

# North Pacific Fishery Management Council

Richard B. Lauber, Chairman  
Clarence G. Pautzke, Executive Director

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## MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke  
Executive Director 

DATE: November 8, 1994

SUBJECT: Materials for Teleconference

### ACTION REQUIRED

- a. Receive report on red king crab bycatch in the Eastern Bering Sea; consider Emergency Rule to close areas to trawling.
- b. Consider recommending an increase in VIP bycatch rate standards for the BSAI other trawl category.

### BACKGROUND

#### Red King Crab Bycatch

In September, the Council received a status report on crab stocks from the Crab Plan Team. Results from the 1994 Eastern Bering Sea crab survey indicated that female red king crab abundance in Bristol Bay was below threshold. As a result, the State did not open the directed pot fishery for Bristol Bay red king crab, and prohibited fishing for Tanner crab east of 163°W longitude. In their report to the Council, the Crab Plan Team recommended that the red king crab PSC cap east of 163°W longitude be set at zero (which effectively eliminates trawling). The Council did not take action in September, but requested that additional data on crab bycatch in the groundfish fisheries in this area be provided for the teleconference, at which time the Council would make a recommendation on possible emergency action to close areas to groundfish trawling to protect red king crab.

Dave Ackley from ADF&G has provided the enclosed report on red king crab bycatch relative to several area closure alternatives. The closure alternatives considered in the discussion paper, based on 1/2° by 1/2° longitude blocks, were the following:

1. The portion of Zone 1 east of 163°W Longitude.
2. The 5 blocks to the west of Area 512 as suggested by the observer data.

3. Two blocks as defined and revised by participants in the rock sole fishery.
4. Two blocks as originally defined by participants in the rock sole fishery.
5. The four blocks proposed by the Alaska Crab Coalition.

These alternative closed areas are shown in the report figures. Mr. Ackley will be available at the teleconference to report on his analysis and answer questions.

#### Other Trawl Category VIP Standards

A vessel incentive program (VIP) to reduce bycatch rates of halibut in the GOA and BSAI trawl fisheries and red king crab in Zone 1 of the BSAI is based on the specification of bycatch rates standards that, when exceeded, constitute a violation of the regulations implementing the VIP. Bycatch rate standards are specified for the following fisheries: BSAI midwater pollock, BSAI bottom pollock, BSAI yellowfin sole, BSAI other trawl fisheries, GOA midwater pollock, and GOA other trawl fisheries.

At the September Council meeting, representatives from the trawl industry proposed a program to increase codend mesh sizes used in the rock sole fishery. The program would be voluntary, as mesh size regulations (and the related changes to the VIP other trawl category) recently adopted by the Council would not be in effect until about mid-1995. One reason fishermen have not voluntarily increased their mesh size in the past was the resulting possibility of exceeding VIP rate standards. As such, fishermen have requested the Council to consider increasing the bycatch rate standards for the BSAI other trawl category for the first half of 1995.

Existing regulations allow for a timely assessment of changes in prohibited species bycatch rates and for an adjustment in specified bycatch rates standards if appropriate. An upward adjustment to account for increased bycatch rates in the other trawl category is within the scope of existing regulations governing the VIP and could be implemented if available information warrants such an adjustment. Bycatch rate standards are adjusted at least twice a year or as frequently as necessary based on the following information:

- (A) Previous years' average observed bycatch rates for that fishery;
- (B) Immediately preceding season's average observed bycatch rates for that fishery;
- (C) The bycatch allowances and associated fishery closures specified under §675.21;
- (D) Anticipated groundfish harvests for that fishery;
- (E) Anticipated seasonal distribution of fishing effort for groundfish; and
- (F) Other information and criteria deemed relevant by the Regional Director.

Information on which to adjust the standard for the other trawl category is limited. Bycatch rate standards, by fishery and quarter, for purposes of the vessel incentive program in the 1994 BSAI and GOA fisheries are listed in the attached table, along with bycatch rates observed in the 1992, 1993, and 1994 fisheries. The BSAI other trawl category (including Pacific cod and rock sole fisheries) bycatch standard was 2.5 Zone 1 red king crab/mt of groundfish and 30 kg of halibut/groundfish mt. Under a 6" mesh regulation, catch-per-unit-effort for rock sole was projected to decrease by about 27-55%, according to the analysis for proposed mesh regulations. To compensate for potential changes in crab and halibut bycatch rates resulting from voluntary increases in codend mesh size used in the rock sole fishery, a VIP bycatch rate standard for the other trawl category may need to be set in the order of 46.5 kg of halibut and 3.9 crab per metric ton of groundfish. However, all other fisheries included in the other trawl category (e.g. Pacific cod, Atka mackerel, other flatfish) would be allowed the increased bycatch rate standard, until regulations that break out rock sole from this category are in effect.

1992 - 1994 (through 03/31/94) observed bycatch rates, by quarter, of halibut and red king crab in the fishery categories included in the vessel incentive program. Also listed are the bycatch rate standards established for 1994.

Halibut Bycatch (Kilograms Halibut/ MT Allocated Groundfish Catch)

<u>Fishery and quarter</u>	<u>Bycatch Rate Standards</u>	<u>Observed Bycatch Rates</u>		
		<u>1992</u>	<u>1993</u>	<u>1994</u>
<b>BSAI Midwater Pollock</b>				
QT 1	1.0	1.40	0.95	0.17
QT 2	1.0	0.73	0.20	0.01
QT 3	1.0	0.50	0.06	0.50
QT 4	1.0	0.40	0.12	
Year to date		0.87	0.43	0.25
<b>BSAI Bottom Pollock</b>				
QT 1	7.5	7.58	7.49	2.71
QT 2	5.0	4.34	2.72	29.67
QT 3	5.0	2.31	0.84	4.12
QT 4	5.0	0.29	25.28	
Year to date		5.64	6.86	3.43
<b>BSAI Yellowfin sole</b>				
QT 1	5.0	****	****	2.70
QT 2	5.0	3.40	13.02	5.98
QT 3	5.0	3.71	1.82	3.22
QT 4	5.0	5.52	3.34	
Year to date		4.02	6.18	5.10
<b>BSAI Other Trawl Fisheries</b>				
QT 1	30.0	12.20	8.80	9.02
QT 2	30.0	16.25	13.69	20.00
QT 3	30.0	4.81	4.66	3.51
QT 4	30.0	0.94	3.91	
Year to date		12.83	9.25	12.39
<b>GOA Midwater Pollock</b>				
QT 1	1.0	0.11	0.01	0.06
QT 2	1.0	0.06	0.02	0.07
QT 3	1.0	0.03	0.03	0.56
QT 4	1.0	0.35	0.05	
Year to date		0.11	0.03	0.23
<b>GOA Other Trawl fisheries</b>				
QT 1	40.0	19.75	34.49	19.97
QT 2	40.0	22.08	26.80	43.13
QT 3	40.0	24.14	33.90	26.83
QT 4	40.0	26.85	37.81	
Year to date		21.95	33.04	27.09

Zone 1 Red King Crab Bycatch Rates  
(number of crab/mt of allocated groundfish)

<b>BSAI yellowfin sole (in 1992, includes other flatfish)</b>				
QT 1	2.5	1.19	****	0.68
QT 2	2.5	1.34	2.19	0.23
QT 3	2.5	0.00	0.00	0.00
QT 4	2.5	****	0.27	
Year to date		1.34	1.30	0.33
<b>BSAI Other Trawl</b>				
QT 1	2.5	1.19	2.39	1.78
QT 2	2.5	1.72	0.04	0.02
QT 3	2.5	0.00	****	0.00
QT 4	2.5	****	****	
Year to date		1.21	1.50	1.18

# PETITION TO DECREASE ALL CRAB BY-CATCH IN THE BERING SEA

October 18, 1994

We the undersigned would like the NPFMC to take immediate and emergency action on the King Crab, Tanner Crab, Opilio crab by-catch in the Rock Sole and Yellowfin Sole fishery in the Bering Sea.

**NAME**

**ADDRESS**

<i>James Left</i>	POP 1725 Sitka AK
<i>Victor Kuitan</i>	2039 HPK Sitka AK
<i>Kate [unclear]</i>	311 Peterson Av. Sitka AK
<i>[unclear]</i>	Box 2473 Sitka AK
<i>[unclear]</i>	Box 639A Sitka AK
<i>Lauri Johnson</i>	CD BOX 6384 SITKA ALASKA
<i>[unclear]</i>	Box 6448 SITKA AK
<i>Randy [unclear]</i>	305 Islander Dr Sitka AK
<i>Helena</i>	102 Kahole Dr Sitka AK
<i>Jay Skordal</i>	106 Chirikof Dr. Sitka AK
<i>James R. [unclear]</i>	P.O. 190484, Anchorage, AK
<i>Dennis Hicks</i>	726 Siginaka Way - Sitka
<i>Nancy Belenken</i>	PO box 6065 SITKA AK 99835



November 7, 1994

Mr. Richard B. Lauber, Chairman  
605 West 4th Avenue  
Anchorage, Alaska 99501

Dear Mr. Lauber,

Golden Age Fisheries has operated the F/T Rebecca Irene in the rock sole with roe fishery since the mid-eighties. For the past few years, we have been working with other participants in the rock sole fishery to devise ways to reduce bycatch and waste in that fishery. During the current year, the industry has come together and developed a comprehensive program to address these concerns in the 1995 fishery. Mike Peterson, Mark Kandianis and I presented these measures to the Council on behalf of the rock sole fleet at the Council's October meeting. The proposal includes the following elements:

1. **Bycatch and Retention Information Clearinghouse** -- Participants will fund an independent service to collect and process daily bycatch and groundfish retention data. The purpose of this data collection is to provide meaningful and timely information to the rock sole fleet regarding king crab and halibut bycatch rates by specific location so that PSC caps are not exceeded and the rocksole fishery is conducted with the lowest possible crab and halibut bycatch rates. Another purpose is to provide information on rock sole vessels' groundfish retention rates by location so that vessels can avoid areas where discards are likely to be high. Bycatch and retention data will be received, processed, plotted, and provided to vessels in a format similar to the one used in the SEASTATE program for salmon.

2. **King Crab Area Closure** -- The rock sole fleet agrees to a voluntary closure of ADF&G statistical areas 162560 and 163560. Averaged over that past three years, thirty-five percent of the groundfish and sixty-six percent of the king crab were taken in these two statistical areas. This closure will be in effect through the annual spring closure of area 516. In addition to this closure, the rock sole fleet will use the information provided by the data clearinghouse to make additional "hot spot" closures as needed in order to further reduce king crab bycatch.

The preliminary results of some additional analysis of the data show that the closure of these two areas would provide the most efficient protection possible to king crab while causing as little displacement of the fleet as possible. Additional closures will provide minimal protection for king crab while reducing groundfish catch to a much greater degree.

**3. Large Mesh Codends --** Vessels participating in the program will be experimenting with a variety of large mesh codends to determine the best methods for reducing the take of small, unmarketable fish. All members of the fleet have agreed to at least use six inch (between the knots) single-layer mesh for the top panels of the codends. In 1994, the most common mesh size used in the rock sole fishery was double-layer 4 1/2 inch mesh. Other vessels will be using six inch mesh on all sides of the codend. Using six inch web in the rock sole codends will considerably reduce the bycatch of small rock sole, pollock, cod, and other flatfish species. The results of this experiment will provide information on which the fishing industry can base refinements of its rock sole mesh size proposal.

Due to the expected decrease in overall groundfish harvested under this program, we anticipate that there may be an increase in the kilograms of halibut caught per metric ton of harvested groundfish and will therefore need an adjustment of the VIP rate.

As you know, the Council took action on this at the October meeting. The fleet asks that as an option to the mandatory use of six inch square mesh on the top panel of the codend, it be given the option of using 6" diamond mesh on the top, side, and bottom panels.

**4. Increased Utilization of Catch --** The rock sole fleet expects to increase the retention of groundfish catch in the fishery by at least thirty percent. In addition to the reduction in discards that will result from the use of large mesh codends, the rocksole fleet agrees to process more of the marketable non-rock sole with roe species (male rock sole, cod, pollock, other flatfish).

I encourage the council to support the fleet's efforts in reducing bycatch and discards in the rock sole fishery. If the Council decides that an emergency king crab habitat closure is warranted, then I strongly recommend that the area outlined above, and nothing more, be closed.

Thank you for your consideration of this matter.

Sincerely,



John Henderschedt  
Director of Operations

Pioneer Alaskan Fisheries  
John W. Hillstrand  
P.O. Box 674  
Homer Alaska 99603

11/07/94

Re: Crab Bycatch

Dear Sirs,

Midwater trawling west of 166 longitude... yes. Bottom trawling east of 166... No!

Now put your emotional decisions behind you and lets stick with the facts. Either you do it or you don't. Any form of trawling with roller gear or tickler chain must be abolished completely. Bycatch of all Crab species must be zero. Regulate the trawl fleet immediately.

There is no more time for sharp differences about the best way to reduce waste without crippling the bottomfish industry. We are all being crippled by your delay to regulate bycatch of the trawl fisheries.

Sincerely,



John W. Hillstrand,  
President

NANCY HILLSTRAND  
 P.O. BOX 674  
 HOMER, ALASKA  
 99603

Greetings,  
 The Bristol Bay Red King Crab Fishery is closed this year...  
 The Crab fleet can no longer afford the trawl fleet to maximize its profits in the crab grounds, 20 million Crab thrown overboard. Years of entire King Crab quotas ...

The Herring fisherman can no longer afford trawlers to maximize their profits at the expense of the herring spawning grounds. During spawning!!

King Salmon fisherman are at the end of their line also and simply can not afford over 100,000 salmon, their quota, to be thrown overboard as wasted bycatch, or given away, by the trawl fleet while they wait on shore unable to fish...

Halibut fisherman are scrutinized and monitored while the trawl fleet discards 20 million pounds of Halibut, (years quota), overboard without conscience...

The consumer is impacted from higher prices as species dwindle. This affects the domestic market...

What damage is being done to untracked "discard species" lost overboard which will be considered quality seafood on tomorrows market. Gone unknown...

How many Juveniles crushed and mutilated. The future of all fisheries dead, thrown overboard...by the 100s of millions.

Marine Mammals declining? Funny their decline aligns with trawling?

500-700 million pounds of wrong sex or wrong species bottomfish discarded, thrown out, wasted as bycatch each year by the trawl fleet. You have got to be kidding!!

When the Bering Sea bottomfish stocks collapse as they are today on the Georges Banks, and fisheries close, will the trawl fisherman cry for government relieve for not following the sustained yield principal like the logging industry? Will government agencies play dumb begging for money to reseach the collapse? You bet they will. With our taxes!

Who is responsible? The North Pacific Fisheries Management Council, The National Marine Fisheries Service and greed... in the pressure cooker... Bycatch is no longer on the back burner.

Common sense stares us squarely in the face. There is no time left to pacify economic stress to the bottomfish industry which leave such deep biological distress in their wake. We are all being crippled by this unregulated fishery.

Now is the time for the trawl fleet to hone their fishing skills from a free for all to a fine tuned target fisheries with 0 bycatch. they best be honed or they best not fish.

Sincerely,  
 Nancy Hillstrand  
 907-235-2572

EAST OF 163° IS A  
 MUST - ON OUT FARTHER  
 WOULD BE BETTER!  
 WE WILL BE WATCHING



Olof Vedoy  
1805 Village Green Dr.  
Mill Creek, WA 98012  
November 3, 1994

Honorable Ron Brown  
Secretary of Commerce  
Room 5516  
Hoover Commerce Building  
Fourteenth and Constitution Avenue  
Washington, D.C.

Dear Secretary Brown:

I am a fisherman of many years' experience in Alaska. Please consider my thoughts on crab management and limited entry.

Crab Management

The king crab quota has gone down from 14,000,000 pounds to zero for the fishing fleet. Trawl bycatch is 240,000 crabs - not pounds. The bairdi quota has gone down to 7,000,000 pounds. Allowable trawl bycatch is 3,400,000 crabs. The opilio quota has gone down to 55,600,000 pounds - and trawl bycatch is unlimited.

Over the past few years, baridi and opilio quotas have gone down each year for the crab fishermen. The king crab fishery was closed by emergency in 1994, and there will be no fishery in 1955. But the bycatch quota for draggers has remained the same for the last few years.

I think it is time to ask ourselves if somebody in the management of the fisheries is still sleeping, or did they just forget? Should the concern about dwindling crab stocks just be paid for by the crabbers, letting the draggers go untouched? We should reverse our thinking.

Trawl bycatch figures are reached by counting crabs emptied out on deck from cod ends. Trawlers also kill crabs under the nets, so it is safe to say that the mortality of crab caused by the drag fleet is way above the figures that appear in the observer report.

I think we are entitled to ask why the bycatch quota for draggers has not been revised downwards, just as the quota has been cut for the crab fleet. If the concern about crab stocks is so big that management can shoot down the whole crab fishery, there should be concern about trawl bycatch, too.

Limited Entry - Good Or Bad?

Limited entry in the fishing fleet is a touchy subject, because there is a fine line between protecting our own interests and the interests of future fisheries for generations to come. Fishing is a big industry, and it generates income for many people.

In the past there has been improvement in the search for selective fishing gear, especially in the catching of cod. By using jig, pot and longline gear we minimize bycatch and let small cod escape unharmed. That is particularly true for pot fishing. This should help minimize destruction of the stocks. The resource will last longer, there will be room for more boats, and young people can have a future to look forward to.

In other fisheries there can be new methods of catching the different species, so that bycatch can be kept to a minimum. Fisheries in Alaska are still in good condition, so we can rebuild and make sure that future generations have fisheries with selective gear.

Let's take a lesson from different parts of the world, where fisheries were hit hard by today's modern trawl gear - years and years before it started in Alaska.

Sincerely,

Olof Vedoy  
F/V Blue Fin



Bruce Gnad  
Debbie Rehder  
Mike Tolva  
3955 Nielson Circle, Suite A  
Homer, Alaska 99603

November 7, 1994

Mr. Rick Lauber, Chairman  
North Pacific Management Council  
PO Box 103136  
Anchorage, Ak 99501

Dear Mr. Lauber,

We represent a group of concerned crab fishing vessel owners and operators in our area who have been researching the effect of trawling bycatch on the Bering Sea Red King Crab population. As you are aware, our Bristol Bay Red Crab season has been canceled due to lack of sufficient numbers of mature female crab. In addition, our Bairdi Tanner Crab season has been truncated to approximately 50% by an area closure east of 163 Degrees West Longitude in a related conservation effort to reduce crab mortality associated with fishing effort. We are adamantly opposed to additional bycatch removals of crab while the directed fisheries is closed, and would like you to consider the following factors in making your decision:

- 1) Abundance of crab within the BSAI area and mortalities as a consequence of fishing operations are estimates only, but it appears that a comparison between the size of harvest of Other Flatfish (SAFE Report, 9/94, BSAI Plan Team Table 2, pp22-3) and Red King Crab small female crab abundance (NWAFC Processed Report 90-09 & AFSC Processed Report 93-14), clearly reveals a disastrous direct consequence to small Red King Crab any time the Other Flatfish harvest exceeds 50,000 metric tons. In addition, the cumulative direct removals of mature female Red Crabs observed as bycatch is enough to have precipitated the current closure. These bycatch removals cast extreme doubt upon the long term reproductive potential of Red King Crab Stocks. It is our contention that the scarcity of small Red King Crab is a direct consequence of the trawling operations. These fishing practices disrupt normal daytime podding behavior of juvenile Red King Crab, exposing individual crabs to an exacerbated rate of predation not encountered while in the pod environment.

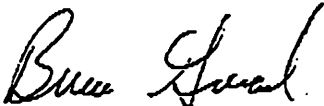
- 2) The existing PSC for trawl fisheries appear to be ineffective in limiting bycatch to a specific number. These caps are being exceeded on a magnitude of 100% either through problems with successful enforcement or untimely reporting of observation numbers. The cumulative effect on crab stocks is devastating, especially when viewed in the context of this year's Red King Crab closure. It appears that within the trawling community there are a few vessels whose fishing practices contribute a disproportionate amount to the bycatch numbers. It is imperative that whatever management scheme is implemented in the future, that sufficient resources be dedicated to rigorously enforce area closures, PSC, gear type, and observed bycatch.
- 3) We are attempting to generate an analysis of the relative worth of either trawling or pot fishing from a Net Benefit to the Nation perspective. Our information contained in the analysis to date, appears to show that for every dollar of Rock and Yellowfin Sole contributed to the national economy as much as three dollars of other species of fish, both target as well as bycatch, and crab are destroyed.

In conclusion, we ask the NPFMC adopt the following measure in order to implement an immediate emergency conservation regimen:

HOMER CRAB GROUP PROPOSAL

A ban on all non-pelagic (bottom trawl) trawling operations east of 165 Degrees West Longitude and south of 58 Degrees North Latitude to the north shore of the Alaska Peninsula and Unimak Island.

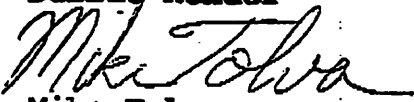
Sincerely,



Bruce Gnad

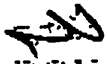


Debbie Rehder



Mike Tolva

PG #1

 -DAVID HILLSTRAND  
BOX 1500  
HOMER, ALASKA 99603  
(907) 235-8706

## NORTH PACIFIC COUNCIL.

Regarding the collapse of the crab stocks in the Bering Sea, and Bristol Bay.

Thank you for asking the industry for input on this important matter! For the economic stability of this resource is greatly needed! We will give you the needed information to correct this problem; but unless you listen to us, and then take action, we will see the crab stocks decline to where they will never recover! Along with this the loss of jobs will be felt through out the American economy!

There are over 250 vessels that fish this resource. Each employees about 5 to 6 people; 1250-1500 people who have families. This is just the vessels and does not include the processing industry. This year the Bristol Bay red crab season was closed not because of unharvestable male crab but to the low threshold of female crab. The lack of that income into our economy hurt many people.

The over all abundance of crab has declined though; due to over fishing and to the bycatch and waste of crab. These are problems that need to be addressed immediately!

1. Over fishing; quotas exceeding what the resource can handle.
  - a. State wide declines of crab stocks with no recovery in sight can be seen through out the state of Alaska. Cook Inlet, Kodiak, Alaska Pen. These areas will never see there historic levels because of mismanagment.
  - b. Biologists stating that we have overharvested.

c. Recent studies by the ADFG stating that only certain males of a species will mate. Larger males mate more than smaller ones: that the taking of all the large male crab may not leave enough brood stock. Leading to poor recruitment and the loss of a long term economic gain to the Nation

d. If the exploitation rate were only 20 % than we would have 9-10 inch male crab in the Bristol Bay red crab fisheries, or at least a 7.5 lb average. This is caused by assuming a biomass. Leading to over fishing. Not by the vessels, but by the management of the ADFG and the NPC for you are the agencies that set the quotas.

d. The life cycle or the length of a crabs life is unknown. Yet the death rate of large crab is assumed. It may be that the size of a crab is slowed down after a certain age. That its life cycle may exceed 20- 30 years? That at a certain size they escape the food chain or provide protection to the schools of crab during molting and mating?

e. The biomass that is estimated by surveys is poor and unreliable. The exploitation rate is known, the catch is known, but the biomass is guessed at. The need to lower the quota from historic levels is needed immediately. For it is a known figure, and can be adjusted.

f. Smaller harvests are justified because of the economic gains that we will have in the future. The price paid for crab is usually higher with a small supply and lower with a large supply. The industry is benefited by lower quotas. Safety is increased with less time being spent on the ocean. In the Fisheries Management report it is recommended that you delete the words of being able to harvest large quotas for immediate income, and justified the loss in the future. Have David Withersall look up the page; he will find it for you.

2. Handling of crab by the vessels has been studied by the ADFG for the mortality of those crab returned to sea. The conclusion is that there is no relative difference. The vessels have improved there handling of the crab and how they are returned to the ocean. The times of year that these studies were done are early, when the

crab were still harding. The Fisheries occur at later dates when the crab are harder.

a. Gear restriction have produced less handling of crab. Mesh size eliminating smaller crab, and tunnel openings excluding larger crab and fish from the pots. Pot limits have slowed the fleet down, most vessels let there gear soak at least 24 hrs to maximize the crab per time the pot is pulled. The more pots the longer one can pull gear with out stopping. On the average a vessel pulls about 150 pots per day. The soak time is critical for a vessel to maximize the effort. With the 50- 75 pot limits in St. Matthew and Pribilof Islands the gear is soaked for at least 24 hours; with it only taking 10 hrs to pick and arrange ones gear leaving plenty of time for rest. Safety has increased because of this! So if the council really wants to produce safety it can proceed by reducing the gear on each vessel! IF you are serious! In the Bristol Bay crab fishery with 200-250 pots a 48 hr soak will lead to a higher catch per pot a 7 day soak will even be greater. The council should consider further gear restrictions in the crab fisheries that are declining. Having the gear reduced on a fluxuating scale with the quota: from 200-250 pots to 150-125 pots. This is needed to have an accurate assesment of the catch per unit of the fleet. Less gear per vessel makes an operator chose the location of each pot, to maximize the most product per pull. This will cause the fleet to target only the chosen species for each opening. Gear restrictions along with the race for the fish does make the industry clean up its act! The race for the fish might not be that bad for the resource! It sure does give the biologist an accurate catch per unit; with making sure that the biologist do not lose in season managment!

3. Bycatch and waste have to be addressed immediatly. The dragging industry has cause the destruction on resources form Europe, the East Coast, the West Coast, Kodiak. Trawling has been banned in Cook Inlet because of the bycatch of crab that would not allow for their recovery! Contact the ADFG in Homer. Closures in Kodiak have been put in place in certian bays. The NPC has closed down trawling in the Bristol Bay area, and

David Hillstrom #4

recently in the Pribilof Island area. All of these closures are too late and have caused a resource to decline. When bycatch is added to over fishing it leads to uncontrollable problems!

Without the council changing the way bottom fish are harvested. Such as from trawls to pots or longline gear. Area closures are needed to protect these last crab stocks and the economic benefit to the vessels that fish this resource. The NPC has the areas with high crab bycatch rates, and can take action! But will the NPC do anything; or do enough? If the NPC is concerned for the resource and the benefit to the Nation. It will proceed in protecting the resource and not certain individuals!

a. The opilio fishery needs areas shut down.

1. 513,514,517,521,522,524

a. They can be done in a timed fashion. Spring, summer and fall the shallow areas of these sections need to be closed. In the fall and winter the deep areas need protection. Especially the canyons that lead up to the shallows. In these areas there are high places of bycatch. These blocks need protection.

b. The King and Tanner crab in the Bristol Bay area need to be protected from bycatch. The only way you will do this is to close down the area of high bycatch. This will cause the industry to change the way of harvesting fish, that are targeted, which lead to bycatch and waste in a different. Unless you cause the industry to change its gear we will not! The council has to take action!

1. 57.00-158.30 to 57.00-166.00 to 54.00-166.00 needs to be shut down to all bottom trawling.

a. To protect the King and Tanner crab stocks, and their food source.

b. To create an economic stability for the commercial fleet that rely on this resource.

c. To make the industry clean up its act and reduce bycatch. By harvesting these fish in another manner. We would like to longline pots for yellow, and rock fin sole. Give us a chance to do this in the coming year!



76745<sup>P.05</sup>

d. If you do this in stages you will have taken to long! The NPC will be responsible for the destruction of this resource! The loss of job to our nation! With the inability to uphold the laws that regulate the council!

It is your chose and your vote that will determine the out come of our lives! Please chose to protect the resource and cause the industry to change!

*David Hillstrand*

DAVID HILLSTRAND

*we will see you in Dec.*

## Alaska Fisheries Conservation Group

P.O. Box 11-1748 Anchorage, AK 99511  
P.O. Box 910 Woodinville, WA 98072

(907) 346-3145 Fax (907) 346-3154  
(206) 488-7708 Fax (206) 823-3964

November 7, 1994

Rick Lauber, Chairman  
North Pacific Fisheries Management Council  
Anchorage, Alaska

Dear Rick,

Our group of 13-BSAI crabbers recommends that the Council not allow bottom-trawling or near-bottom trawling East of 163W Longitude in Zone 1 during 1995. The Council's Crab Plan Team recommends the same.

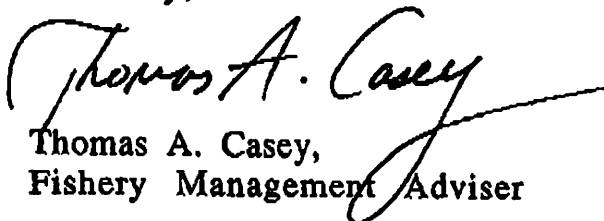
NMFS and ADF&G are so concerned about the declining abundance of female Red King Crab in Bristol Bay that they have cancelled the 1994 King Crab season. Everyone realizes that by now.

In addition, the Bairdi Tanner crab fleet has been locked-out of the grounds East of 163W for the same reason: female King Crab conservation.

During your teleconference on November 14, we know you will hear trawl group-advocates ask you to make an exception for their fishery East of 163W because of so-called "special circumstances".

Please resist their plea for an exclusive privilege that would allow them to drag the Red King Crab grounds from which crabbers have been excluded. A double-standard like that would undermine confidence in the Council's fishery management decisions. Please hold all of us to the same degree of fishery conservation East of 163W.

Sincerely,

  
Thomas A. Casey,  
Fishery Management Adviser

# Kodiak Fish Company

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F/V Alliance F/V Provider  
P.O. Box 469, Kodiak, Alaska 99615  
907-486-6002  
Fax 907-486-2617

Nov. 8 1994

Mr. Richard B. Lauber  
Chairman  
North Pacific Fishery Management Council  
P.O. Box 103136  
Anchorage, AK 99510

Dear Mr. Lauber:

As a member of the Rock Sole fleet I Mark Kandianis as owner of the F/V Alliance support the following

**1 Bycatch and information clearing house**

Participants in the rock sole fishery are now in the process of an agreement with Sea State to gather bycatch information to be used in a more timely manner than has been available in the past. This will allow the fleet to react to bycatch hot spots thus working to minimize bycatch

**2 King Crab area closure**

ADF+G stat area 625600 (44% of the crab bycatch Tac) and area 635600 (25% of the crab bycatch Tac) would be acceptable to close on a trail basis

\*The affects of non trawling crab sanctuaries have not proven to be effective in the past to have benefited the King Crab resource (The Gulf of Alaska ,Kodiak)

**3 Large mesh Cod ends**

The fleet has agreed to use large mesh single layer 6in Cod ends starting this coming season to reduce the catch of non usable bycatch

**4 Increase in the VIP rate to accommodate the increase in Cod end mesh size**

The have been several vessels using 6in single layer cod end in the Bering Sea this year on sole and as a result it has proved to reduce unwanted bycatch by 25+% . A by product of this has been decreased handling of non target fish and increased vessel efficiency.

Note Predation is an important issue that seems to have been overlooked in the analysis of this fishery and it's effects have been documented in papers such as NOAA Tech. Memorandum NMFS F/NWC-207 Further study in this field is well warranted considering it implications on fish biomass.

Sincerely,

  
Mark Kandianis

98-4456

CHRIS BUCKBROOK  
AGDB



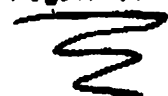
# NOAA Technical Memorandum NMFS F/NWC-207

## Groundfish Food Habits and Predation on Commercially Important Prey Species in the Eastern Bering Sea from 1984 to 1986

**Editor:**  
Patricia A. Livingston

**Authors:**  
Geoffrey M. Lang, Patricia A. Livingston,  
Robert Pacunski, Jeffrey Parkhurst,  
and Mei-Sun Yang

August 1991



**U.S. DEPARTMENT OF COMMERCE**  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service

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consumed implies they were postlarvae that had not yet settled to the bottom. Deriso (1987) suggests that these fish may be transported into the Bering Sea from the Gulf of Alaska. It is possible that yellowfin consumption of halibut is a transitory phenomenon, occurring during restricted time periods when postlarvae are swept into shallow waters and start settling to the bottom. The total consumption estimates assume that predation is occurring throughout the month 5 to 9 period, whereas the vulnerability of young halibut to yellowfin sole may be of shorter duration, implying that consumption estimates are probably high.

### CONCLUSIONS

Predation by Pacific cod and yellowfin sole on Tanner and snow crabs appears to include a large portion of the juvenile Tanner and snow crab population and may be a density-dependent factor. Walleye pollock cannibalism was the most important source of groundfish predation on age-0 pollock and may also prove to be a density-dependent factor. Figure 9 shows a breakdown of total numbers consumed of the two species of Chionoecetes crabs and of pollock by age. These numbers indicate large recruitment of snow crab in 1983-84, Tanner crab in 1984, and walleye pollock in 1985. (However, pollock stomachs were not sampled in 1984 so pollock predation in that year is a severe underestimate.) A longer time series of predation data is needed to determine whether these data can be used as early indicators of year-class abundance. A better understanding of Tanner and snow crab size at age and of the juvenile abundances of both these crabs as well as walleye pollock are needed to determine whether predation is a density-dependent factor controlling population size.

In many cases, yellowfin sole appeared to be an early sampler of Tanner and snow crabs, blue king crabs, and several flatfish species. Again, a longer time series of predation data by yellowfin sole and correlation with juvenile abundance estimates of these prey species may determine whether this predation is an early indicator of the presence of abundant year classes.

Consumption estimates for all prey should be viewed at the present time more as indices of consumption rather than actual consumption for several reasons. First, most of the calculations (except for walleye pollock as predators) consider only the time period from May through September in each year. Although this is the main feeding period for most fishes in the Bering Sea, consumption of prey certainly occurs during other parts of the year. Inadequate numbers and spatial distribution of stomach samples during other parts of the year combined with gaps in knowledge about the seasonal migrations of groundfish predators

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make calculation of predation in other parts of the year difficult without seasonal resource assessment surveys in the area.

Predation estimates during the time period considered here may be underestimates for prey that are consumed year-round, such as Tanner and snow crabs that are consumed by Pacific cod. Predation estimates for yellowfin sole predation on newly settling stages of crabs and flatfishes may be overestimates if the prey species are not available to the predator during the whole time period. Also, for prey that have a very limited spatial distribution within a stratum, such as red and blue king crabs, inadequate stomach sampling throughout the whole stratum can provide biased estimates of consumption. For these prey, consumption estimates would be biased upwards if sampling was concentrated more in areas where king crab occur and estimates would be biased downwards if stomach sampling was not performed in king crab areas. Stomach sampling density was doubled beginning in 1989 so problems such as this will be minimized. Different treatment of the data can also remove the bias by weighting consumption at each station within a stratum by the predator biomass at that station.

Estimates of total numbers consumed are underestimates for most prey since prey size data were not available for all predator-stratum combinations to convert biomass consumed to numbers consumed. Additional assumptions about prey sizes consumed by each predator need to be made before converting biomass to numbers in strata lacking prey size information. Future reports may use the overall prey size distribution over all strata to compute numbers consumed in one or more strata without size information.

Total consumption estimates in terms of biomass are underestimates of total groundfish predation if important groundfish predators of a particular prey have not been sampled. Rock sole and Alaska plaice (*Pleuronectes quadrituberculatus*) are growing parts of the groundfish biomass in the eastern Bering Sea and consideration of their predation is becoming important. Similarly, Pacific halibut is a predator that consumes many commercially important prey and, although it is not a dominant component of the Bering Sea groundfish biomass, needs to be considered. Stomach sampling of rock sole, Alaska plaice, and Pacific halibut is now a regular part of the Food Habits Program.

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PREDATOR

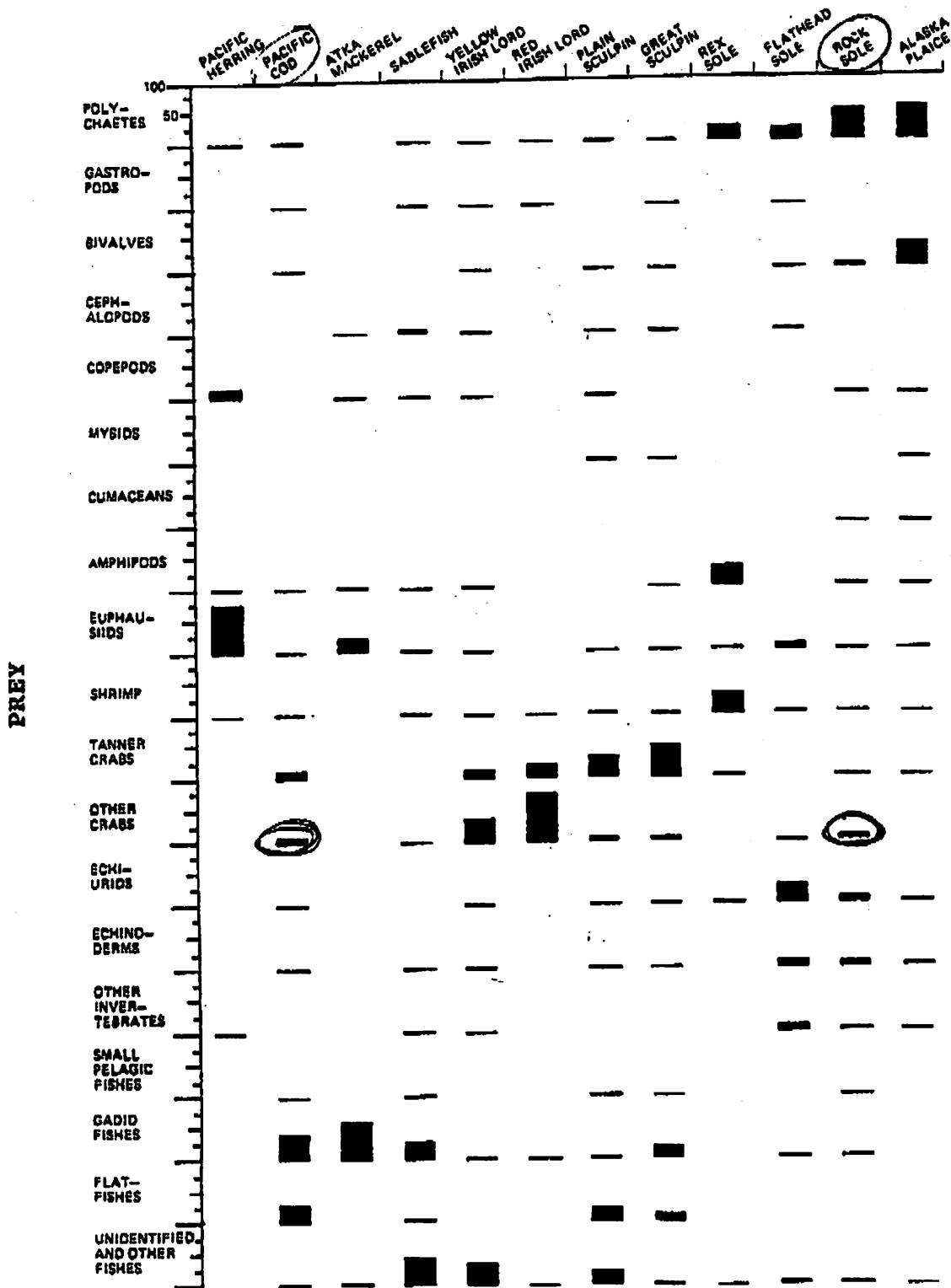
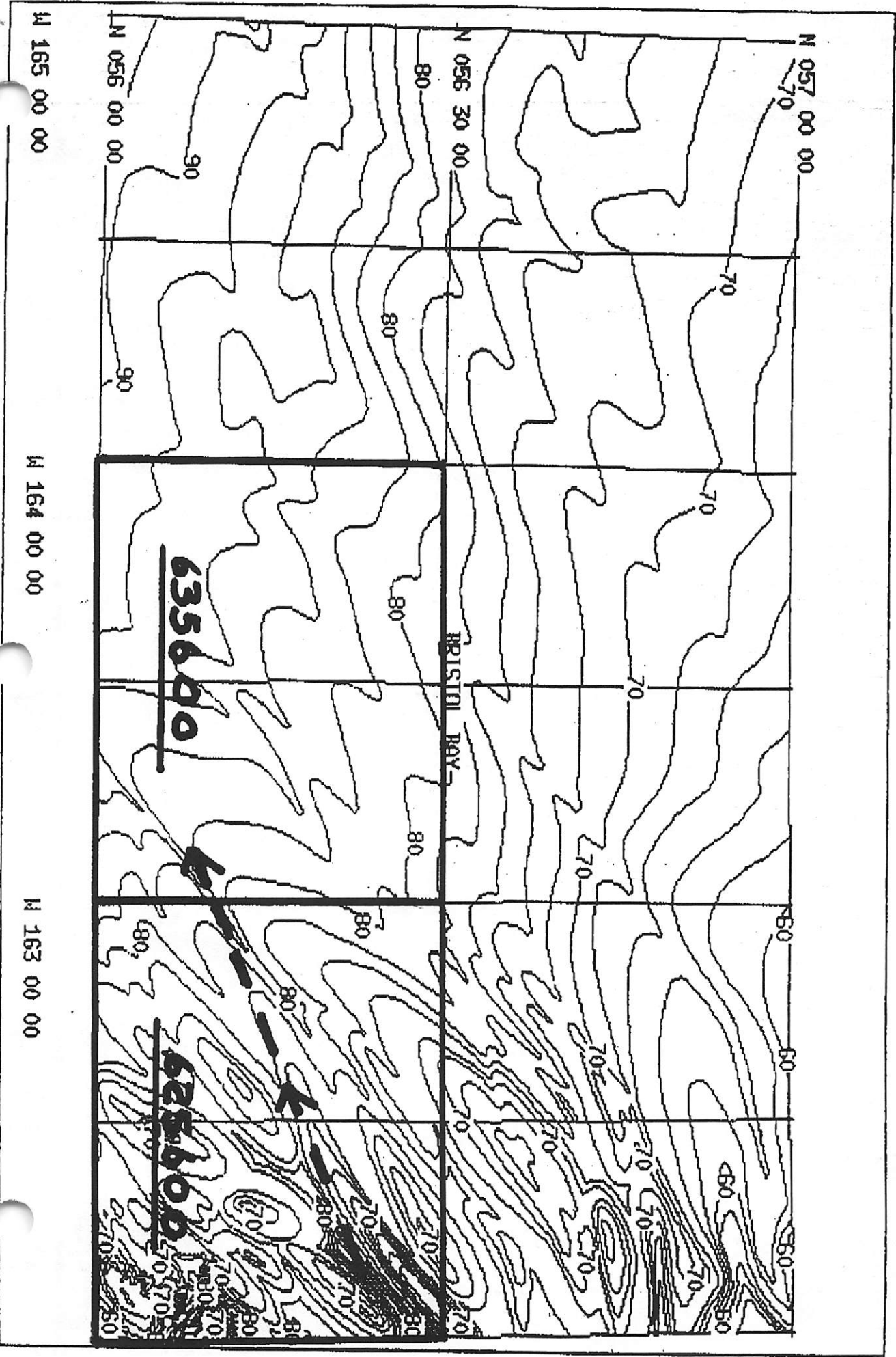


Figure 2.--Consumption of major prey categories by predators for which 60 or more stomachs containing food were examined. Height of bars corresponds to percent of total diet weight (from Brodeur and Livingston 1988).

# NO 3-8 NOAA BATHYMETRIC CHART, BRISTOL BAY, ALASKA



RCRARR + R SOLE M...  
micr...



Post-It™ Fax Note	7671	Date	11-8-94	# of pages	1
To	NPEMC	From	J. HILLSTRAND		
Co./Dept.		Co.	NEW ERA OF AK		
Phone #	907-271-2809	Phone #	907-235-2976		
Fax #	907-271-2817	Fax #			

November 8, 1994

Dear Council Members,

The mere thought of allowing the trawling fleet to drag in areas already closed to crab fishermen is appalling.

The trawling fleet has already proved their negative effects on numerous resources including Red King Crab. Lets not let them prove this again.

As you is, Red King Crab has declined in vast numbers over the years causing a closure of the 1994 season. The only way to increase these numbers is to completely ban any fishing in these areas until the resource has replenished itself to an abundant number. There is no way of estimating the dosaging effects trawling may have on the crab. They cant chose how many crab to drag up, recruits and females alive. If there is to be any future in the crab fisheries, trawling is not the answer.

Regardless of the fact that this may devastate the trawling fleet, it will be most devastating to the resource itself. If the trawlers are allowed to fish in these closed areas for reasons of greed, there will be nothing left of this resource for generations of fishermen and consumers alike. Please take into consideration the effects, and do not allow this to happen.

Sincerely,

*Johnathan Hillstrand*  
 Johnathan Hillstrand  
 Vice President  
 New Era of AK, Inc.  
 F/V Time Bandit



# ALASKA CRAB COALITION

3901 Leary Way (Bldg.) N.W., Suite #8 • Seattle, WA 98107 • (206) 547-7560 • FAX (206) 547-0130

November 8, 1994

Mr. Clarence Pautzke,  
Executive Director  
North Pacific Fishery Management Council  
P.O. Box 103136  
Anchorage, Alaska 99510

RE: COMMENT ON GROUND FISH CLOSURES TO PROTECT KING CRAB,  
NPFMC TELECONFERENCE NOVEMBER 14, 1994

Dear Clarence:

At its September meeting in Seattle, the NMFS rerorted to the NPFMC about the conservation crisis facing the Bristol Bay king crab stocks in the Eastern Bering Sea. The overall abundance of juveniles, pre-recruit and legal size king crab is at the lowest point ever since the initiation of the Eastern Bering Sea king and tanner crab survey in the early 1970s. In addition, ADF&G informed the Council that there would be no directed king crab fishery in Bristol Bay due to the below threshold abundance of mature female king crabs. The ACC also informed the Council that no directed fishery for tanner crab would be permitted in the area east of 163 degrees West longitude in Bristol Bay to protect king crab. This means foregoing almost 50% of the allowable harvest or 7.5 million pounds worth an exvessel value of over 20 million dollars.

With no allowable harvest of king crab and an area closure for bairdi crab being applied to the crab industry for conservation, it is not unreasonable to request that similar conservation standards be applied to the groundfish sector of the industry to reduce king crab mortality. This is specifically needed for the rock sole, other flatfish and yellowfin sole fisheries which have a high bycatch of king crab.

A preliminary analysis of bycatch data done by Jerry Berger, (NMFS) dated September 22nd, 1994 identifies hot spot areas of king crab bycatch in the flatfish fisheries from 1990 through 1993. (Enclosure)

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Based on the conservation crisis facing king crab stocks, the Berger analysis and the in-depth bycatch analysis being conducted by David Ackley (ADF&G), the ACC makes the following recommendations:

1. Close the areas between 163 and 164 W. longitude, below 57 degrees N. latitude identified in the Berger analysis, to rock sole other flatfish and yellowfin sole trawling. The analysis shows that these areas have consistently been areas of high bycatch from 1990 through 1993 for rock sole, flatfish and yellowfin sole. The analysis also shows that several vessels in the flatfish fleet routinely exceed the 2.5 king crab per ton bycatch rate standard each year in these statistical areas.

Closure of these areas will protect large concentrations of king crab while leaving substantial areas in Zone 1 open for the flatfish fisheries.

2. Require 100% observer coverage for flatfish fisheries in areas 516 and 511.

3. Require daily catch reporting in the rock sole other flatfish fishery to curtail cap overages.

In closing, the ACC would also like to point out that the issue of protection and conservation should not be narrowly focused on just mature females, but the Bristol Bay king crab stocks as a whole. As mentioned above, the population is presently at the lowest point of abundance since the early 1970s.

Sincerely,



Arni Thomson  
Executive Director

[90TS ON IX/II] 10:01 IX: 18/02/80



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; Bldg, 4  
 7600 Sand Point Way NE  
 Seattle, WA 98115-0070

September 22, 1994

## MEMORANDUM FOR:

F/AKC2 - Bill Karp

## FROM:

F/AKC2 - Jerry Berger *Jerry Berger*

## SUBJECT:

Zone 1 King Crab Bycatch

I have been looking at observed historical data with respect to king crab bycatch in Zone 1. The following summarizes my findings.

Observer data collected from vessels targeting flatfish were used to analyze the bycatch of king crab in Zone 1 of the Bering Sea (Figure 1). Location and time of year were examined, by individual vessel and for all vessels combined, to try to determine when and where targeting flatfish would result in king crab catch rates below the North Pacific Fishery Management Council (NPFMC) standard of 2.5 crab per ton of groundfish caught.

In 1990, the flatfish fishery (including yellowfin sole and rock sole) commenced operations on January 1. In 1991, the rock sole fishery began operations on January 1, but the yellowfin sole and the other flatfish fisheries were delayed until May 1. In 1992 and 1993, the rock sole fishery was delayed until January 20, and the yellowfin sole and the other flatfish operations were again delayed until May 1.

Most of the observed data in Zone 1 indicated a rock sole target. Thus, for the purposes of this paper, all three targets have been treated collectively as a single flatfish target.

Table 1 provides information on king crab bycatch rates (number of king crab taken per metric ton of allocated groundfish) by vessel and year. Seventy-eight different vessels targeted flatfish in Zone 1 during the four-year period being studied. In 1990, 22 vessels participated, with 6 having annual bycatch rates exceeding 2.5 crab per ton. In 1991, 52 vessels participated and 8 exceeded the bycatch rate standard. In 1992, 54 vessels targeted flatfish and 15 exceeded the bycatch rate standard. In 1993, 44 vessels targeted flatfish and 14 of them had annual rates exceeding the bycatch rate standard. In all, 36 different



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vessels had at least one annual rate that exceeded the bycatch rate standard of 2.5 crab per ton. Two of these vessels exceeded this standard in three different years, and three exceeded this standard in two different years.

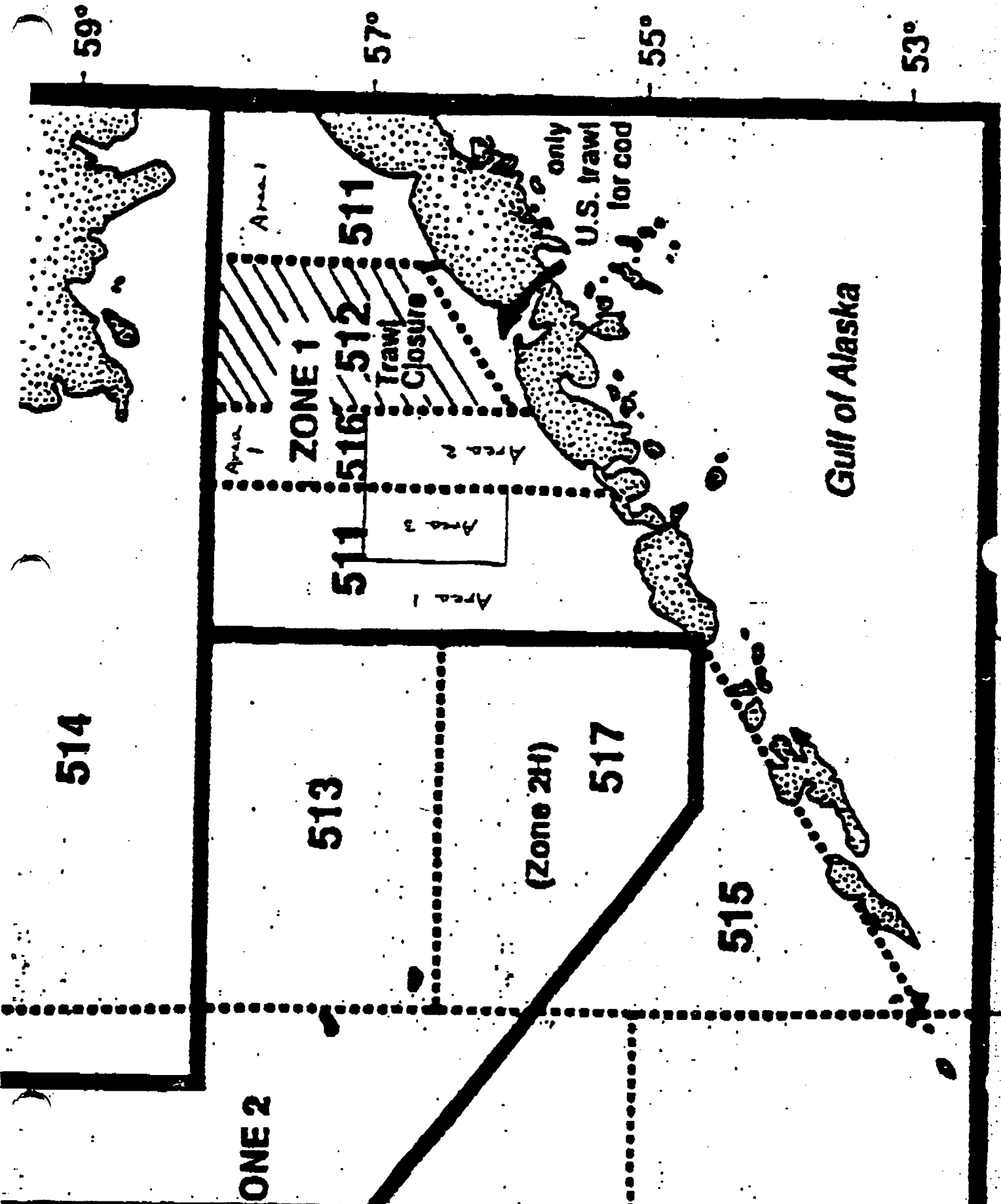
Table 2 lists the king crab bycatch rates by month and year. These data indicate that January bycatch rates exceed the 2.5 crab/ton standard for every year except 1992. The 1990 rate was 5.02. The rates for 1991, 1992, and 1993 were 3.59, 2.46, and 5.42, respectively. In February, bycatch rates were between 1 and 2 crab/ton for each year. March and April had rates less than 1 crab/ton for each year. May bycatch rates were 5.47 in 1990, 1.78 in 1991, 1.38 in 1992, and 6.44 in 1993. The other months of the year either had negligible tonnage of sampled tows or bycatch rates less than 1 crab/ton (except for June 1993, which had tonnage exceeding 100 tons and a bycatch rate of 1.49).

Table 3 provides king crab bycatch rate information by year, month, and block (1/2 degree latitude by 1 degree longitude). Tons of groundfish caught in the hauls that were sampled and the estimated number of king crab taken in the sampled hauls are given, as well as the ratios of the estimate of king crab taken to the tons of groundfish caught.

Table 4 was produced after examination of the results listed in Table 3. Month and year remained separate, but the blocks were consolidated into three areas (Figure 1). Area 2 consisted of three contiguous blocks from 55 degrees 30 minutes N latitude to 57 degrees N latitude by 162 degrees W longitude to 163 degrees W longitude. Area 3 consisted of two adjacent blocks from 56 degrees N latitude to 57 degrees N latitude by 163 degrees W longitude to 164 degrees W longitude. Area 1 consisted of all other blocks in Zone 1. (The area south of 58 degrees N latitude and between 160 and 162 degrees W longitude is closed to trawling year round and so no data are available,)

In January of each year, bycatch rates exceeded 2.5 crab/ton for both Areas 2 and 3 (except for 1991 in Area 3 when less than 100 tons of sampled tows occurred). Area 3 bycatch rates for February exceeded the standard for each year except 1992 which had a bycatch rate was 2.34 crab/ton. Bycatch rates were also high in May for Areas 2 and 3, but tonnages of sampled tows were generally less than 100 tons.

**DRAFT**



# ***Pacific Northwest Crab Industry Advisory Committee***

701 Dexter Avenue N., Suite 403 • Seattle, WA 98107 • (206)283-6605 • Fax (206)282-4572

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Garry M. Loncon  
Chairman

8 November, 1994

Clarence Pautzke  
Executive Director  
North Pacific Fishery Management Council  
P.O. Box 103136  
Anchorage, AK 99510

Re: Comments on Groundfish Closures to Protect Red King Crab  
NPFMC Teleconference November 14, 1994

Dear Clarence,

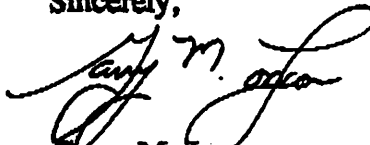
The Pacific Northwest Crab Industry Advisory Committee would like to submit the following written comments with respect to above referenced meeting:

With respect to red king crab bycatch, PNCIAC supports action with the express purpose of protecting the population of red king crab and minimizing bycatch including but not limited to time and area closures east of 163° and south of 58° and in additional statistical areas where red king crab aggregate.

Also, PNCIAC endorses 100% observer coverage for the flatfish fisheries as well as daily bycatch reporting.

It is the consensus of the members of PNCIAC that these measures will help in the rebuilding of the red king crab stocks.

Sincerely,



Garry M. Loncon  
Chairman