 31,000 chinook ceiling is reached prior to the sockeye opening then **non-retention, non-possession and single barbless hooks** will be implemented until the sockeye fishery starts. This will allow an incidental catch of chinooks during sockeye and pink fisheries. If shaking of chinook salmon is above acceptable levels then additional conservation measures will be implemented through consultation with the In-season Advisory Committee. **Barbed hooks however, will be permitted during directed sockeye and pink fisheries.**

The minimum size limit for troll caught chinook is 62 cm nose-fork length for Areas 13 to 18 and 29. The minimum size limit for troll caught chinook is 67 cm nose-fork length in the Deserters Group (12-10 and 12-13).

There will be a chinook non-retention restriction in effect in the "Banana" Area of Area 29.

COHO

There is no coho ceiling and catch will be determined by abundance. The minimum size limit for troll caught coho is 30 cm nose-fork length for Areas 12 to 18 and 29.

PINK

Fraser River pink total run size is expected to be 31 million.

CHUM

Johnstone Strait - Fraser River chum total run size is expected to be 2.7 million.

4.3 PLAN DETAILS

This Troll Fishing Plan is for Statistical Areas 12 to 18 and 29, and the season is scheduled from June 28, 1993 to September 30, 1993. If all allocations and ceilings are reached prior to September 30, 1993 or severe conservation problems develop, the fishery may close earlier than anticipated.

CHINOOK, COHO, PINK AND CHUM OPENINGS

Inside Troll fishing will commence at 0001 hours June 28, 1993 and will be for 7 days per week in the following Areas:

Area 12 - Deserters group (Subareas 12-10 and 12-13 only) will open 7 days per week for chinook and coho only. This fishery will open to both Inside and Outside licensed vessels in conjunction with the opening date of the Outside Troll Fishery. This fishery will close if the chinook catch exceeds the seasonal ceiling of 5,000.

Area 13 - Subareas 13-1 to 13-3 and 13-14 to 13-20 and 13-23 open. Subareas 13-7 to 13-10 and 13-27 to 13-32 will remain closed until the sockeye opening date.

Area 14 - All Subareas open except 14-14 and 14-11 (Comox Harbour) which are closed.

Area 15 - All Subareas open except 15-6 (Toba Inlet).

Area 16 - All Subareas open.

Area 17 - All Subareas open except 17-7 (Ladysmith Harbour) and 17-14 (Nanaimo Harbour). On July 15, 1993 Subarea 17-15 (Outer Nanaimo Harbour) and a portion of 17-9 (Chemainus River mouth triangle boundary) will close to all trolling. On July 15, 1993, a portion of Subarea 17-13 southerly of a line from Malaspina Pt. on Gabriola Island to McKay Pt. on Newcastle Island and a portion of Subarea 17-16 northerly of Dodds Narrows will close to the retention of chinook salmon.

Area 18 - All Subareas open except 18-1, 18-8 (Cowichan Bay) and 18-11.

Area 29 - Subarea 29-5 only. Subareas 29-1 to 29-4 and 29-6 remain closed until the sockeye opening date.

Sport fishing spot closures in the above areas are also closed to commercial trolling.

SOCKEYE OPENINGS

There are a number of objectives governing the sockeye fishing plan. One is to achieve the allocation target. Another is to whenever possible provide sufficient and simultaneous fishing opportunities in Johnstone Strait and lower Strait of Georgia.

When the sockeye fishery starts, retention will be permitted 7 days per week in those Areas that opened June 28 for chinook, coho, pink and chum, with the following additions and exceptions:

AREA 12 (GREY AREA)

Trolling for sockeye, pink and chum in the gillnet areas of Area 12 is expected to open not sooner than July 26. If a seine fishery is scheduled for 1800 hours July 26 then trolling will also open at 1800 hours July 26 and would close at 2359 hours July 30. There will be non-retention and non-possession of chinook and coho salmon in these Areas. Trolling for chinook and coho only will continue 7 days per week in the Deserters Group (12-10 and 12-13).

If the seine fishery is delayed until the following week, trolling will also be delayed and will follow the same fishing pattern as scheduled for the first week.

AREA 13

Trolling for sockeye, coho, pink, chum and chinook in Subareas 13-7 to 13-10 and 13-27 to 13-32 (Area above Seymour Narrows) is expected to open not sooner than July 24. If a seine fishery is scheduled for 1800 hours July 26 trolling will open at 0001 hours July 24 and will close at 2359 hours July 25.

If the seine fishery is delayed until the following week trolling will also be delayed and will follow the same fishing pattern as scheduled for the first week.

AREAS 18 AND 29

These areas will be under the control of the Fraser River Panel for sockeye and pink fisheries in 1993. D.F.O. will request implementation of the following plan:

Subarea 18-4 (Pender Bluffs) and Subarea 29-5 open 7 days per week. Subareas 29-1 to 29-4, 29-6, 18-1 and 18-11 open in conjunction with Area 13 for 2 days commencing on 0001 hours Saturday, July 24 to 2359 hours Sunday, July 25 (if a seine fishery in Area 13 opens July 26).

In Area 29, the area known as the "Banana Area" will be closed for the retention of chinook salmon.

If no seine fishery occurs this week in Johnstone Strait, then trolling will also be delayed a week and will follow the same fishing pattern as scheduled for the first week.

ALL AREAS

If a second week of trolling for sockeye is required it will follow a similar fishing pattern except that Area 13 would open 0001 hours Sunday and close at 1700 hours Monday. However if the remaining allocation allows for a 3 day fishery in Areas 13 and 29, trolling in Area 13 would commence at 0001 hours Saturday and would close at 1700 hours Monday of that week. Trolling in Area 12 would commence at 1800 hours Monday of that week for 4 days dependent on remaining allocation. Trolling in Area 29 would commence at 0001 hours Friday and would close at 2359 hours Sunday of that week (subject to Fraser River Panel agreement).

There will be an attempt to reserve approximately 10% of the sockeye allocation for the directed pink fishery. This measure is intended to reduce the number of sockeye shakers during directed pink fisheries. In-season Advisors will be consulted to discuss the fishing plan for the second week as well as any further fishing opportunities.

If the sockeye run size is upgraded or a revision in catch is made after sockeye has closed, the Inside Sockeye Troll Fishery will resume to take any outstanding balance, providing the balance is greater than 5,000 sockeye.

PINK OPENINGS

In order to achieve the Fraser River Inside Troll allocation of pink salmon there will be directed pink fisheries in all Inside Troll Areas.

5.0 ENFORCEMENT**OBSERVE, RECORD AND REPORT 1-800-663-WILD (1-800-663-9453)**

Users of the resource have a responsibility to report violators. Any suspected or actual violations can be quickly and discretely passed on to the appropriate Enforcement Officer by telephoning the toll-free Observe, Record and Report (ORP) number for reporting fisheries, wildlife and pollution violations. Confidentiality is assured.

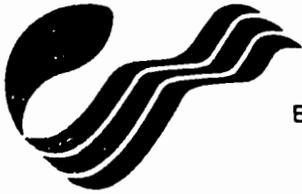
June 15 - November 30:	24 hour coverage
December 1 - June 14:	0700 - 2300 hrs coverage
	2300 - 0700 hrs leave a message

APPENDIX 2

INFORMATION BULLETIN:

1993 SALMON TROLL FISHING PLANS

WCVI AND NORTH COAST



Scientific Excellence • Resource Protection & Conservation • Benefits for Canadians
Excellence scientifique • Protection et conservation des ressources • Bénéfices aux Canadiens

PACIFIC REGION

1993 SALMON TROLL FISHING PLAN

West Coast Vancouver Island and North Coast



Fisheries
and Oceans

Pêches
et Océans

Canada

1.0 INTRODUCTION

These fishing plans have been developed through a series of meetings with the Outside Troll Advisory Committee which is composed of representatives of the Northern Trollers Association, the Pacific Trollers Association, the United Fishermen and Allied Workers Union, the Native Brotherhood, Nuu-chah-nulth Tribal Council, and the processing industry.

Catches are limited by Pacific Salmon Treaty quotas, domestic allocations, and stock abundance.

2.0 MANAGEMENT OBJECTIVES

The troll fishing plan for 1993 was developed with consideration of the following objectives.

1. Minimize non-retention fisheries and the impacts of associated mortalities.
2. Maintain or increase the economic benefits to the troll fleet under the current limitation.
3. Minimize the disruption of coastal communities, or a specific segment of the fleet.
4. Contribute to the Lower Strait of Georgia and Harrison chinook conservation programs.
5. Manage Northern and West Coast Vancouver Island Troll areas as a coordinated unit.
6. Maintain manageability and enforceability of the plan.
7. Manage in a manner that fosters a positive relationship with other gear types, and meets long term Pacific Salmon Treaty objectives.
8. Minimize the loss of fishing opportunity on harvestable species resulting from conservation measures on another species.

3.0 COASTWIDE HIGHLIGHTS

1. Trolling for chinook, coho, pink and chum will start July 1, 1993. The troll season is expected to end in the 3rd week of September but may continue to the end of September.
2. Pink salmon non-retention will be in effect in Areas 11, 26-11, 27-1 to 27-6, 111, 126-4, 127, 130, 142-1 and all Subareas inside the Surf Line in Area 2W south of Chads Point. Non-retention of pink salmon in these Areas will remain in effect until the opening date for Fraser River sockeye trolling.
3. The Fraser River sockeye troll fishery is expected to open not earlier than July 23. On the Fraser River sockeye opening date the Areas that were previously closed to pink retention will open to the retention of pink salmon.
4. Conservation Areas A to E, I to L and F2 on the West Coast of Vancouver Island (See Figure 1) will open on July 1, 1993. Areas S, G, F1 and H will be closed.

Some or all of these areas will open if the coho catch is below the green line, and there are no major conservation concerns.

5. The chinook size limit is unchanged in 1993, remaining at 67cm measured from the nose to the fork of the tail.
6. All times referred to in this plan are local times.
7. Proposed management actions and catch information will be broadcast to the fleet on Thursdays of each week at 1600 hours (July 8 to September 30) on the following B.C. Tel marine band frequencies:

Victoria	CH 86	Brooks Peninsula	CH 87
Jordan River	CH 23	Winter Harbour	CH 27
Pachena Point	CH 87	Holberg	CH 60
Bamfield	CH 27	Port Hardy	CH 24
Tofino	CH 24	Cape Caution	CH 02
Estevan Point	CH 23	Calvert Island	CH 23
Kyuquot	CH 01		

Clarification of management actions or information should be directed to In-season Advisors on the Outside Troll Advisory Committee.

8. Recorded phone service for troll information is provided at the following locations.

Vancouver 666-1506
Prince Rupert 627-7447
Tofino 725-3245 and 725-3398
Port Hardy 949-8181
Nanaimo 754-0281

4.0 WEST COAST VANCOUVER ISLAND TROLL FISHING PLAN

4.1 ALLOCATIONS AND LIMITATIONS

CHINOOK

The 1993 chinook troll catch expected for the West Coast of Vancouver Island is approximately 360,000. There is no Pacific Salmon Treaty catch ceiling in 1993, however, the objective of the plan is to make sure that chinook harvest rates do not exceed previous years. Catches contributing to the West Coast of Vancouver Island total come from Statistical Areas 21 to 27, 121, 123 to 127 and 130-1. In addition troll caught chinook from Area 12 (Deserters Group-Subareas 12-10 and 12-13) will be accounted for within the West Coast Vancouver Island chinook catch. In the Deserter Group there is a seasonal chinook catch ceiling of 5,000 pieces.

The troll management plan has been developed to minimize, where possible, non-retention fisheries and to allow the retention of chinook to about September 18. The management strategy that has been adopted to achieve these goals is the same as that used in previous years and includes a Red Line, Green Line cumulative catch concept. Red Line and Green Line catch levels (Table 1) signal the need for management interventions to slow down the catch when the Red Line is exceeded and to increase the catch when the Green Line is not reached. Hence, when Red Line catches are exceeded, closures will be implemented and when Green Line catches are not achieved area closures that are in place will be reopened. The opening sequence will be area E followed by D, C then A plus B if needed, unless information in-season indicates otherwise. Boundaries for Conservation Areas A to G and Swiftsure (Area S) remain the same as in 1992 and are shown in Figure 1. Notice for area closures will be a minimum of 48 hours while openings may be announced with less than 12 hours notice.

The catch ceiling for Areas 10, 11, 110 and 111 is 19,000 chinook. The catch ceiling plus the closure of portions of Area 10 and 11 (shown in Figure 2) are required to meet the goal of a 20% harvest rate reduction of Lower Strait of Georgia chinook stocks. This ceiling of 19,000 is still part of the overall North Coast chinook catch. If the catch ceiling of 19,000 is reached prior to the end of the season, then chinook non-possession and non-retention will be in effect in these Areas.

COHO

The Pacific Salmon Treaty catch ceiling for coho on the West Coast of Vancouver Island is 1.7 million fish. Catches contributing to the West Coast of Vancouver Island total come from Statistical Areas 21 to 27, 121, 123 to 127 and 130-1. Conservation Areas F1, S, G and H will be closed at the start of the season. These closures will help to reduce a problem of shaking undersized chinook salmon in this area early in the season and will reduce the catch of small coho. All or some of areas H, F1 and G will open if the coho catch is below the Green Line

and there are no major conservation concerns. The opening sequence will be area H, F1 then G unless information in-season suggests otherwise.

The Red Line/Green Line management strategy described for chinook will also be employed for coho to extend the fishing season, to minimize non-retention fisheries and shaker mortality, and to maximize landed value. Conservation Area F2 (Figure 1) and possibly others could be closed should catch proceed at a faster rate than the Red Line. Red and Green Line catch levels specific for coho are shown in Table 2.

The notification time for coho area openings and closures are the same as described above for chinook. Non-retention and non-possession will be implemented if the ceiling is reached.

The minimum size limit for coho is 30cm nose-fork length for all Outside Troll Areas.

SOCKEYE

Sockeye allocations are two tiered in 1993 in accordance with the long term allocation plan. The base Canadian commercial catch is 8.3 million with an allocation for Outside Trollers of 10%. The allocation for any catch above 8.3 million is 30%. Because 1993 catch limits for U.S. fishers and other user groups are still uncertain, only a catch range is available for Canadian commercial fisheries. The total allowable catch is between 9 and 10 million, therefore the Outside Troll allocation is expected to be between 1,040,000 and 1,340,000. A specific catch target will be decided before the fishery starts.

PINK

The catch of southern bound pink is limited to 29% of the total Canadian allowable commercial catch which is estimated to be between 16 and 17 million. Therefore the Outside Troll allocation is expected to be between 4.6 and 4.9 million.

CHUM

No escalation of harvest rates by the troll fleet.

4.2 ASSUMPTIONS REGARDING ABUNDANCE

CHINOOK

Abundance similar to 1992 is expected.

COHO

Abundance similar to recent average.

SOCKEYE

Fraser River sockeye total run size is expected to be 17.4 million.

PINK

Fraser River pink total run size is expected to be 31 million.

CHUM

Abundance expected to be low.

4.3 PLAN DETAILS**OUTSIDE SURFLINE (Areas 121 to 127, 130-1 and 111)****CHINOOK, COHO, PINK AND CHUM OPENINGS**

Outside Troll fishing will commence at 0001 hours July 1, 1993 and will be for 7 days per week in the following Areas:

Areas 121 to 127 inclusive, 130-1 and 111, except there will be non-retention of pink salmon in Areas 111, 126-4, 127, 130 and 142-1 from 0001 hours July 1, 1993 and until the opening date for Fraser River sockeye troll fishing.

In addition, Conservation Areas S, G, F1 and H will be closed to all trolling. All other Conservation Areas will open on July 1. (See Figure 1.)

Conservation Areas are defined as being the area within the position coordinates denoted below.

COORDINATE NUMBER	LORAN-C	LATITUDE (Degrees, Minutes)	LONGITUDE
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Conservation Area S (Swiftsure)

14	5990-Y-28960	5990-Z-41780	48°34.34'N	125°05.90'W
15	5990-Y-28960	5990-Z-41810	48°36.13'N	124°58.98'W
16	5990-Y-28904	5990-Z-41810	48°29.30'N	124°58.00'W
17	5990-Y-28875	5990-Z-41870	48°29.62'N	124°43.40'W

(Intersection of Bonilla-Tatoosh Line and Canada-U.S. Boundary)

Conservation Area G (Swiftsure)

15	5990-Y-28960	5990-Z-41810	48°36.13'N	124°58.98'W
18	Loran-C Line	5990-Y-28960 and Dare Point		
17	5990-Y-28875	5990-Z-41870	48°29.62'N	124°43.40'W
19	Bonilla Point Navigation Light			

Conservation Area A

7	5990-Y-29090	5990-Z-41570	48°39.25'N	125°57.20'W
8	5990-Y-29090	5990-Z-41650	48°43.68'N	125°37.62'W
9	5990-Y-28980	5990-Z-41650	48°28.70'N	125°37.72'W
10	5990-Y-28990	5990-Z-41680	48°32.00'N	125°30.10'W

Conservation Area B

7	5990-Y-29090	5990-Z-41570	48°39.25'N	125°57.20'W
8	5990-Y-29090	5990-Z-41650	48°43.68'N	125°37.62'W
11	5990-Y-29000	5990-Z-41600	48°28.13'N	125°50.65'W
12	5990-Y-28960	5990-Z-41660	48°26.62'N	125°35.20'W
13	5990-Y-28960	5990-Z-41740	48°31.85'N	125°15.30'W

Conservation Area C

5	5990-Y-29140	5990-Z-41550	48°45.30'N	126°01.50'W
6	5990-Y-29140	5990-Z-41630	48°49.43'N	125°41.90'W
7	5990-Y-29090	5990-Z-41570	48°39.25'N	125°57.20'W
8	5990-Y-29090	5990-Z-41650	48°43.68'N	125°37.62'W

COORDINATE NUMBER	LORAN-C	LATITUDE (Degrees, Minutes)	LONGITUDE
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Conservation Area D

3	5990-Y-29200	5990-Z-41530	48°52.85'N	126°05.30'W
4	5990-Y-29200	5990-Z-41610	48°56.60'N	125°46.22'W
5	5990-Y-29140	5990-Z-41550	48°45.30'N	126°01.50'W
6	5990-Y-29140	5990-Z-41630	48°49.43'N	125°41.90'W

Conservation Area E

1	5990-Y-29260	5990-Z-41530	49°01.34'N	126°04.05'W
2	5990-Y-29260	5990-Z-41580	49°03.39'N	125°52.55'W
3	5990-Y-29200	5990-Z-41530	48°52.85'N	126°05.30'W
4	5990-Y-29200	5990-Z-41610	48°56.60'N	125°46.22'W

Conservation Area F1

13	5990-Y-28960	5990-Z-41740	48°31.85'N	125°15.30'W
14	5990-Y-28960	5990-Z-41780	48°34.34'N	125°05.90'W
16	5990-Y-28904	5990-Z-41810	48°29.30'N	124°58.00'W
22	5990-Y-28899	5990-Z-41740	48°23.88'N	125°14.85'W

Conservation Area F2

13	5990-Y-28960	5990-Z-41740	48°31.85'N	125°15.30'W
20	5990-Y-28960	5990-Z-41530	48°16.75'N	126°11.55'W
21	5990-Y-28868	5990-Z-41530	48°01.62'N	126°14.60'W
22	5990-Y-28899	5990-Z-41740	48°23.88'N	125°14.85'W

Conservation Area H

18	Loran-C Line	5990-Y-28960	And Dare Point	
13	5990-Y-28960	5990-Z-41740	48°31.85'N	125°15.30'W
24	Loran-C Line	5990-Z-41740	And Surf Line	

COORDINATE NUMBER	LORAN-C	LATITUDE (Degrees, Minutes)	LONGITUDE
<u>Conservation Area I</u>			
13	5990-Y-28960	5990-Z-41740	48°31.85'N 125°15.30'W
24	Loran-C Line	5990-Z-41740	And Surf Line
8	5990-Y-29090	5990-Z-41650	48°43.75'N 125°37.35'W
23	Loran-C Line	5990-Y-29090	And Surf Line
<u>Conservation Area J</u>			
6	5990-Y-29140	5990-Z-41630	48°49.43'N 125°41.90'W
25	Loran-C Line	5990-Y-29140	And Surf Line
8	5990-Y-29090	5990-Z-41650	48°43.75'N 125°37.35'W
23	Loran-C Line	5990-Y-29090	And Surf Line
<u>Conservation Area K</u>			
4	5990-Y-29200	5990-Z-41610	48°56.60'N 125°46.22'W
26	Loran-C Line	5990-Y-29200	48°58.37'N 125°36.81'W
6	5990-Y-29140	5990-Z-41630	And Wya Point
25	Loran-C Line	5990-Y-29140	And Surf Line
<u>Conservation Area L</u>			
2	5990-Y-29260	5990-Z-41580	49°03.39'N 125°52.55'W
27	Loran-C Line	5990-Y-29260	49°04.00'N 125°49.30'W (Vicinity Portland Point)
4	5990-Y-29200	5990-Z-41610	48°56.60'N 125°46.22'W
26	Loran-C Line	5990-Y-29200	And Wya Point

CHINOOK, COHO, PINK AND CHUM OPENINGS

INSIDE SURFLINE (Areas 23 to 27, Area 11 and 12)

Outside Troll fishing will commence at 0001 hours July 1, 1993 and will be for 7 days per week in the following Areas:

Area 23 - All Subareas open, except 23-1 and 23-2 which remain closed until further notice.

Area 24 - All Subareas open until 2359 hours July 31, then only 24-2, 24-6 and 24-8 will remain open.

Area 25 - Subarea 25-7 only.

Area 26 - Subarea 26-11 only. There will be non-retention of pink salmon in Subarea 26-11 until the opening date for Fraser River sockeye troll.

Area 27 - All Subareas open except for Subareas 27-7, 27-8, 27-9, 27-10, and 27-11. There will be non-retention of pink salmon in Subareas 27-1 to 27-6 until the opening date for Fraser River sockeye. Effective 0001 hours, August 1 all of Area 27 will close with the exception of a portion of Subareas 27-4 and 27-6.

Area 10 - A portion of Subarea 10-1 and 10-2 lying north of a line due west from Bay Point to the surf line. (See Figure 2).

Area 11 - Subarea 11-1 and the portion of 11-2 lying west of a line from the northwest corner of Subarea 11-2 to Pine Island, thence to Bright Island in the Buckle Group, thence to the mainland following the Area 11 and 12 boundaries. (See figure 2).

There is non-retention of pink salmon in all of Area 11 from 0001 hours July 1, 1993 until trolling starts for Fraser River sockeye.

Area 12 (Grey Area) - Deserters group (Subareas 12-10 and 12-13 only) open 7 days per week for chinook and coho only. This fishery will close if the chinook catch exceeds the seasonal ceiling of 5,000. This fishery will open to both the Inside and Outside licensed vessels at 0001 hours July 1, 1993.

SOCKEYE OPENINGS

The Fraser River sockeye troll fishery is not expected to open earlier than July 23.

The Fraser River sockeye fishery will occur in the same Areas and Subareas that were open for chinook, coho and chum prior to the sockeye opening with the following exceptions:

Area 23 - will not open for sockeye.

Area 24 - Effective 0001 hours August 1 all Subareas closed except for 24-2, 26-6 and 24-8.

Area 27 - will close to all trolling effective 0001 hours August 1, 1993 except for a portion of Subareas 27-4 and 27-6.

Area 12 (Grey Area) - trolling by Outside licenced vessels will be permitted during seine fishing times and in seine fishing areas with non-retention and non-possession of chinook and coho. The ribbon boundary closure is also in effect for Outside trollers.

There will be no total troll closure prior to the sockeye troll opening date. Retention and possession of sockeye will be prohibited until the sockeye troll opening date. The Fraser River sockeye troll fishery is not expected to open earlier than July 23. The sockeye opening will probably be announced with less than 12 hours notice.

Once the sockeye allocation has been achieved a non-retention and non-possession fishery will be implemented. Some areas may close to all trolling if there is a high incidence of sockeye present in those areas at the time of the closure.

In the event that the sockeye run size is upgraded after trolling for sockeye is closed, and there is sufficient allocation to re-start the fishery, trolling for sockeye will re-open following consultation with In-season Advisors. The following guidelines would be used:

- (1) Retention and possession of sockeye will be permitted within all Outside Troll Areas that were previously open for sockeye and may include Areas 12 and 20 if required to reach allocation. Area 20 is controlled by the Fraser River Panel.
- (2) Sockeye restart openings and closures could be announced with less than 12 hours notice.

TABLE 1. CHINOOK TROLL RED AND GREEN LINE CATCHES
FOR WCVI IN 1993

STATISTICAL WEEK	RED LINE CATCHES	GREEN LINE CATCHES
7/1	61,437	15,359
7/2	126,637	54,273
7/3	181,715	97,847
7/4	224,972	134,983
7/5	252,985	168,657
8/1	286,761	207,655
8/2	307,172	241,349
8/3	325,973	271,644
8/4	339,505	294,655
9/1	350,747	326,909
9/2	354,325	343,800
9/3	360,000	360,000

TABLE 2. COHO TROLL RED AND GREEN LINE CATCHES
FOR WCVI IN 1993

STATISTICAL WEEK	RED LINE CATCHES	GREEN LINE CATCHES
7/1	256,356	0
7/2	507,154	156,047
7/3	798,958	366,735
7/4	1,013,884	601,457
7/5	1,167,498	880,744
8/1	1,281,938	1,027,860
8/2	1,424,215	1,189,024
8/3	1,515,405	1,317,128
8/4	1,583,020	1,461,249
9/1	1,632,355	1,552,337
9/2	1,694,382	1,652,233
9/3	1,700,000	1,683,000

5.0 NORTH COAST TROLL FISHING PLAN

5.1 ALLOCATIONS AND LIMITATIONS

SOCKEYE

The Outside troll catch ceiling is 5% of the Areas 1, 3, 4 and 5 all-gear, non-Fraser sockeye catch.

The North Coast troll catch of Fraser sockeye is included as part of the coastwide outside troll allocation.

COHO

The Skeena coho conservation actions implemented in 1989 through 1992 inclusive will continue in 1993 and will be imposed unless in-season indicators of stock strength (the adjusted Skeena Test Fishery Index) indicate they are not warranted.

PINK

The Area 2 through 10 troll allocation of North Coast Pink Salmon will be 4% of the Area 2 through 10 all gear catch of Northern Pink Salmon.

A four year, Area 1 pink troll arrangement has been negotiated for the period 1990-1993 as part of the Pacific Salmon Treaty.

The treaty arrangements are as follows:

- A) In any one year the A-B line strip will close to pink trolling when the catch in that area reaches 300,000 or by 22 July, whichever comes first.
- B) The total four-year Area 1 pink troll catch shall not exceed 5.125 million.
- C) In any one year the Area 1 pink troll catch shall not exceed 1.95 million. (Note: this catch has never been achieved).
- D) At the end of the four year period any underage up to a maximum of 1.025 million, and any overage will be made up in the subsequent four year period.

For 1993, there are 1.55 million pinks remaining from the 5.125 million annex allocation catch total.

CHUM

No escalation of harvest rates by the troll fleet.

CHINOOK

There is no Pacific Salmon Treaty catch ceiling for chinook fisheries in 1993, however the North Coast Troll fishery will be managed with similar objectives to those of recent years. The 1993 catch objective is 186,000.

The Area 10, 11, 110 and 111 total chinook troll catch is limited to 19,000 as part of lower Strait of Georgia chinook conservation measures (the 19,000 is part of the North Coast troll ceiling).

5.2 ASSUMPTIONS REGARDING ABUNDANCE

SOCKEYE

The returns of North Coast sockeye are expected to be average.

COHO

Skeena coho returns are expected to be poor based on recent trends.

PINK

The Central and North coast pink returns are expected to be above average.

CHUM

Chum abundance is expected to be low.

CHINOOK

Chinook abundance is projected to be similar to the past five years (1988 through 1992).

5.3 PLAN DETAILS

The following management areas will open to commercial trolling for coho, pink, chum and chinook salmon 0001 hrs, July 1, 1993. (Detailed times and areas of the sockeye and pink openings are outlined in the sockeye and pink sections.)

OUTSIDE SURFLINE - Areas 101 to 110, 142-2

INSIDE SURFLINE

Area	Sub-areas open
1	1-1, 1-2, 1-3, 1-5 and 1-7.
2E	All sub-areas.
2W	All sub-areas except 2-31 to 2-47
3	3-1.
4	None.
5	All sub-areas.
6	6-9, 6-11, 6-13, 6-17 and that portion of 6-10 seaward of a line from McPhee Point on Princess Royal Island to Eclipse Point on Campania Island.
7	7-1, 7-2, 7-18, 7-19, 7-20, 7-23, 7-25 7-26, 7-27 7-31 and 7-32.
8	8-1
9	None.
10	Those portions of sub-area 10-1 and 10-2 lying north of a line due west from Bay Point to the surfline.

Areas 1 - 10 will also open to trolling for all salmon species during net times and net areas after 0001 hrs. July 1, 1993. See next section for details on Sockeye.

Trollers should note that the lower west coast of the Queen Charlotte Islands will be closed to the retention of pink salmon.(refer to the Pink section for details)

EARLY SOCKEYE OPENINGS

The following portion of Dixon Entrance and Hecate Strait will open 0001 hrs, July 1, 1993 to sockeye troll fishing 7 days/week until further notice (See Figure 3):

Outside surfline - Areas 101, 102-1, 103, 104 and 105.

Inside Surfline - Area 1 (sub-areas 1-1, 1-2, 1-3, 1-5 and 1-7 only), Area 3 (sub-area 3-1 only) and Area 5 (all sub-areas).

These northern sockeye fishing areas will close to the retention and possession of sockeye when the areas 1, 3, 4 and 5 troll sockeye limit is reached, or on July 22 whichever comes first.

In addition, Areas 1 to 10 will be open to sockeye trolling during net times and areas from 0001 hours July 1 until 2359 hours July 22 when there will be non-retention and non-possession until the coastwide opening for Fraser River sockeye. All or a portion of the open areas may be closed to sockeye fishing on short notice if illegal fishing for Fraser sockeye becomes a problem prior to the coastwide opening.

All other North Coast areas will be closed to retention and possession of sockeye. These measures are considered necessary to support enforcement of sockeye non-possession and non-retention during the period prior to the coastwide Fraser sockeye opening.

COASTWIDE FRASER SOCKEYE OPENING

North Coast troll areas will open for sockeye trolling as part of the coastwide Fraser sockeye opening, which is expected to begin not earlier than July 23. (See the South Coast Sockeye Plan for further details.)

The portions of 142-1 and 142-2 seaward of the Chinook Redline boundary (as defined in the chinook section of this plan, and outlined in Figure 4) and sub-areas 130-2 and 130-3 will close to all trolling once the coastwide Fraser sockeye allocation is reached. If a Fraser sockeye restart is required, North Coast areas will be included.

After the coastwide Fraser sockeye ceiling is reached, Areas 1 - 10 will again close to the retention and possession of sockeye salmon during net times and areas.

COHO

There continues to be concern for the conservation of early-timed Skeena coho. The conservation measures implemented in 1989 through 1992 inclusive are also required for 1993. Accordingly, Area 4 inside the surfline will be closed to trolling except during net fishing times in net fishing areas (See Figure 5). If the troll fishery extends past September 1, 1993, sub-areas 4-1, 4-2, 4-3, 4-4, and 4-13 (and possibly other sub-areas) will reopen to trolling for late-run stocks.

In addition, a two week closure, starting July 25, 1993 may be implemented in that portion of Areas 102-1 and 104 North of 54 degrees (Figure 5). This closure will not be implemented if

the adjusted Skeena River Test Fishery Index indicates that the coho escapement target will be attained. If the boundary area that divides 101-10 and 104 causes significant enforcement problems the closed area will be expanded to include that portion of 101-10 East of 131 degrees 40 minutes (this is the North-South line running through the Rose Spit red can buoy).

If the North Coast chinook ceiling is attained prior to August 25, 1993, then the following closure to trolling will be implemented at 2359 hrs, August 25, 1993 to reduce chinook shaker problems:

Those portions of Subareas 101-10 East of Rose Point,
102-1 North of 54 degrees, 105-1 and Area 104.

If in-season information suggests that the relative abundances of coho and chinook in Area 105-1 will permit the fishery to continue, then consideration will be given to adjusting the closed area. Adjustments will be made in consultation with designated in-season advisors. The intent of this is to enhance the opportunity to fish coho in September, dependent on coho abundance.

PINK

Area 1 Pacific Salmon Treaty Agreement:

In order to comply with the Pacific Salmon Treaty agreement for 1993 the following management actions will be taken:

- 1) When the pink salmon troll catch in subareas 101-4, 101-8 and 101-3 North of 54 degrees 37 minutes and in Area 103 North of 54 degrees 37 minutes reaches 300,000 or at 2359 hrs, July 22, 1993 (whichever comes first) these areas will close to retention of pink. (Figure 7).
- 2) The Area 1 troll catch ceiling for pinks is 1.55 million.

Other Pink Considerations:

The majority of South Coast Study Area pink salmon stocks are predicted not to return in sufficient strength to support a fishery. Therefore, the following conservation actions will be taken.

Areas 142-1 and associated inshore areas South of Chads Point (Subareas 2-31 to 2-47 inclusive), 130 (all subareas), 127 (all subareas), 126-4, 111 and 11 will be closed to the retention of pink salmon until the troll fishery for Fraser River sockeye starts.

CHUM

No restrictions are anticipated.

CHINOOK

The management intent for the North coast troll fishery is to maintain the quality and economic base of the fishery and the opportunity to extend the season to harvest other species while minimizing shakers and the need for chinook off loading.

Redline closures will be implemented when in-season catches reach prescribed levels and when the North Coast chinook catch reaches 170,000 pieces, if this occurs prior to August 15, 1993. Redline closures will not be implemented before August 1, 1993 and every attempt will be made to coordinate any such closures with other management actions that may be required. In 1993, an area closure (see Figure 4) will be implemented when the Red Line values are reached.

The following points define the outside boundary of the closed area depicted in Figure 4:

		<u>LATITUDE</u>	<u>LONGITUDE</u>
		(Degrees, Minutes)	
POINT 1)	Commencing at Cape Naden		
POINT 2)	thence true North for approx. 6 miles to	54°13.20'N	132°35.00'W
POINT 3)	thence 275° true for 11.8 miles to	54°14.20'N	132°55.00'W
POINT 4)	thence 329° true for 3.2 miles to	54°17.00'N	132°57.80'W
POINT 5)	thence 270° true west for 9.19 miles to	54°17.00'N	133°13.40'W
POINT 6)	thence 215° true for 20.65 miles to (approx. 15.5 miles W off White Pt.)	54°00.00'N	133°33.50'W
POINT 7)	thence 145° true for 22.4 miles to (approx. 5.35 miles off of Louis Rock)	53°41.60'N	133°11.70'W
POINT 8)	thence 154° true for 25.2 miles to (approx. 4 miles W of Kindakun Rock)	53°19.00'N	132°52.90'W

POINT 9)	thence 149° true for 15.6 miles to (approx. 3.05 miles W of Buck Pt.)	53°05.60'N	132°39.60'W
POINT 10)	thence 144° true for 21.2 miles to (Approx. 3 miles W of Chads Pt)	52°48.20'N	132°19.00'W
POINT 11)	thence 138° true for approx. 32.5 miles to (approx. 4.9 miles W of Gowgaia Pt.)	52°24.00'N	131°43.50'W
POINT 12)	thence 142.5° true for 35.3 miles to a point at the interception of the area 130-3 boundary, 4.7 miles true W of Cape St. James.	51°56.17'N	131°08.60'W

The possibility exists to modify this closed area to permit access to other species after the chinook ceiling has been achieved and non-possession and non-retention of chinook has been implemented. Any modifications will be made in consultation with the designated in-season advisors.

Trollers are reminded that the latitudes and longitudes of the above noted points are the legal positions of the boundary and the bearings and ranges off points of land are only an "aid to navigation" and should be used with discretion.

LOWER STRAIT OF GEORGIA CHINOOK CONSERVATION MEASURES:

The following portions of Areas 10 and 11 will be closed to trolling for the season (See Figure 2):

- 1) Those portions of sub-areas 10-1 and 10-2 lying south of a line due West from Bay Point to the Surfline.
- 2) The portion of 11-2 lying shoreward of a line from the northwest corner of sub-area 11-2, to Pine Island, to Bright Island in the Buckle Group, then to the mainland following the Area 11 and 12 boundary.

In addition, the Area 10, 11, 110 and 111 total troll chinook catch is limited to 19,000. The 19,000 is part of the North Coast troll ceiling.

If the 19,000 ceiling or the North Coast troll ceiling is reached, chinook non-possession and non-retention will be in effect.

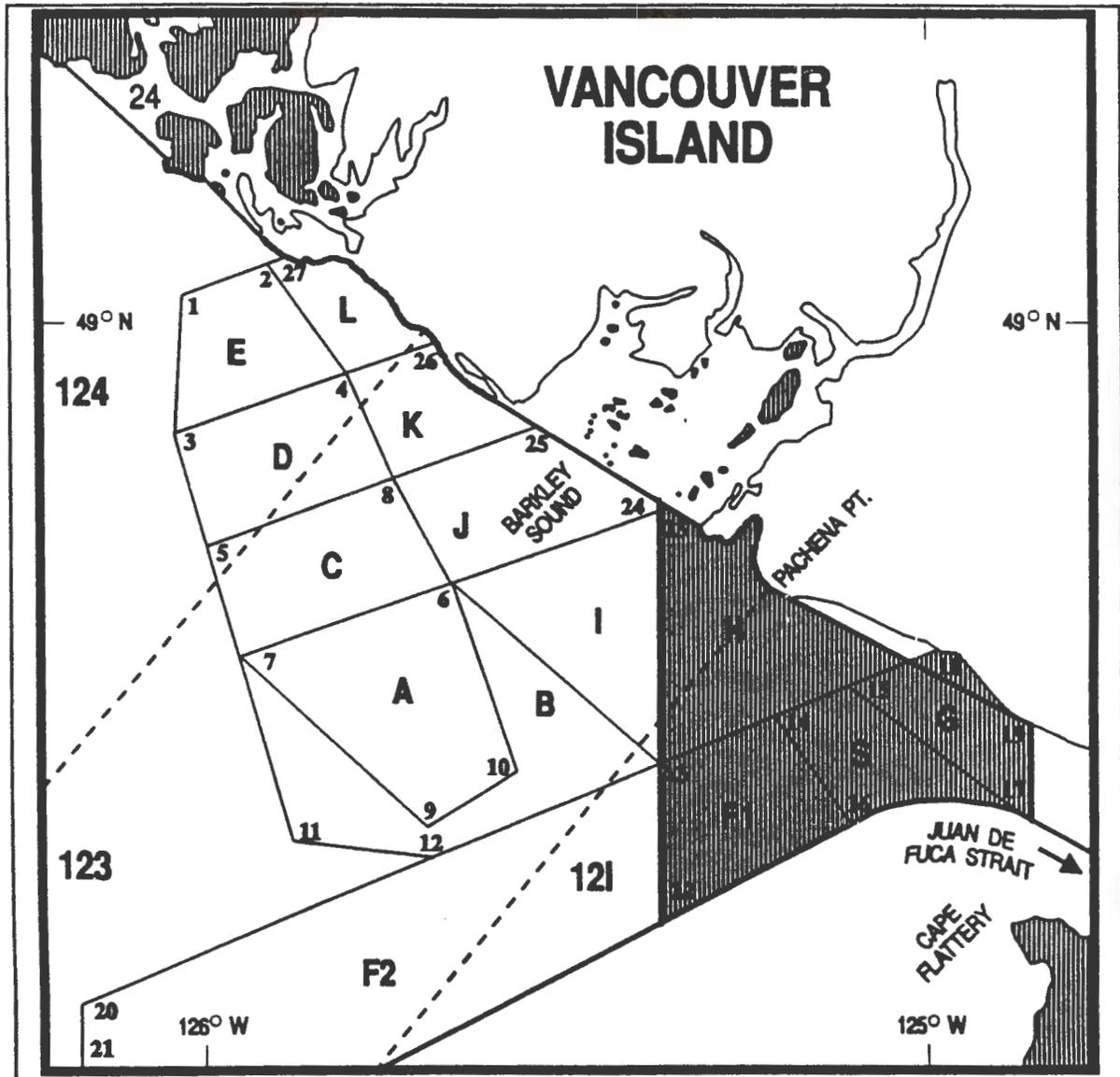
6.0 ENFORCEMENT

OBSERVE, RECORD AND REPORT 1-800-663-WILD (1-800-663-9453)

Users of the resource have a responsibility to report violators. Any suspected or actual violations can be quickly and discretely passed on to the appropriate Enforcement Officer by telephoning the toll-free Observe, Record and Report (ORR) Number for reporting fisheries, wildlife and pollution violations. Confidentiality is assured.

June 15 - November 30:	24 hour coverage
December 1 - June 14:	0700-2300 coverage
	2300-0700 leave a message

FIGURE 1. 1993 CONSERVATION AREAS

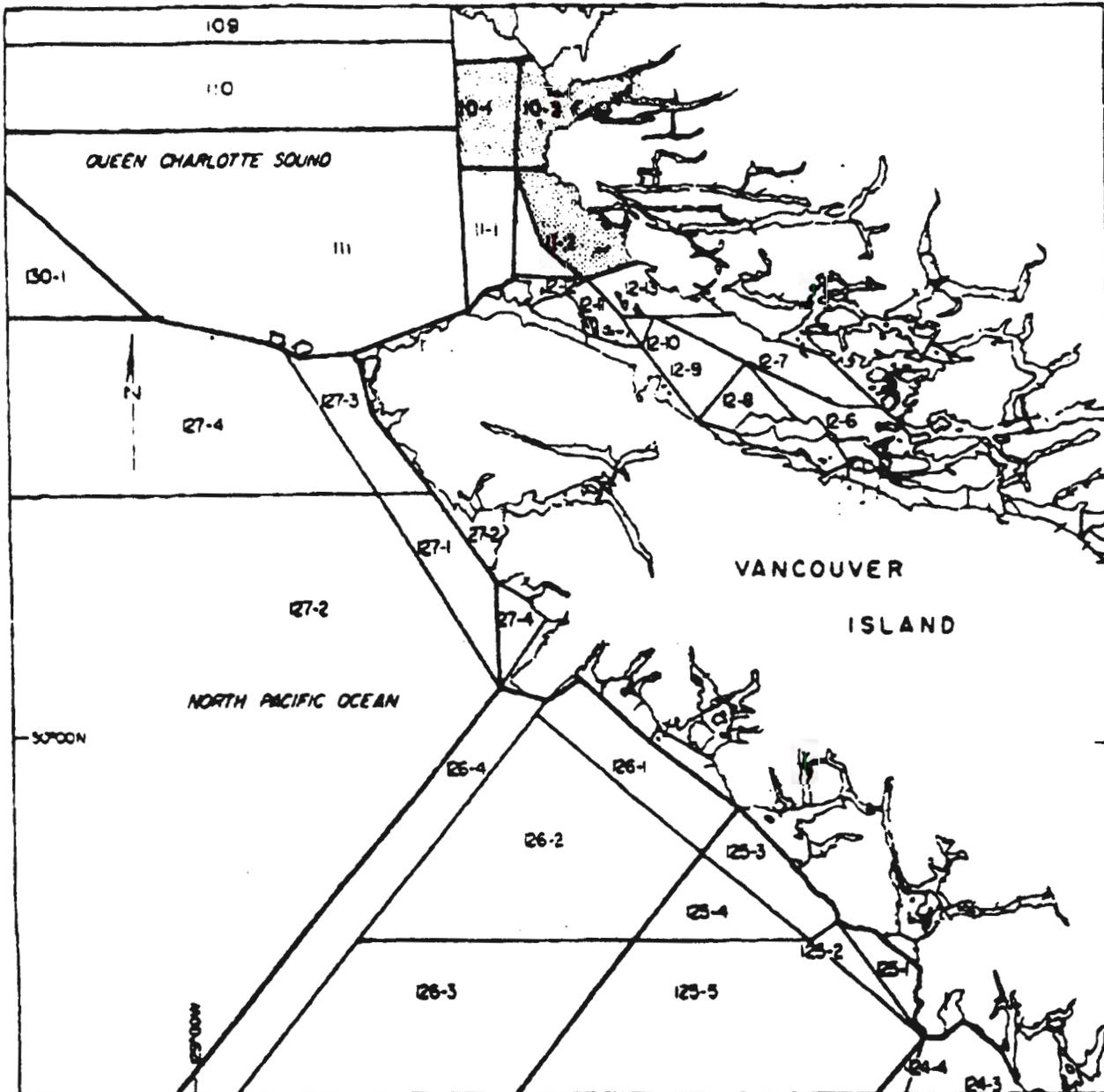


CHINOOK AND COHO CONSERVATION AREAS

A Chinook Conservation Area A
 B Chinook Conservation Area B
 C Chinook Conservation Area C
 D Chinook Conservation Area D
 E Chinook Conservation Area E
 G Chinook Conservation Area G
 S Chinook Conservation Area S

F1 Coho Conservation Area F1
 F2 Coho Conservation Area F2
 H Coho Conservation Area H
 I Coho Conservation Area I
 J Coho Conservation Area J
 K Coho Conservation Area K
 L Coho Conservation Area L

FIGURE 2. AREAS 10 AND 11 CLOSURES

**NOTE:**

The shaded area shows the closed portion of Areas 10 and 11. These areas are closed for the conservation of Lower Georgia Strait chinook. A catch ceiling of 19,000 is in effect in 1992 for Areas 111, 110, 11 and 10.

FIGURE 3. NORTH COAST EARLY SOCKEYE OPEN AREAS (DASHED ZONE).

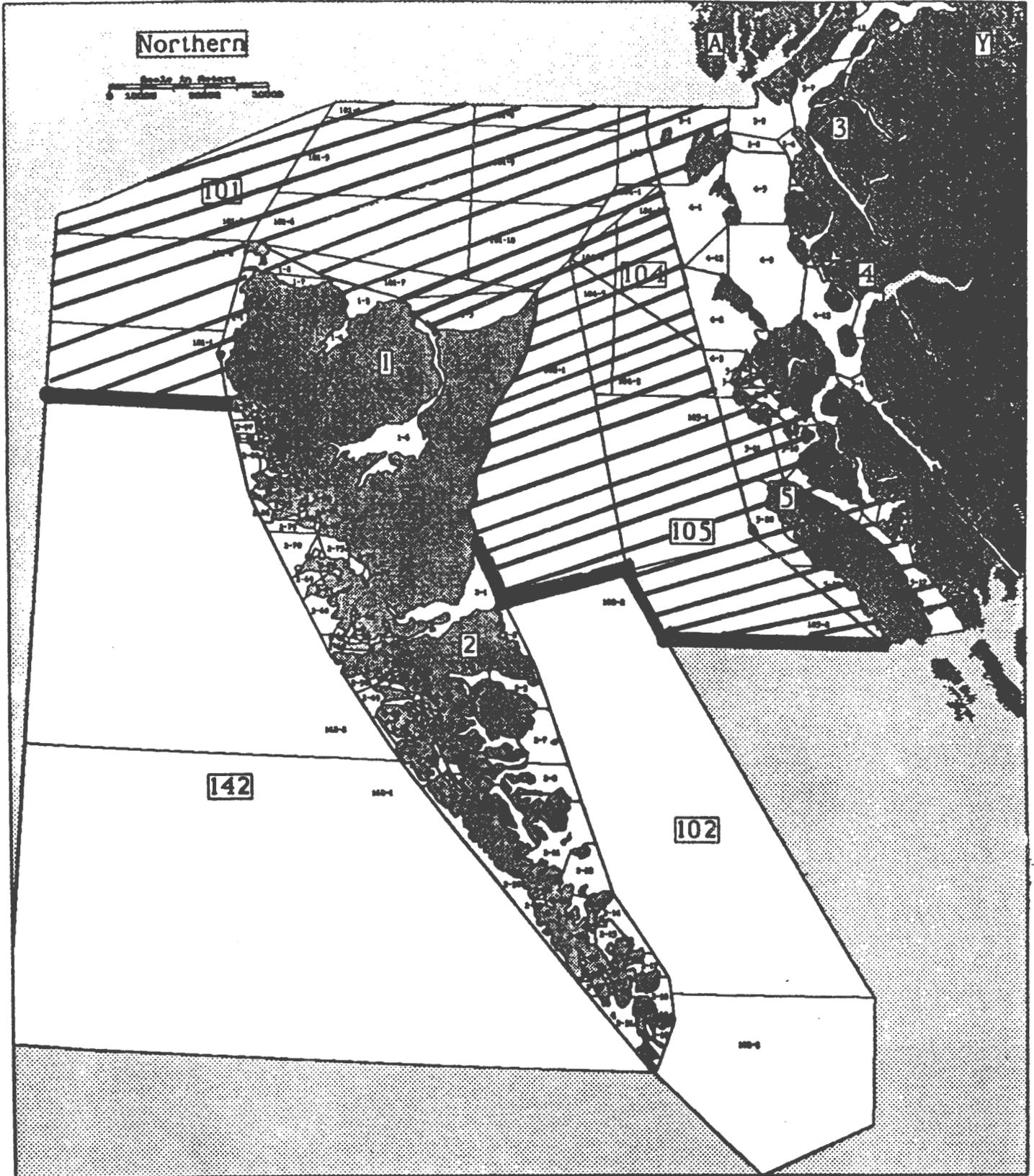


FIGURE 4. AREA 2W OUTSIDE TROLL AREA AND REDLINE CLOSURE BOUNDARIES (DASHED ZONE).

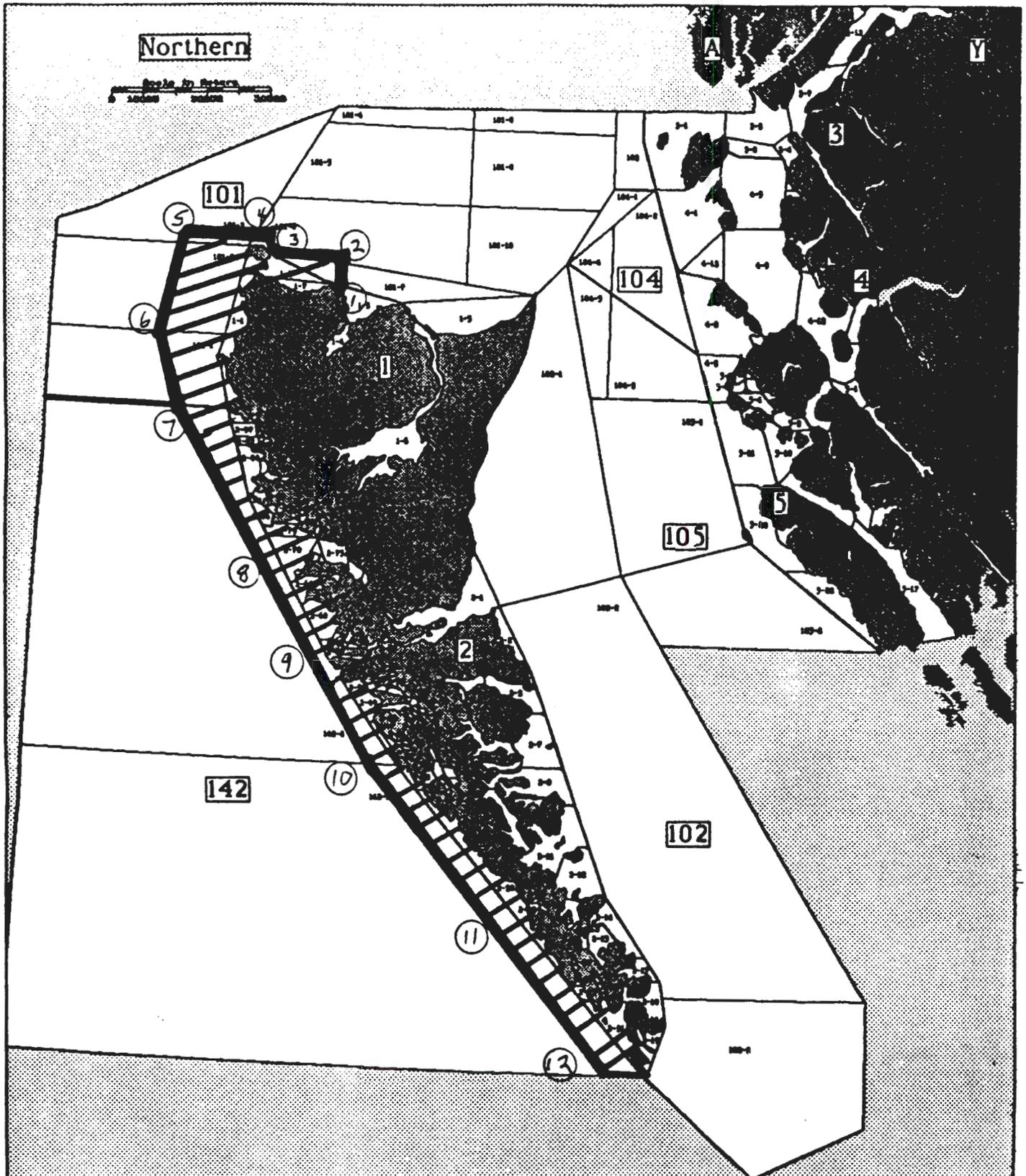


FIGURE 5. SKEENA COHO CONSERVATION AREA - SHOWING AREA CLOSED TO TROLLING (DASHED ZONE).

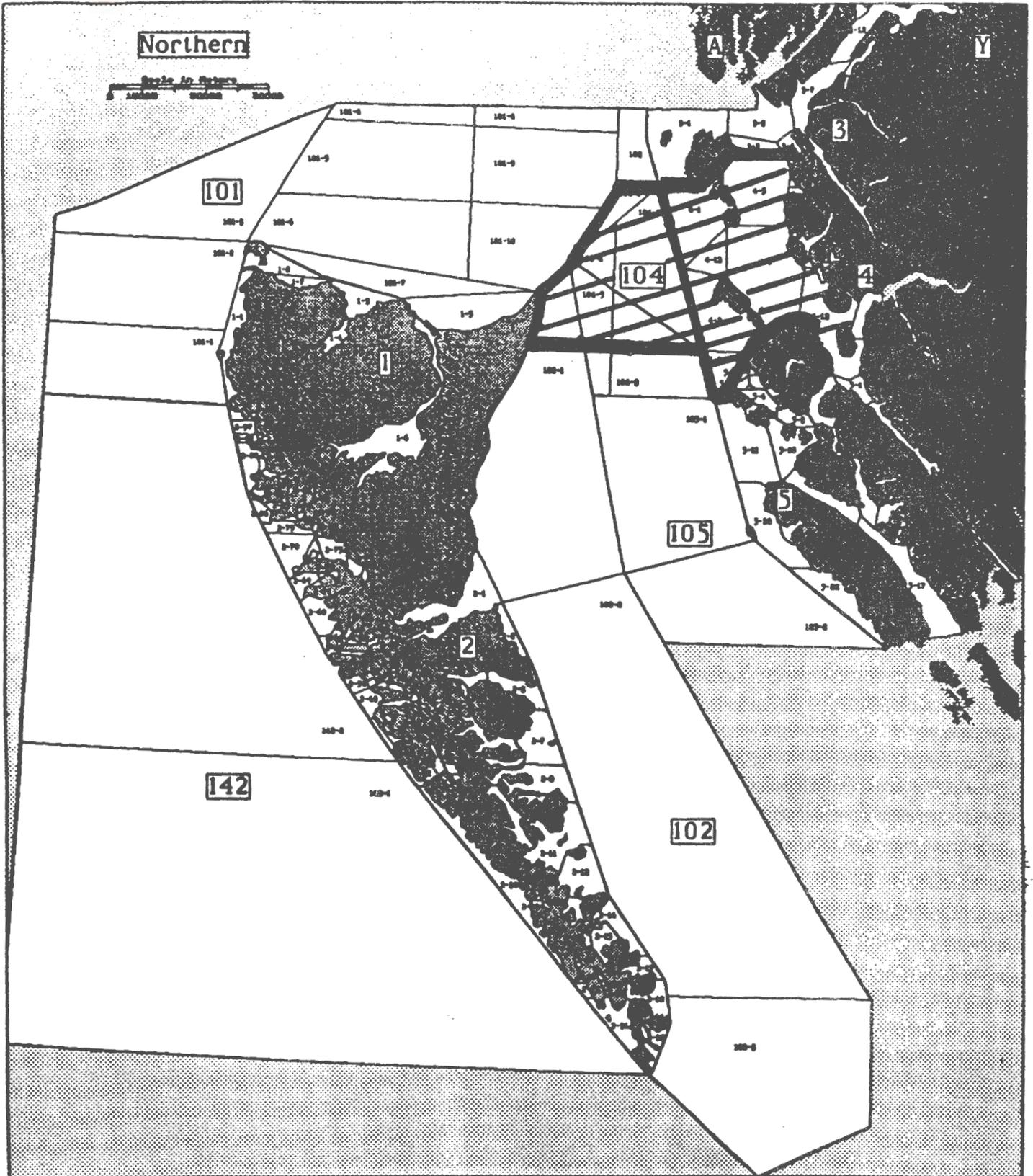


FIGURE 6. HECATE STRAIT CLOSURE TO REDUCE CHINOOK SHAKERS - AFTER AUGUST 25 (DASHED ZONE)

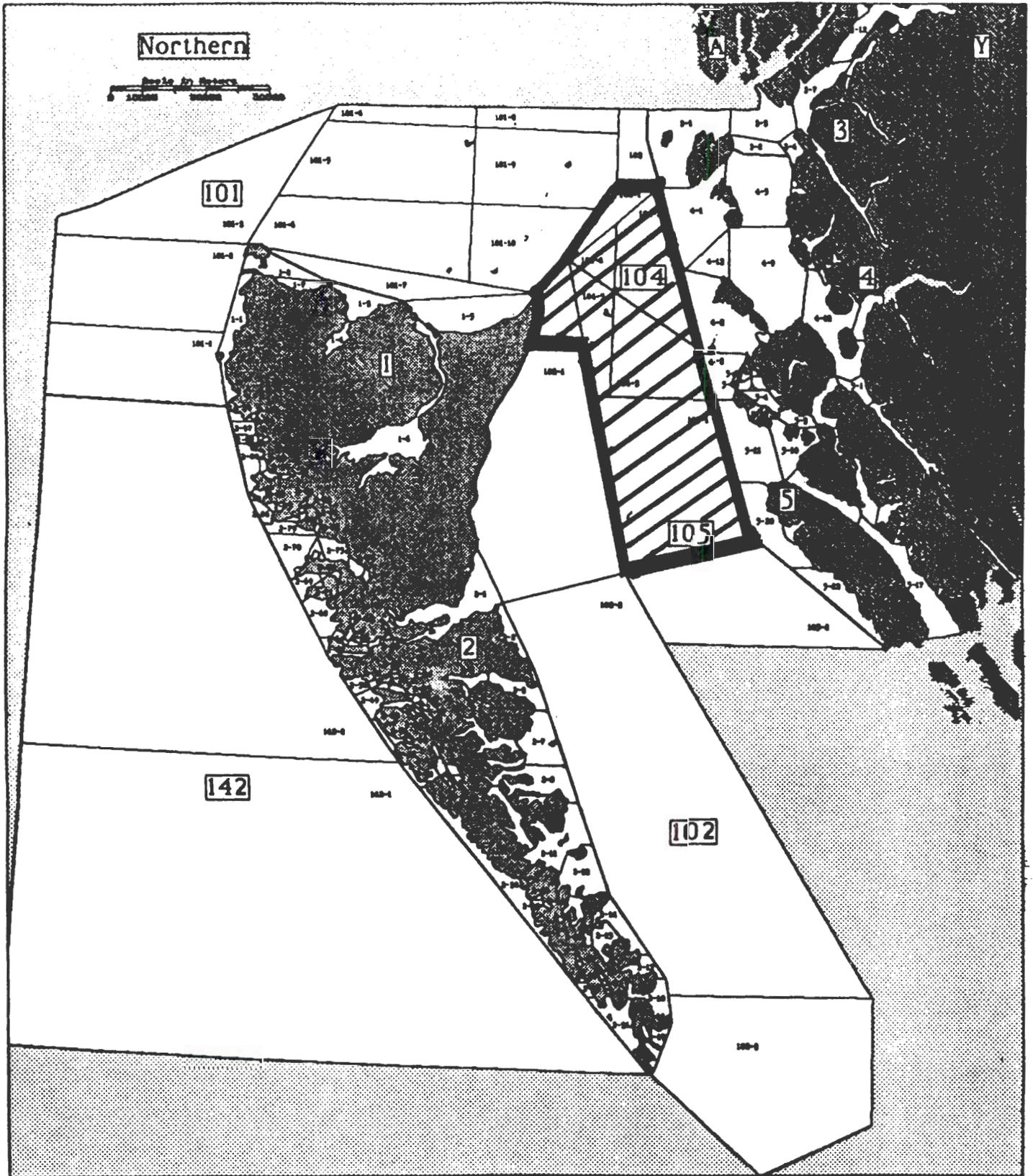


FIGURE 7. AREA 1 PINK TROLL SUBAREAS RELEVANT TO THE PACIFIC SALMON TREATY (DASHED ZONE).

