


MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke 
Executive Director

DATE: June 5, 1996

SUBJECT: Ban on night trawling for Pacific cod

ESTIMATED TIME
1 HOUR

ACTION REQUIRED

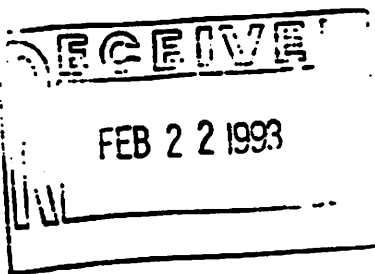
Review updated information and provide further direction.

BACKGROUND

In January, the Council indicated that it wished to re-examine the issue of a ban on night trawling for cod as a means to reduce halibut bycatch in that fishery. A proposal to ban night trawling was discussed by the Council in 1993, and they decided not to proceed with such a ban. Although studies based on 1990 data indicated that halibut bycatch rates in the cod fisheries may be higher at night, and some savings could be expected, the Council did not proceed with the proposal, primarily because of enforcement concerns (see NMFS enforcement letter attached as Item C-6(a)).

Item C-6(b) is a recent letter from the IPHC (dated April 2, 1996) which addresses the Council's current considerations of this proposal. They reiterate the earlier findings that cod come off the bottom at night, and that a cessation of night trawling would reduce bycatch of halibut and crab, perhaps as much as 15%, and increase the CPUE for cod. However, they also note the potential implementation problems with this proposal; in addition to enforceability, they cite the difficulties associated with very short daylight hours during much of the year. Their letter requests that the Council weigh the possible benefits of this program against the benefits of alternative programs such as the VBA proposal.

In April, the Council requested that NMFS examine recent observer data for information regarding day/night differences in bycatch rates of crab and halibut in the Pacific cod trawl fishery. The NMFS report summarizing day/night bycatch rates is attached as Item C-6(c). Their report indicates no day/night differences in bycatch rates using 1994 and 1995 data. At this meeting, the Council will determine whether or not further analysis is warranted.



AGENDA C-6(a)
JUNE 1996

UNITED STATES DEPARTMENT OF COMMERCE
N.O.A.A. / National Marine Fisheries Service
Alaska Enforcement Division
P.O. Box 21668
Juneau, Alaska 99802-1668

February 16, 1993

Mr. David Witherell
North Pacific Fishery
Management Council
P.O. Box 103136
Anchorage, AK 99510

RE: Night Ban On Trawling For Pacific Cod

Dear David,

Thank you for the opportunity to comment on the proposed amendment to prohibit night trawling for Pacific cod in the BS/AI. Although the rationale behind the proposal may be sound, I cannot perceive of any practical way to implement or enforce the proposal short of banning all trawling at night or prohibiting the retention of any Pacific cod taken at night. In the latter case, waste is substantially increased with little or no decrease in removals. Effective enforcement of the retention ban would be difficult at best.

I am presuming that the proposal is to prohibit "directed fishing" for Pacific cod at night. Under current regulations, a directed fishery is defined by our "Directed Fishing Standards". These standards are based on the amount of retained fish during a fishing trip (or weekly reporting period in the case of at-sea processing vessel). These standards do not prohibit a vessel from targeting on any particular bycatch species as long as the retained catch of the bycatch species does not exceed a designated percentage of all other retained catch aboard the vessel during the trip. If we are going to pursue the "directed fishing" scenario, all concerned must realize that the regulation will not prohibit targeting on Pacific cod at night and there is virtually no way to prove a violation short of confession. Under our current definition of a trip, I don't believe a violation of this proposal is even identifiable.

For any regulation to be enforced a violation must at least be detectable through one or more standard enforcement or monitoring mechanisms. These being surveillance, boarding and inspection, records auditing, investigations, on board informants, or observer coverage. Effective enforcement is that which results in substantive compliance. Effective enforcement generally only occurs when a violation can be detected by multiple enforcement

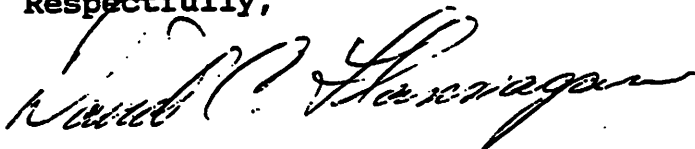


mechanisms and the resources to carry out enforcement and monitoring are sufficient to routinely detect obvious violations. Violations of this proposal cannot be detected through any of our standard enforcement or monitoring mechanisms. Observers and on board informants do not have the practical ability to monitor amounts of retained product. They certainly do not have the ability to adequately account for product retained at night versus all other times of the day. Observer sampling procedures focus on total catch. Even a cod end containing 100% Pacific cod which is retrieved in the dead of night and processed would not constitute a violation of directed fishing standards. Logbooks also provide no means of detecting a violation. Logbooks reflect total retained product for the entire day. They do not address production during any particular segment of the day.

Lastly, I do not believe that the regulation can be remedied by redefining a trip to be that period of time between sundown and sunrise. Production numbers for such a short period of time would be difficult for any vessel to accurately obtain. Record keeping would be greatly exacerbated for the vessel. Further production data for such a short period of time is easily manipulated and almost impossible for enforcement or anyone else to verify.

I have discussed this issue with Capt. Anderson of the 17th CGDIST and he concurs that this proposal is unenforceable. Please contact me if you have any questions or any other thoughts as to how such a ban might be effectively implemented.

Respectfully,



David C. Flannagan
Special Agent in Charge

cc:17CGDIST-B.Anderson
F/AKR-R.Berg
R.Hegge

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Evaluation of Day and Night Pacific Halibut Bycatch Rates in the Bering Sea Trawl Fishery for Pacific Cod

NMFS North Pacific Groundfish Observer Program Staff, June 3, 1996

Summary

At the April, 1996, meeting of the North Pacific Fishery Management, the possibility that bycatch rates of Pacific halibut in the Bering Sea Pacific cod trawl fishery are greater during the night than during the day was discussed. If nighttime bycatch rates are higher than daytime rates, regulations banning Pacific cod trawling at night might be effective in reducing overall halibut bycatch. Observer data collected during the 1990, 1994, and 1995 Pacific cod fisheries in the Bering Sea were examined to address this issue.

Results of the analyses were sensitive to the algorithm used to identify trawls which targeted on Pacific cod, and to the measure of halibut bycatch rate adopted. For most data sets, nighttime bycatch rates were not higher than daytime rates. Some analyses of 1990 data did indicate higher nighttime bycatch rates. In those cases, however, variability was high and statistically significant differences were not apparent.

Data and Methods

Daily Alaska local sunrise and sunset times in 1994 and 1995 were obtained from the National Weather Service. Trawl weight and catch composition data and associated information for hauls sampled by observers were retrieved from the Observer Program database at the Alaska Fisheries Science Center (AFSC). Hauls taken in INPFC Area 511 from January 1 to May 31, 1990, January 1 to April 30, 1994 and January 1 to March 31, 1995 were used because most cod trawling occurred during these periods. Data were aggregated by month. The 1994 and 1995 data sets were selected to best reflect current fishing performance; 1990 data were included for comparison with the studies conducted by Adlerstein (1993, IPHC Report of Assessment and Research Activities, p.211-220) and Adlerstein and Trumble (1993, ICES mar. Sci. Symp., 196:211-215). Local sunrise and sunset times in 1990 were assumed to be the same as for 1994.

Two targeting criteria were used to determine if vessels were targeting on Pacific cod. The first criterion selected hauls containing at least 50% cod by weight, the second selected all hauls containing at least 30% cod by weight. Separate analyses were conducted for each of these categorizations. The night hauls were defined as those whose netdown and netup times occurred between sunset and sunrise. When sunset or sunrise occurred during a trawl, that haul was excluded from the analytical data set.

For halibut bycatch rate determination, the numerator can be halibut number or weight, and the denominator can be total catch, tow, or tow duration. Several formulations were developed.

Let us define:

- n: number of sampled hauls in a given stratum,
- C: haul's estimated total catch in mt,
- y: haul's halibut bycatch in kg
- x: haul's halibut bycatch in number,
- E: tow duration.

Bycatch rates were calculated as:

I. Ratio of means:

1. Kilograms of halibut per metric ton of total catch

$$R_1 = \frac{\sum_i y_i}{\sum_i C_i}$$

2. Number of halibut per metric ton of total catch

$$R_2 = \frac{\sum_i x_i}{\sum_i C_i}$$

II. Mean of ratios:

3. Kilograms of halibut per metric ton of total catch per haul

$$R_3 = \frac{\sum_i y_i / C_i}{n}$$

4. Number of halibut per metric ton of total catch per haul

$$R_4 = \frac{\sum_i x_i / C_i}{n}$$

III. CPUE

5. Kilograms of halibut per hour of tow

$$R_5 = \frac{\sum y_i}{\sum E_i}$$

6. Kilograms of halibut per hour of tow per haul

$$R_6 = \frac{\sum y_i/E_i}{n}$$

7. Kilograms of halibut per haul

$$R_7 = \frac{\sum y_i}{n}$$

CPUEs were also calculated using halibut numbers. Results of analyses based on this procedure were similar to those using weight-based CPUEs and will not be discussed further in this document. Variances for each of these estimates were computed using standard procedures. The estimator R_4 was used in Adlerstein (1993) and Adlerstein and Trumble (1993).

Observer data includes large numbers samples which do not contain halibut. Data sets of this type are difficult to analyze. To account for this, further analyses of bycatch rates, using data only from those hauls which contained halibut, were conducted using the delta method (i.e., Pennington, M. 1986. U.S. Fish. Bull. 84:519-525). Although the results are not presented in this document, they were similar to those illustrated and discussed above. More traditional statistical approaches, for example ANOVA, ANCOVA, etc., were not applied because the data were not normally distributed even after several transformation methods, such as log, square root, and Box-Cox power transformations, were employed.

Results and Discussion

For data based on the 50% targeting criterion, day bycatch rates exceeded night bycatch rates for most months and years, regardless of the analytical technique employed (Figures 1 through 8). Analysis using R_4 (number of halibut per metric ton of total catch per haul) for 1990 did indicate night bycatch rates were greater than the day bycatch rate. However, none of these differences were statistically significant (confidence interval method $\alpha = 5\%$).

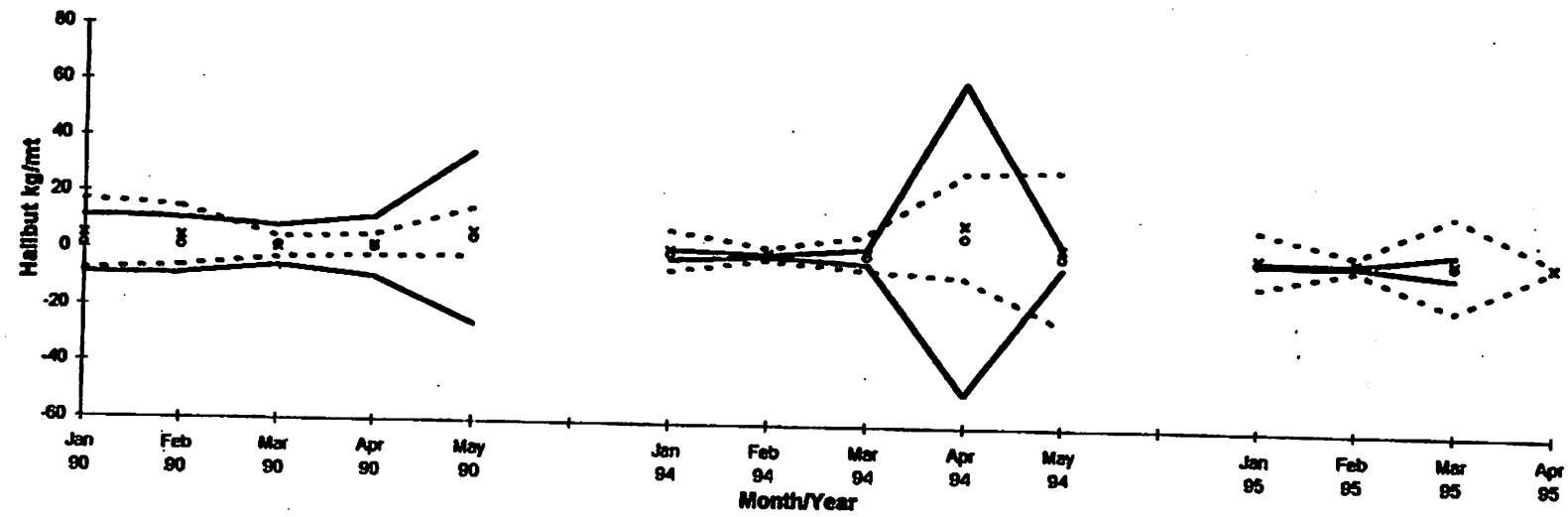
For data based on the 30% targeting criterion, the estimated night bycatch rates R_1 , R_2 , R_3 , and R_4 , and estimated CPUE, R_7 , were greater than the estimated day bycatch rates in March, April and May 1990 (Figures 5, 6, and 8). Day bycatch rates and CPUEs were greater than during the night for all of the seven analytical procedures in 1994 and 1995, except in May 1995 when the estimated night values were greater. Differences between day and night bycatch rates and CPUEs were not statistically significant in most of the cases.

Adlerstein (1993) and Adlerstein and Trumble (1993) used a different criterion to define hauls targeting on Pacific cod (ref. Adlerstein, 1993; Table 5) which resulted in selection of some hauls containing less than 30% Pacific cod. Their results for 1990 are consistent with the results of analyses we performed on 1990 data using the 30% target criterion and the R_3 estimator.

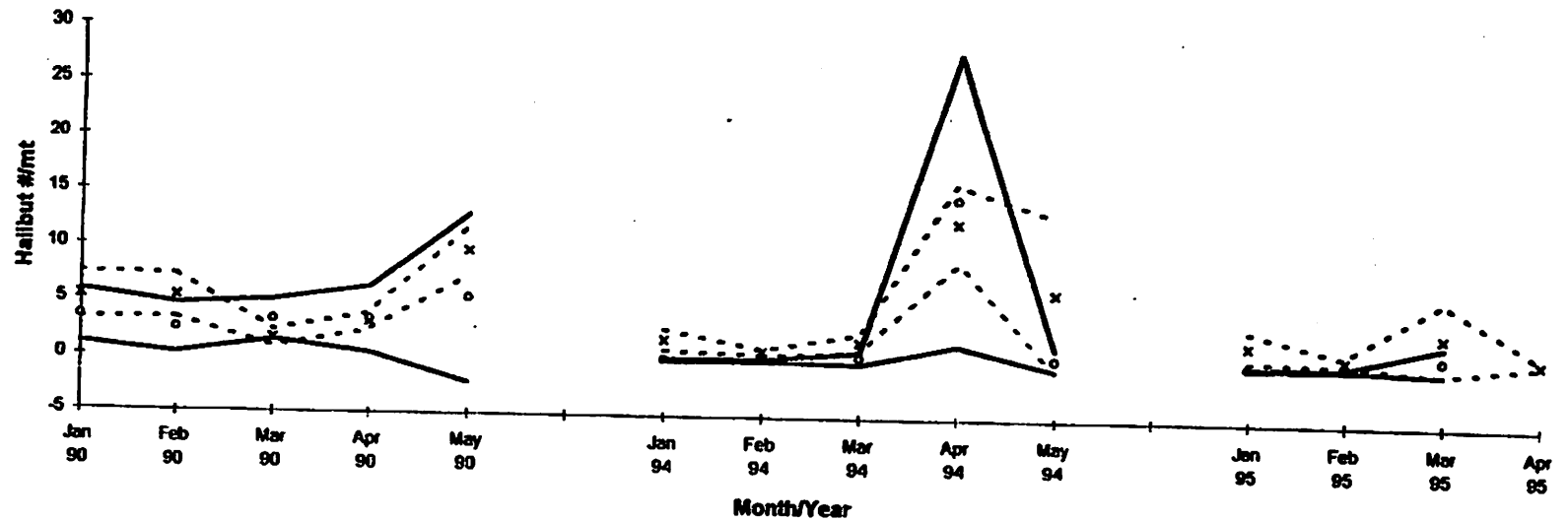
The extent to which targeting criteria can influence the outcome of these types of analyses is apparent from Table 1 and Figures 9 and 10. As would be expected, more hauls were included in the 30% or greater category than in the 50% or greater category. For all months and years, however, the increase in halibut bycatch associated with these additional hauls was disproportionately high, and particularly so for night hauls. For example, the number of daytime hauls selected using the 50% criterion in 1995 was 1138; this number increased by 13% to 1291 under the 30% criterion, the associated increase in halibut bycatch weight was 73%. Similarly, the number of night hauls in 1995 increased by 7% (from 1588 to 1698) whereas the halibut bycatch weight increased by 389%. Further examination of the relationship between targeting criteria and halibut bycatch rates should be conducted.

Even though day and night halibut bycatch rates were generally similar, increased fishing effort at night could result in higher overall nighttime catches of cod and halibut. To investigate this possibility, a comparison of the proportion of trawls conducted by day and night and the proportion of halibut caught by day and night for the months and years examined during this was conducted (Table 1, Figures 9 and 10). Daytime trawling was much more predominant in 1990 whereas in 1994 and 1995 the proportion of daytime and nighttime trawls was similar. For each month of the 1990 fishery, substantially more halibut was caught during the day than during the night. This pattern persisted in 1994 and 1995, even though more night trawling occurred.

50% Pacific cod - R1



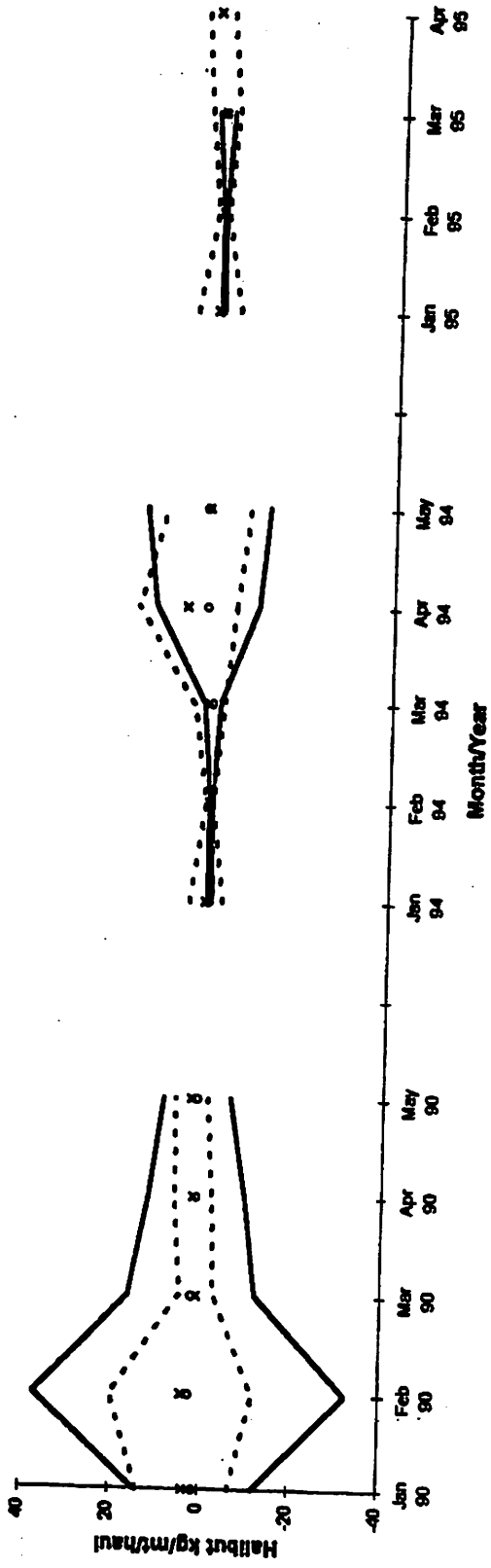
50% Pacific cod - R2



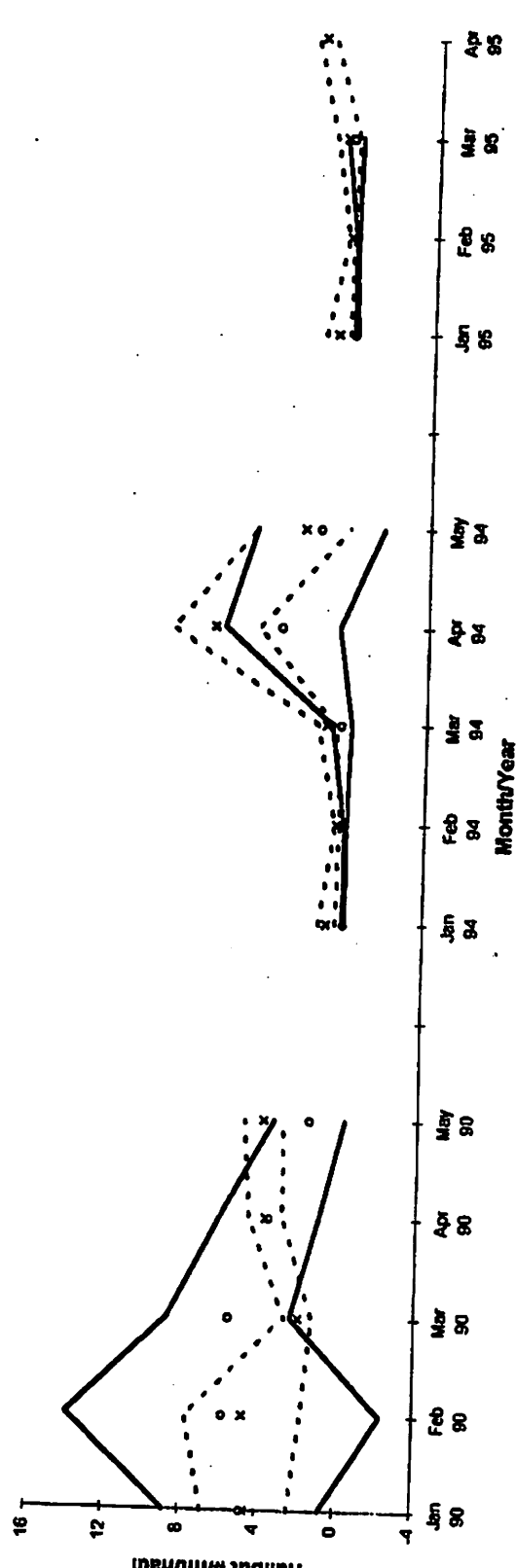
x : Day time
 o : Night time
 ... : Day time 95% CI band
 — : Night time 95% CI band

Figure 1. Monthly estimates of hailbut bycatch rate in weight/mt and number/mt where the Pacific cod catch exceeded 50% of the total catch.

50% Pacific cod - R3



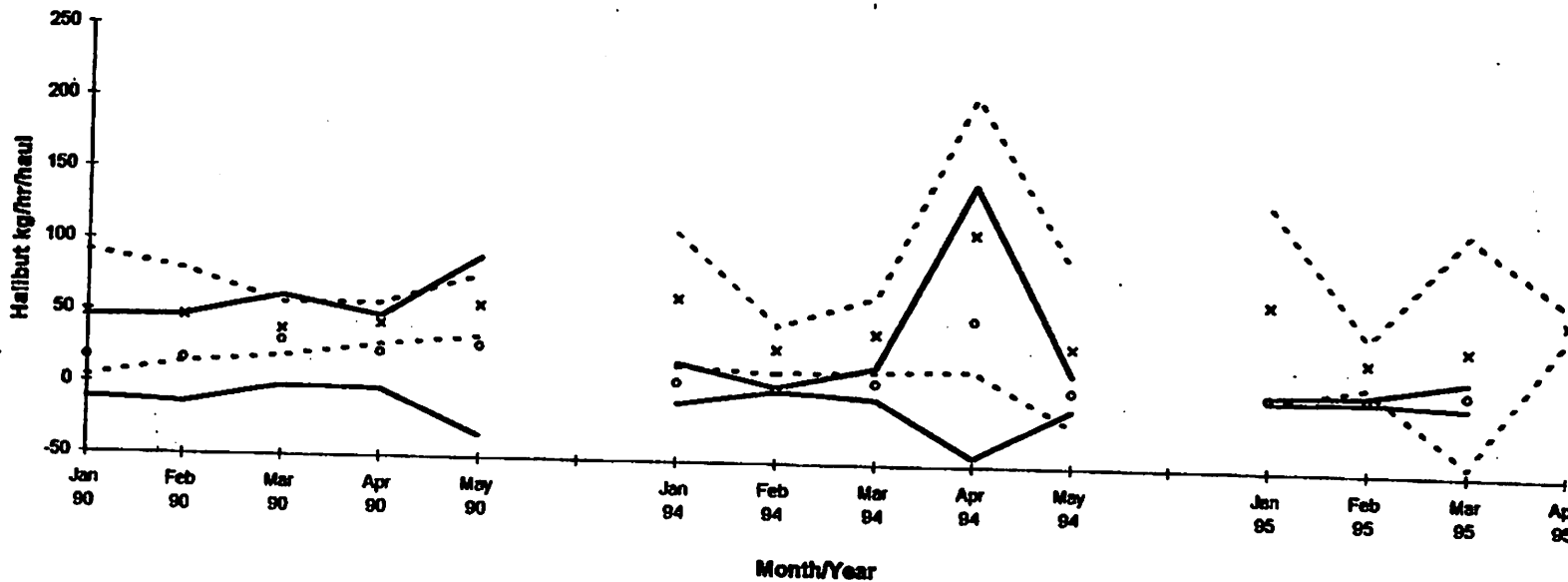
50% Pacific cod - R4



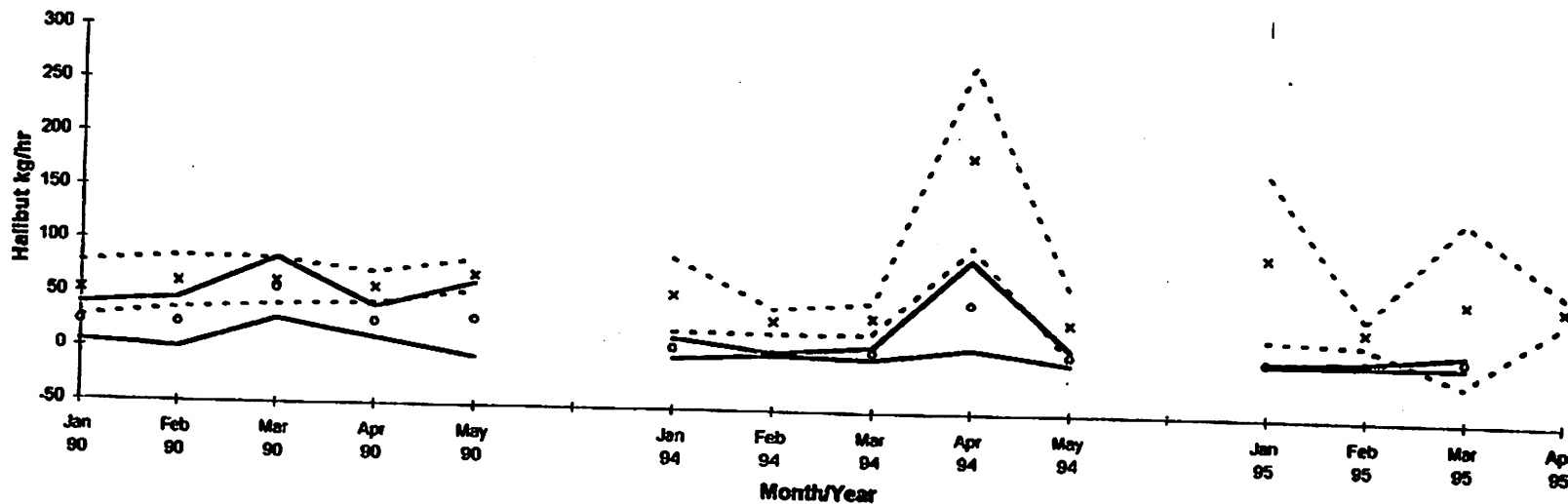
x : Day time
o : Night time
... : Day time 95% CI band
- - : Night time 95% CI band

Figure 2. Monthly estimates of halibut bycatch rate in weight/m/haul and number/m/haul where the Pacific cod catch exceeded 50% of the total catch.

50% Pacific cod - R5



50% Pacific cod - R6



x : Day time
o : Night time
... : Day time 95% CI band
— : Night time 95% CI band

Figure 3. Monthly estimates of halibut bycatch rate in weight/hour and weight/hour/haul where the Pacific cod catch exceeded 50% of the total catch.

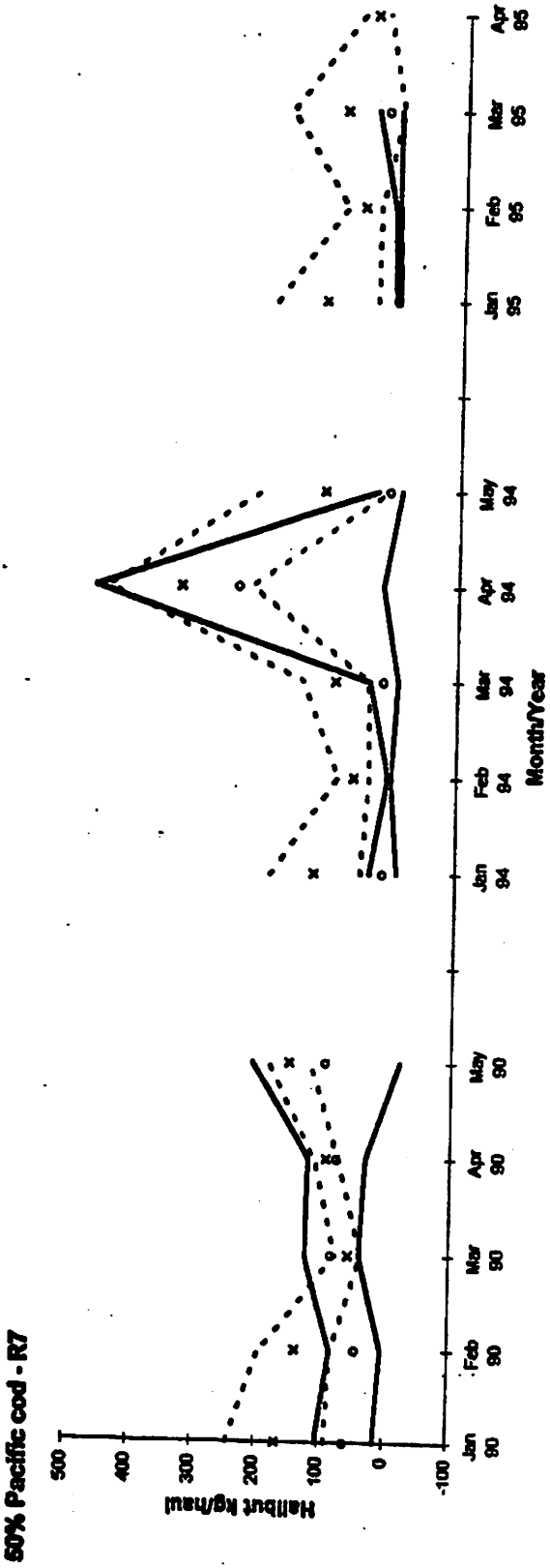
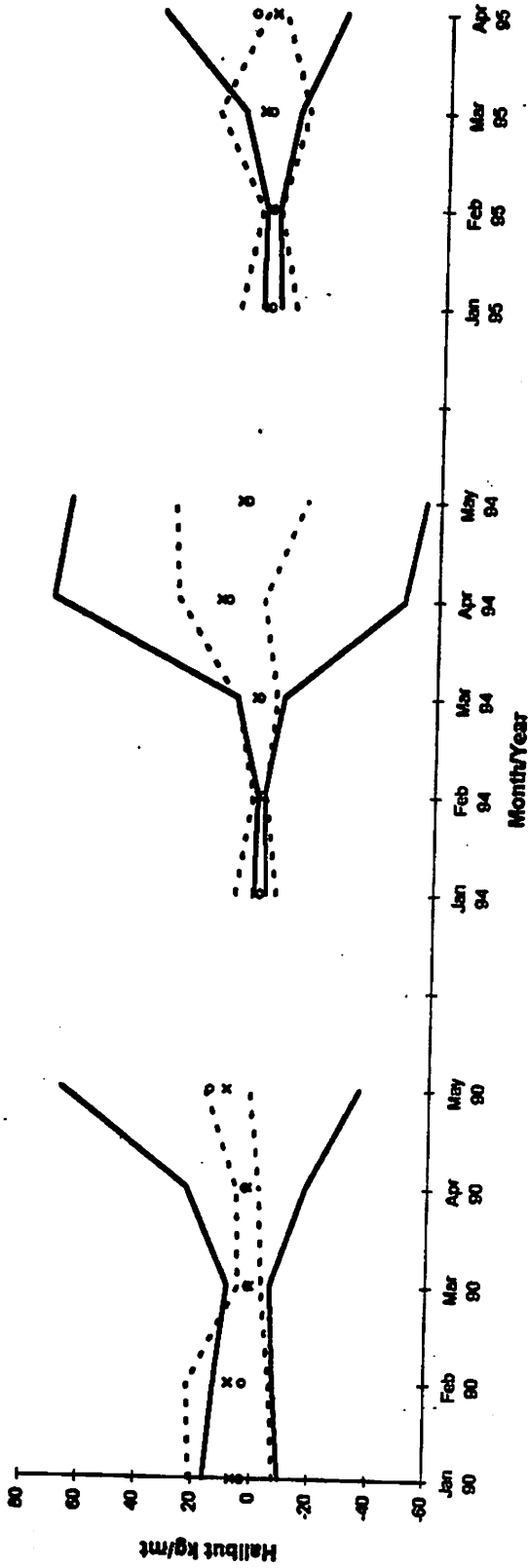
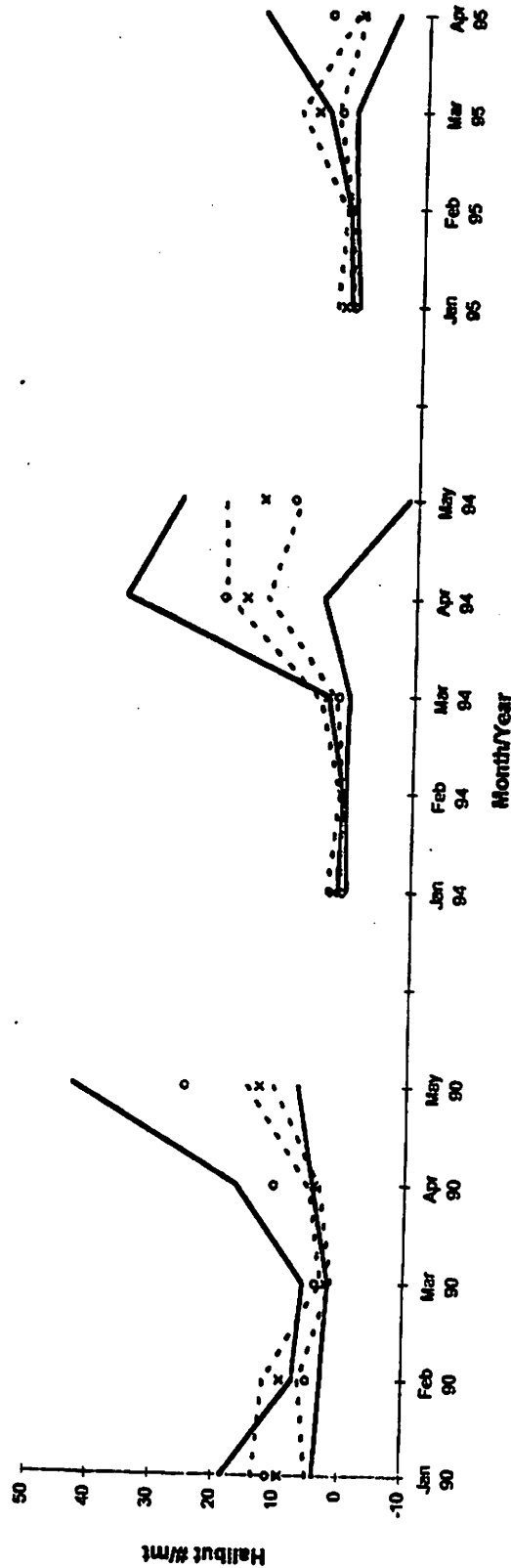


Figure 4. Monthly estimates of halibut bycatch rate in weight/haul where the Pacific cod catch exceeded 50% of the total catch.

30% Pacific cod - R1



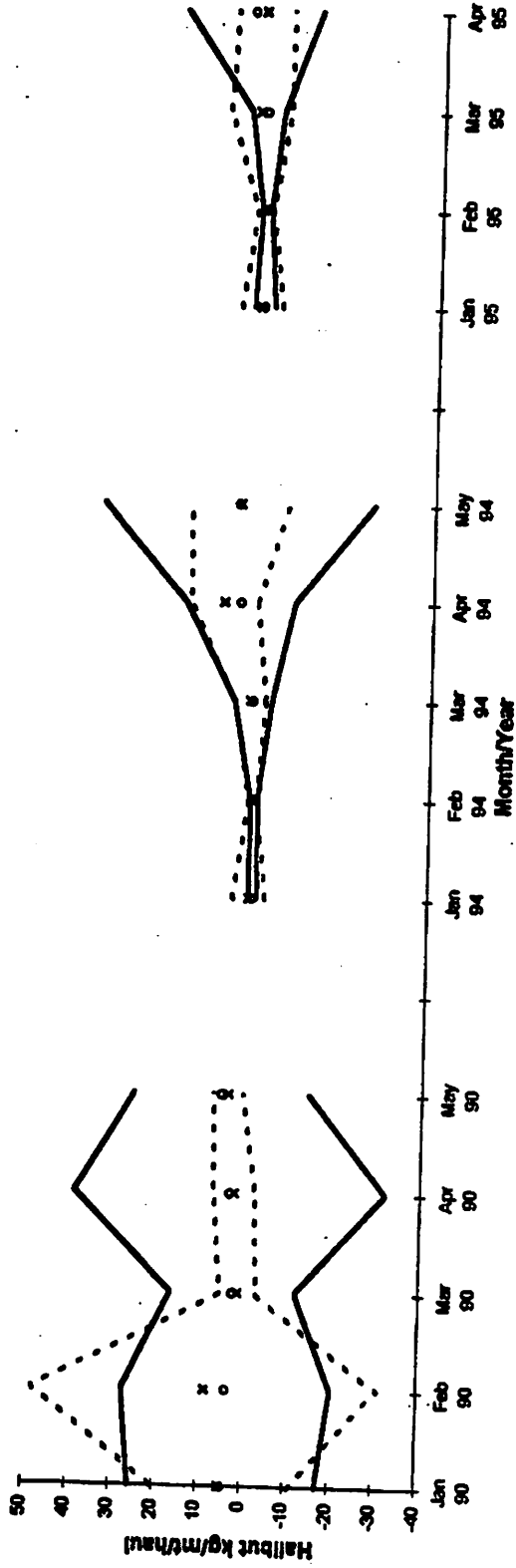
30% Pacific cod - R2



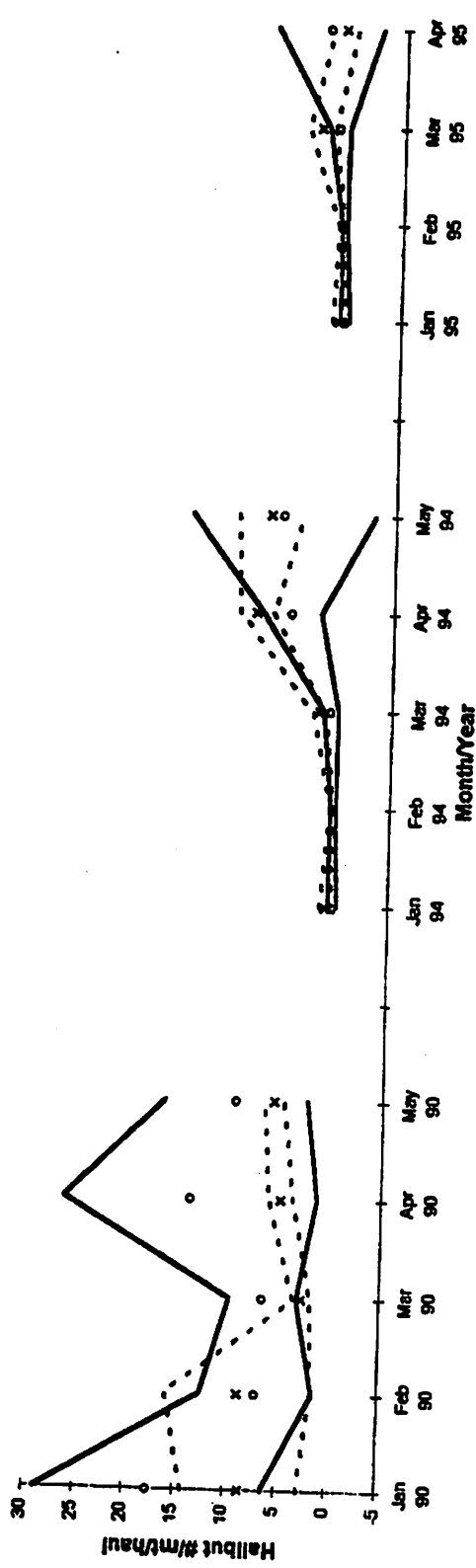
x : Day time
o : Night time
... : Day time 95% CI band
— : Night time 95% CI band

Figure 5. Monthly estimates of halibut bycatch rate in weight/mt and number/mt where the Pacific cod catch exceeded 30% of the total catch.

30% Pacific cod - R3



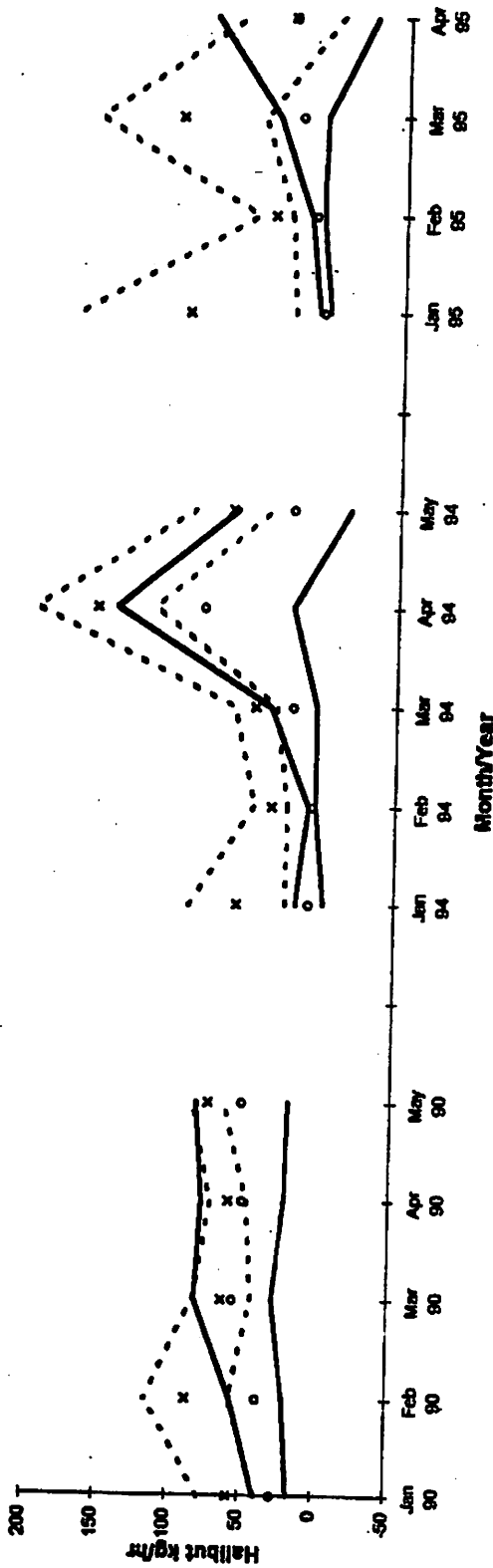
30% Pacific cod - R4



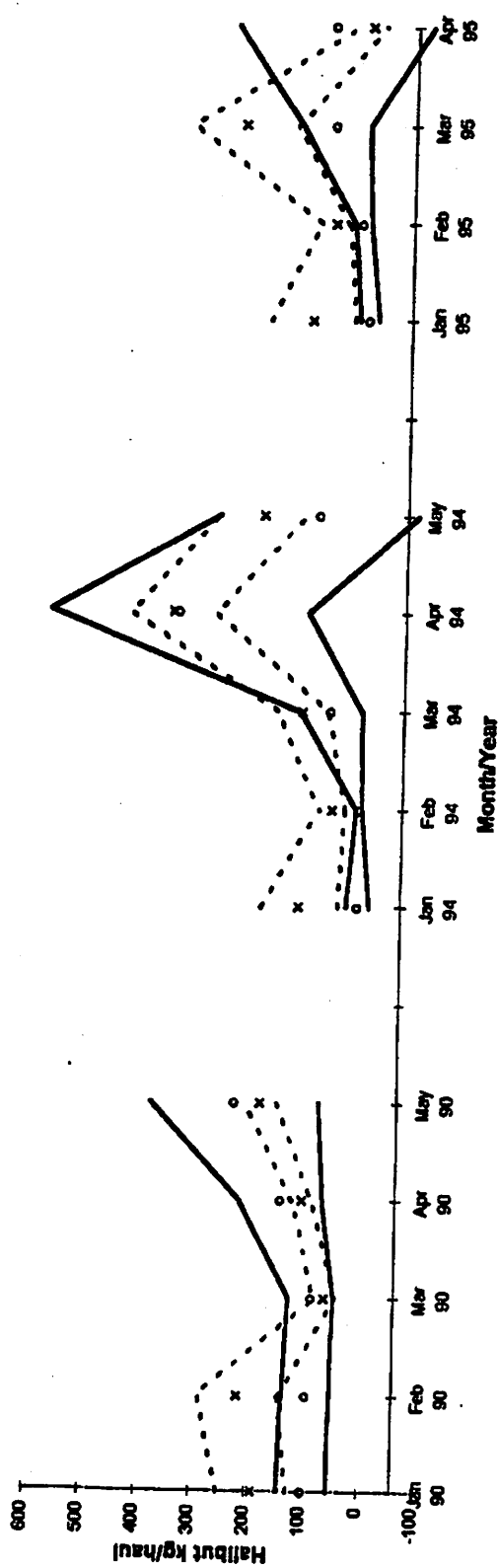
- x : Day time
- o : Night time
- ... : Day time 95% CI band
- ___ : Night time 95% CI band

Figure 6. Monthly estimates of halibut bycatch rate in weight/m/haul and number/m/haul where the Pacific cod catch exceeded 30% of the total catch.

30% Pacific cod - R5



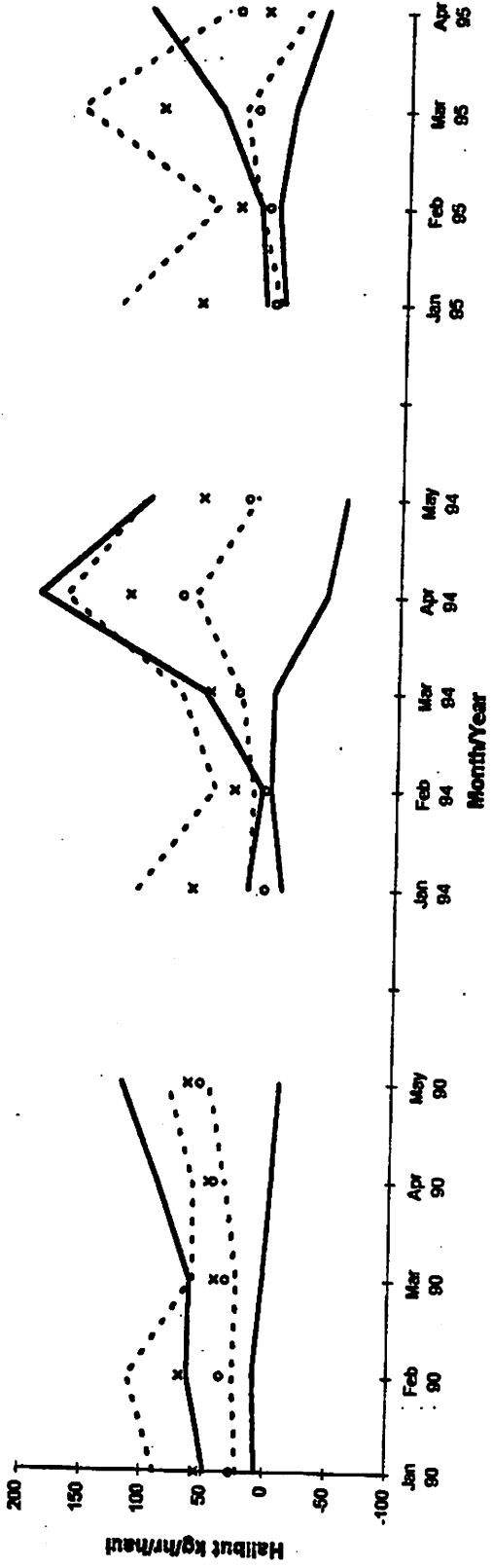
30% Pacific cod - R6



x : Day time
 o : Night time
 ... : Day time 95% CI band
 ___ : Night time 95% CI band

Figure 7. Monthly estimates of halibut bycatch rate in weight/hour and weight/hour/haul where the Pacific cod catch exceeded 30% of the total catch.

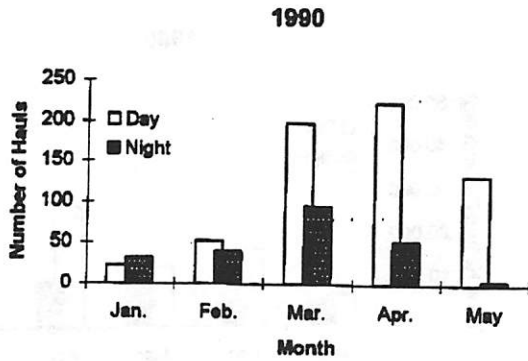
30% Pacific cod - R7



- x : Day time
- o : Night time
- ... : Day time 95% CI band
- : Night time 95% CI band

Figure 8. Monthly estimates of halibut bycatch rate in weight/haul where the Pacific cod catch exceeded 30% of the total catch.

Number of Daytime and Nighttime Trawl Hauls Containing at Least 50% Pacific Cod



Monthly Halibut Bycatch Taken In Daytime and Nighttime Trawl Hauls Containing at Least 50% Pacific Cod

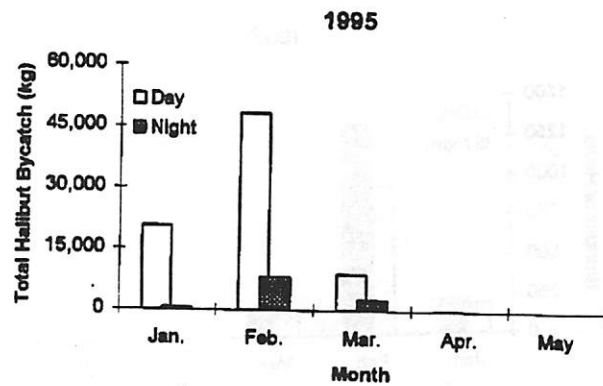
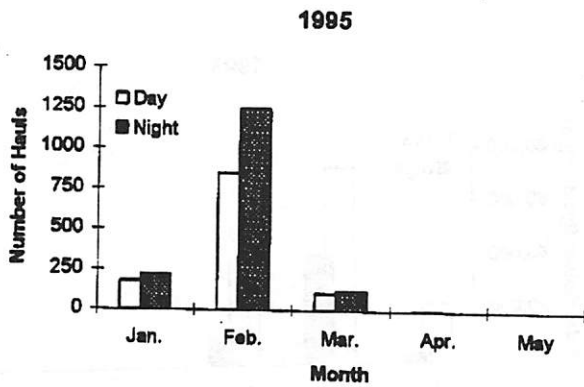
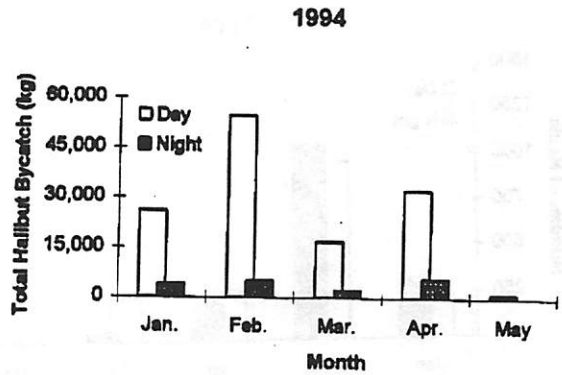
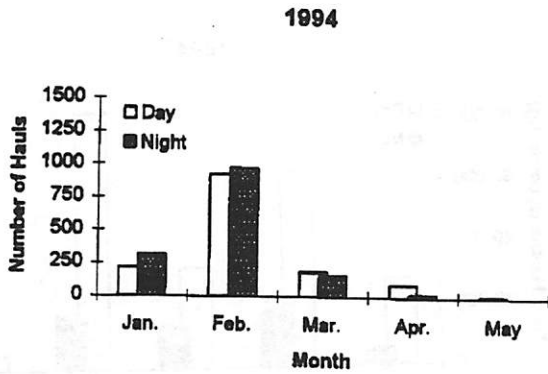
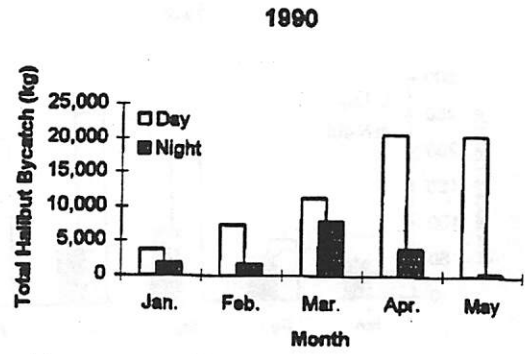


Figure 9. Day-night differences in numbers of hauls and quantity of halibut caught by month in the Bering Sea trawl fishery in 1990, 1994 and 1995 for trawls containing at least 50% Pacific Cod.

Number of Daytime and Nighttime Trawl Hauls Containing at Least 30% Pacific Cod

Monthly Halibut Bycatch Taken in Daytime and Nighttime Trawl Hauls Containing at Least 30% Pacific Cod

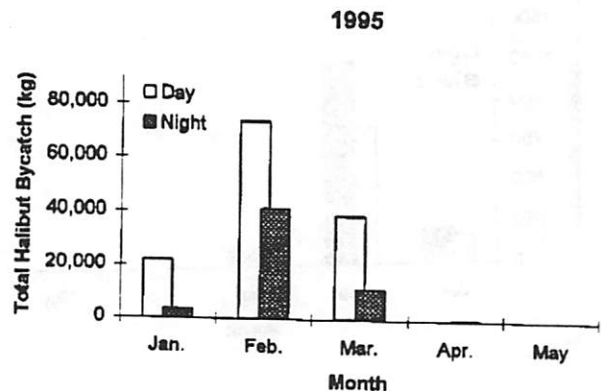
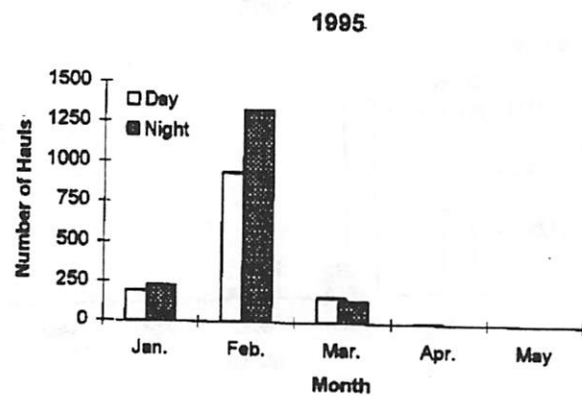
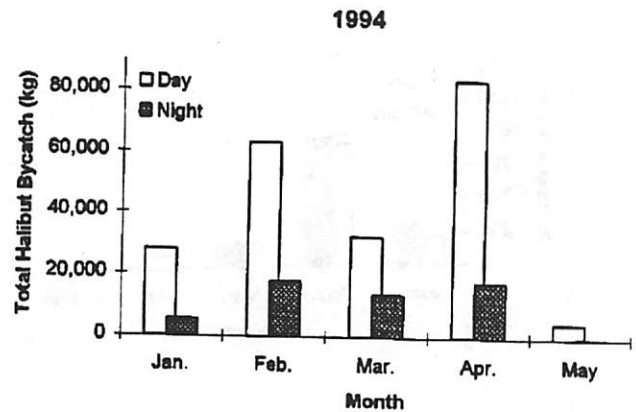
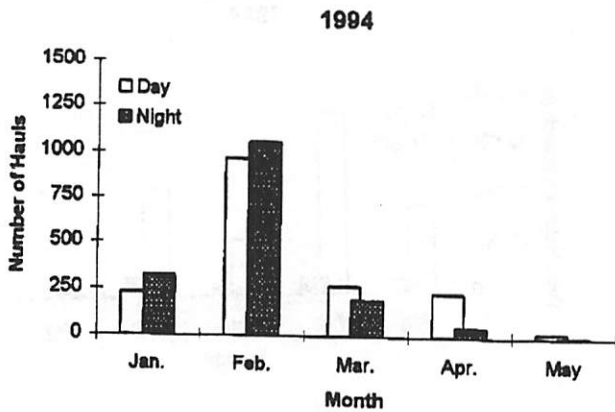
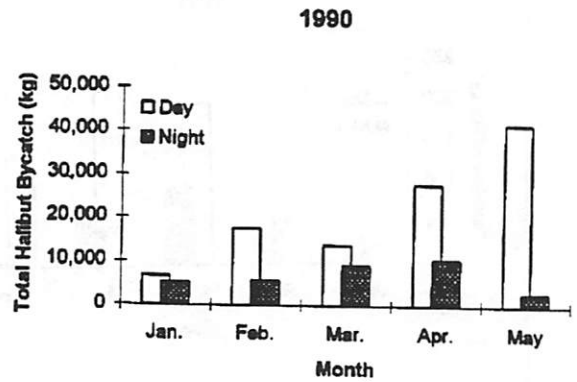
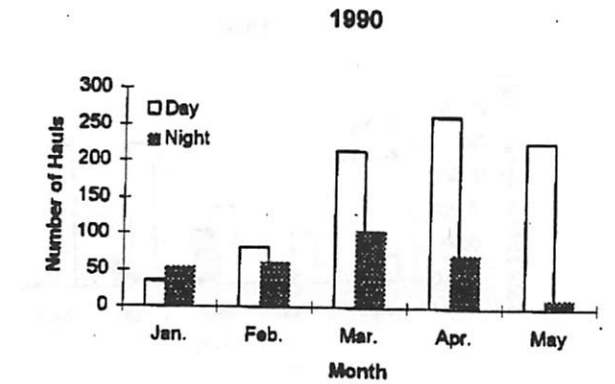


Figure 10. Day-night differences in numbers of hauls and quantity of halibut caught by month in the Bering Sea trawl fishery in 1990, 1994 and 1995 for trawls containing at least 30% Pacific Cod.

Table 1. Day-night differences in numbers of hauls and quantity of halibut caught by month in the Bering Sea trawl fishery in 1990, 1994, and 1995, for trawls containing at least 30% or at least 50% Pacific cod.

		30% Pacific cod				50% Pacific cod			
Year	Month	DAY TOWS		NIGHT TOWS		DAY TOWS		NIGHT TOWS	
		Hauls	Halibut kg	Hauls	Halibut kg	Hauls	Halibut kg	Hauls	Halibut kg
90	Jan.	36	6,741	54	5,302	23	3,850	32	1,898
	Feb.	81	17,572	81	5,741	53	7,343	40	1,767
	Mar.	214	13,890	106	9,152	198	11,311	96	7,943
	Apr.	263	27,944	72	10,455	223	20,694	53	4,046
	May	227	41,734	13	2,995	134	20,503	5	477
	Sum	821	107,881	305	33,644	631	63,702	226	16,131
94	Jan.	230	28,048	325	5,416	220	26,225	316	4,146
	Feb.	965	63,162	1054	17,837	922	54,659	975	5,129
	Mar.	289	32,455	185	13,746	187	16,754	163	2,403
	Apr.	235	83,450	51	17,588	98	32,410	24	5,795
	May	25	4,883	3	292	11	1,207	2	18
	Sum	1724	211,997	1628	54,880	1438	131,254	1480	17,491
95	Jan.	181	22,260	227	3,681	183	20,662	219	622
	Feb.	935	73,746	1327	41,379	848	48,354	1244	8,315
	Mar.	161	39,085	142	11,697	105	9,137	125	2,707
	Apr.	4	86	2	174	2	86	--	--
	May								
	Sum	1291	135,178	1698	56,932	1138	78,239	1588	11,644
		Difference between 30% and 50% criteria				Increase resulting from changing criterion to 30%			
Year	Month	DAY TOWS		NIGHT TOWS		DAY TOWS		NIGHT TOWS	
		Hauls	Halibut kg	Hauls	Halibut kg	Hauls	Halibut kg	Hauls	Halibut kg
90	Jan.	13	2,891	22	3,403	57%	75%	69%	179%
	Feb.	28	10,229	21	3,974	53%	139%	53%	225%
	Mar.	16	2,378	9	1,209	8%	21%	9%	15%
	Apr.	40	7,250	19	6,409	18%	35%	36%	158%
	May	93	21,231	8	2,518	69%	104%	160%	527%
	Sum	180	43,979	79	17,513	30%	69%	35%	109%
94	Jan.	10	1,823	9	1,270	5%	7%	3%	31%
	Feb.	43	8,503	79	12,708	5%	16%	8%	248%
	Mar.	82	15,702	32	11,345	44%	94%	20%	472%
	Apr.	137	51,040	27	11,793	140%	157%	113%	204%
	May	14	3,676	1	273	127%	305%	50%	1498%
	Sum	286	80,743	148	37,389	20%	62%	10%	214%
95	Jan.	8	1,598	8	3,059	4%	8%	4%	492%
	Feb.	87	25,393	83	33,064	10%	53%	7%	398%
	Mar.	56	29,948	17	8,990	53%	328%	14%	332%
	Apr.								
	May								
	Sum	153	56,939	110	45,288	13%	73%	7%	389%

INTERNATIONAL PACIFIC HALIBUT COMMISSION

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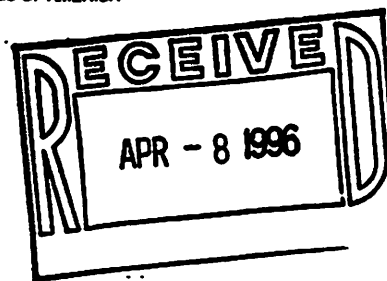
ESTABLISHED BY A CONVENTION BETWEEN CANADA

AND THE UNITED STATES OF AMERICA

P.O. BOX 95009
SEATTLE, WA 98145-2009

TELEPHONE
(206) 634-1838

FAX:
(206) 632-2983



April 2, 1996

Dr. Clarence Pautzke, Executive Director
North Pacific Fishery Management Council
605 W 4th Avenue Room 306
Anchorage AK 99501

Dear Clarence:

At the April meeting, the Council is scheduled to review information available on day-night differences in halibut bycatch rates in Pacific cod trawl fisheries, as part of an evaluation of a ban on night-trawling for Pacific cod. Data analysis by the staff of the International Pacific Halibut Commission (Adlerstein 1992; Adlerstein and Trumble 1993) has indicated that significant day-night differences occur in the catch and bycatch rates for the Pacific cod-pollock trawl fishery, based on data from 1990 (for which adequate data existed at the time of the analysis). At the time of the analysis, Pacific cod and pollock were combined as a target fishery.

Calculation of the changes in bycatch that may result from a ban on night trawling depends on two factors: the bycatch rate and the amount of catch that occurs at night. We believe that the information in the IPHC reports adequately captures the bycatch rate. Pacific cod come off the bottom at night, reducing groundfish CPUE; night hauls tend to catch larger halibut, probably because halibut cannot avoid trawls in darkness; and crabs tend to pod at night and burrow during the day. This basic biological behavior should remain consistent. The proportion of night trawling, however, may be quite variable as vessel captains adjust their operations to fishing and market conditions. The absolute amount of bycatch reduction depends on the relative amount of the day and night catch occurring in the fishery.

Day-only trawling will reduce overall halibut and crab bycatch rates in the Pacific cod fishery. Night-time catch per unit effort of Pacific cod dropped compared to day CPUE (Figure 1 from Adlerstein and Trumble): day-time CPUE (catch per hour) averaged about 20-50% higher than night-time values. Night-time bycatch rates of Pacific halibut, king crab, and Tanner crab (Figure 1) were consistently higher than rates during the day (5-15% for halibut), although not statistically significant. For 1990 in Area 511, day-only trawling would have reduced halibut bycatch by about 13%, king crab bycatch by 13%, and Tanner crab bycatch by 16%.

After our experience with grid sorting, we recognize that ideas that seem worthwhile often do not stand up under current fishing, enforcement, and management practices. The discussion paper, "Ban on Trawling for Pacific Cod at Night," from the April 1993 Council meeting summarized several concerns to be addressed if an analysis of this proposal goes forward. 1) NMFS Enforcement indicated that a night ban is practically unenforceable. 2) The night duration changes daily, longer in winter and shorter in summer, so "night" may need an arbitrary definition in the regulations. (Additionally, cloud cover extends the effective period of darkness.) 3) Short daylight hours in winter will severely restrict fishing, which will generate economic issues. 4) Increased harvest in the Pacific cod fishery will have allocative effects for the remainder of the trawl fishery.

As the Council makes its decision whether to move forward with a proposal for a night ban, we request that you consider the following factors: 1) will any projected bycatch savings be used to reduce bycatch mortality limits, to increase groundfish harvest, or for both; 2) will the savings from a night ban be just as likely under a Vessel Bycatch Account program; and 3) will analysis of a night-trawl ban slow down work on the VBA program, which could more directly affect bycatch savings?

We support efforts to reduce halibut bycatch and to maintain groundfish harvest. However, we believe that the most productive bycatch reduction program will involve effective individual incentives. We recommend that the Council put maximum effort into overcoming the obstacles to an incentive program such as the Vessel Bycatch Account (VBA). Under a VBA, fishermen will readily make the decision not to trawl at night if night-time bycatch adversely affects their use of bycatch mortality.

Sincerely,



Donald A. McCaughran
Director

cc: Commissioners



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Alaska Fisheries Science Center
Resource Ecology and
Fisheries Management Division
BIN C15700, Building 4
7600 Sand Point Way NE
Seattle, WA 98115-0070

June 5, 1996

MEMORANDUM FOR:

Distribution

FROM:

William A. Karp, Task Leader, North
Pacific Groundfish Observer Program

SUBJECT:

Halibut Bycatch in the BSAI Trawl
Fishery for Pacific Cod

At its June, 1996 meeting, the North Pacific Fishery Management Council will consider banning night trawling for Pacific cod in the Bering Sea in order to reduce bycatch of halibut. Attached is an analysis by Observer Program staff which may be helpful when considering this issue.

Attachment

Distribution:

- S. Pennoyer
- R. Berg
- J. Balsiger
- R. Marasco
- C. Oliver
- R. Trumble
- G. Williams
- K. Criddle
- T. Quinn
- D. Eggers
- P. Rigby
- S. Hills
- A. Tyler
- D. Larson
- M. Miller
- J. Tagart
- H. Weeks





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Alaska Fisheries Science Center
7600 Sand Point Way N.E.
BIN C15700 F/AKC
Seattle, Washington 98115-0070

June 7, 1996

Clarence Pautzke
Executive Director
North Pacific Fishery Management Council
605 West 4th Street, Suite 306
Anchorage, AK 99501-2253

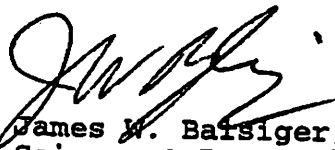
Dear Clarence:

The North Pacific Fishery Management Council requested at its April, 1996 meeting that analyses of day-night differences in halibut bycatch rates in the Bering Sea trawl fishery for Pacific Cod be conducted. Analyses results were to be available during discussions of a proposed ban on night trawling for Pacific cod scheduled for the June, 1996 Council meeting.

Earlier this week Bill Karp sent you a copy of a report by Center staff describing work which has been done to address this issue. Our analyses indicate that there are no significant differences between day and night halibut bycatch rates for trawl hauls which contain 1) at least 30% or 2) at least 50% cod). The data do indicate, however, that overall night bycatches of halibut may exceed daytime bycatches for hauls containing at least 30% but no more than 50% cod, in some months. As stated in the report, this type of analysis is sensitive to targeting procedure and further analysis should be conducted to consider criteria of less than 30%.

The next step in our analysis will be more complex and time-consuming. We intend to evaluate halibut bycatch for trawl hauls containing less than 30% cod to determine if day-night differences are apparent. We will also re-analyze the data using an algorithm based on processor weekly estimates of retained catch which is similar to the one used for quota management. At this point, I feel it is appropriate for the Council's Scientific and Statistical Committee to discuss the work that has been done and provide guidance on these additional analyses. Following the June meeting, Center staff will work with their counterparts at IPHC and will provide a final report for consideration by the Council at its September, 1996 meeting.

Sincerely,


James W. Baisiger, Acting
Science & Research Director
Alaska Region

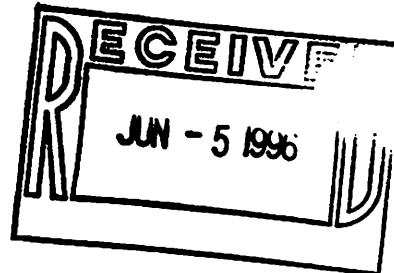




son Seafood Group, Inc. 1900 West Nackeron Street Suite 200 Seattle, WA 98119 Phone: 206-282-34 AGENDA C-6
JUNE 1996
Supplemental

June 5, 1996

Rick Lauber, Chairman
North Pacific Fishery Management Council
605 W. 4th Avenue, #306
Anchorage, Alaska 99501



RE: Ban on Night Trawling for Pacific Cod

Dear Rick,

I am writing to express our company's opposition to the proposed ban on night trawling for Pacific cod to be discussed under agenda item C-6 at the June Council meeting. As you know, this item was discussed by the Council back in 1993. At that time, the Council chose not to proceed with this proposal as it was deemed unenforceable by the NMFS Enforcement Division. I agree that this is one of the main concerns with this proposal, however, I also believe that there are other factors of this proposal that should be considered.

There is some past evidence that trawling for Pacific cod at night has resulted in greater halibut bycatch than day time trawling. In order to relate this claim to our operation, I looked at the observer data for our six catcher vessels for the 1996 BSAI Pacific cod fishery. Four of these vessels are 100% covered by observers and two are 30% vessels. The conclusion, after splitting up each vessel's tow times based on sunrise and sunset data for the Unalaska area, was that only one of the six vessels showed a halibut bycatch rate that was higher during night time tows. All other vessels showed rates that were less than the day time tows. This does not disprove, by any means, that night trawling, at times, can result in higher halibut bycatch than daytime tows. What it does show, however, is that night time trawling for Pacific cod can be done successfully without incurring high halibut bycatch.

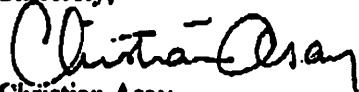
Our feeling is that the decision to trawl for cod at night should be left up to the captain. Individually, these captains need to be responsible and held accountable for their fishing operation. If they feel that tightly schooled fish or low presence of halibut will enable them to successfully trawl at night, they should be able to do that. The decision to fish at night on good fish sign is no different than choosing to tow in an area during the daytime that has known high halibut bycatch. How can you close night fishing without closing day time halibut hotspots?

One other potential problem we anticipate concerns the time table for the closure. Due to the highly fluctuating day and night time hours in the BSAI, a regulation such as this one would require NMFS to publish daily time tables indicating the time vessels could trawl for Pacific cod. This seems very time consuming, difficult for a vessel operator to follow and would further the enforcement problem. A regulation such as this one would also have an economic impact on

vessels during the winter and early spring months when they would conceivably have as few as six hours to fish. This is also when the peak of the Pacific cod fishery occurs.

In conclusion, we are not in support of the night time trawl ban for Pacific cod fisheries for the reasons above as well as the ones outlined by the Council and NMFS. Efforts that would go in to a program such as this one should be redirected to concentrate on a VBA program that would help address this problem, as well as many other related prohib bycatch problems in our fisheries. Thank you very much for the opportunity to comment on this issue.

Sincerely,



Christian Asay
Tyson Seafood Group