


MEMORANDUM

TO: Council, AP and SSC Members

FROM: Clarence G. Pautzke 
Executive Director

DATE: November 29, 1989

SUBJECT: General Groundfish

ACTION REQUIRED

- (a) Approve revised pollock roe-stripping amendment (Amendment 19/14) for public review.
- (b) Consider emergency action on pollock roe-stripping for 1990.
- (c) Provide guidance to the Regional Director on in-season management of pollock.

BACKGROUND

(a) In June, the Council approved the draft Amendment 19/14 Environmental Assessment/Regulatory Impact Review for public review. At the September meeting, the Council received reports from the SSC and the AP, and a memo from the Plan Teams, that the document did not demonstrate any alternative as being preferable to the status quo. The Council was also advised by NOAA General Counsel that the Magnuson Act confers authority on the Council to regulate fishing (catching, taking or harvesting fish), but does not confer authority to directly regulate processing. Following considerable discussion, the Council provided guidance to staff, NOAA-Fisheries, and NOAA General Counsel to revise the analysis and present the modified documents to the Council in December.

The revised EA/RIR was air-expressed to the Council family on November 29. Specifically, the EA/RIR has been modified to incorporate additional biological and economic information, and to provide for seasonal (quarterly) apportionments. Cost and operating information was provided by pollock processors active in the Gulf of Alaska and the Bering Sea in 1989. A summary of the alternatives and their analyses is provided as D-4(a-b-c)(1). Advice from NOAA General Counsel will be provided at meeting time.

The Council needs to decide at this meeting whether to send the revised EA/RIR out for public review and comment. If the Council approves the document without substantial revisions, this could be done in time for public comment to be collected prior to the January 1990 meeting. The Council could then take final action at that time.

(b) The Council also may choose to take emergency action to regulate the 1990 winter-spring pollock fishery. If approved, such action would be in place for 90 days, with the possibility of a single 90-day extension.

(c) Finally, the Council needs to provide guidance to the Regional Director on inseason management of pollock for 1990. In September the Council provided policy guidance to the Regional Director to apportion pollock in all areas of the Gulf of Alaska equally by quarter with a provision for rollover to subsequent quarters within the fishing year. The Council indicated there may be a need to change the TAC inseason after resource surveys are completed. They also wanted to ensure that pollock bycatch needs in other fisheries were accounted for in managing the quota for the directed pollock fishery.

SUMMARY OF ALTERNATIVES

Amendments 19/14 to the Groundfish Fishery Management Plans of the Gulf of Alaska and Bering Sea/Aleutian Islands

Alternative 1: Do nothing - status quo.

Under the status quo roe-stripping and subsequent discard of carcasses is not prohibited.

Alternative 2: Prohibit roe-stripping in the pollock fisheries in the Gulf of Alaska and the Bering Sea/Aleutian Islands or portions thereof.

This alternative would prohibit processors from discarding males and stripped female carcasses after extracting only roe. Such a prohibition would require that the flesh be further processed into additional products such as fillets, headed/gutted, surimi and/or meal. The Council may choose this alternative and specify which "next step" processes are acceptable. The Council may also choose to apply a prohibition on roe-stripping to only portions of the Gulf of Alaska and Bering Sea/Aleutian Islands management areas.

Alternative 3: Require full utilization of pollock in the pollock fisheries in the Gulf of Alaska and Bering Sea/Aleutian Islands or portions thereof.

This alternative differs from Alternative 2 in that "full utilization" is required. Given current processing practice and technology, adoption of this alternative implies reduction to meal and/or oil as a final processing step. At-sea processors would therefore be required to install and use on-board meal reduction plants and shorebased processors would be required to install and utilize meal plants. Alternatively, processors could transfer processing waste to a meal processing facility, either at-sea or shorebased.

Alternative 4: Establish a seasonal apportionment schedule for pollock in the Gulf of Alaska and Bering Sea/Aleutian Islands or portions thereof.

Under this alternative, annual apportionments to DAP and JVP fisheries would be divided into seasonal harvest amounts. The Council would have the option of setting these sub-annual limits equally, in proportion to historic catch levels, or in some other proportion.

Alternative 5: Prohibit pollock roe-stripping and establish a seasonal apportionment schedule for pollock in the Gulf of Alaska and Bering Sea/Aleutian Islands or portions thereof.

This alternative is a combination of Alternatives 2 and 4; that is, in the Gulf of Alaska and Bering Sea/Aleutian Islands pollock fisheries, roe-stripping would not be allowed and a seasonal apportionment schedule would be used.

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**SUMMARY OF EA/RIR/IRFA FOR AMENDMENTS 19 AND 14
TO THE
FISHERY MANAGEMENT PLANS FOR THE GROUND FISH FISHERIES
OF THE GULF OF ALASKA
AND THE BERING SEA/ALEUTIAN ISLANDS**

POLLOCK UTILIZATION IN THE GROUND FISH FISHERIES OFF ALASKA

The North Pacific Fishery Management Council, at its April 1989 meeting, requested that its groundfish plan teams prepare an amendment addressing the issue of extraction of roe from prespawning pollock without further processing (roe-stripping). The Council reviewed the initial analysis in June and suggested that a draft amendment package, including a draft environmental assessment/regulatory impact review/initial regulatory flexibility analysis (EA/RIR/IRFA), be released for public comment. In September the Council reviewed the public comment and, because of legal and procedural questions, directed the plan teams to amend the analysis and bring it back before the Council in December. At that time the Council could release the revised document for further public review and could take final action on this amendment at its January 1990 meeting. Should the preferred alternative be other than the status quo, the package would be forwarded to the Secretary of Commerce for approval and implementation. Since the amendments, if approved, would not go into effect until June or July 1990, a prohibition on pollock roe-stripping or any other regulatory change associated with the early year fishery for pollock would not take practical effect until 1991 unless emergency action is taken by the Council in December, 1989.

Currently there are no restrictions on the type of processing that occurs in the Gulf of Alaska and Bering Sea/Aleutian Islands groundfish fisheries. In winter and early spring (January - April), portions of the trawl fleet target on prespawning aggregations of pollock populations. Female pollock taken at this time contain eggs or roe, a valuable product. Although some processors do not utilize the roe, most do. Some processors (at-sea and shoreside) extract the roe from the females, and may further process the resultant carcass (and the males) into fillets, surimi, or fish meal. Other processors extract only roe, discarding the female carcasses and males. This practice is called roe-stripping. Extraction of only the roe results in a lower physical yield (recovery rate) than other processing techniques such as filleting or surimi production, but is economically attractive because the roe product is very valuable and some operators can process more tons of pollock per day by foregoing further processing.

This document examines current pollock management in the Gulf of Alaska and Bering Sea and Aleutian Islands with respect to the issue of pollock roe-stripping. Four potential management problems associated with the practice are:

1. Roe-stripping may be a wasteful practice.
2. Roe-stripping may adversely affect the ecosystem as a result of additional discard.
3. Targeting on spawning populations may adversely affect the productivity of the pollock stocks.

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4. Roe-stripping may result in an inappropriate allocation of the pollock TAC among seasons and the type of processing (at-sea and shorebased).

Management alternatives considered in this analysis are:

1. Do nothing. Maintain the status quo.
2. Prohibit roe-stripping in the pollock fisheries¹ in the Gulf of Alaska and Bering Sea or portions thereof.
3. Require full utilization in the pollock fisheries in the Gulf of Alaska and Bering Sea or portions thereof.
4. Establish a seasonal apportionment schedule for pollock in the Gulf of Alaska and Bering Sea or portions thereof.
5. Prohibit pollock roe-stripping and establish a seasonal apportionment schedule in the Gulf of Alaska and Bering Sea or portions thereof (a combination of Alternatives 2 and 4).

The analysis contained herein may be summarized with respect to the four identified management problems. With respect to the discard issue (problems 1 and 2), Alternatives 2, 3 and 5 directly reduce or eliminate the amount of discard associated with pollock through regulatory controls on the type of processing that may occur. The amount of processing discard under Alternative 4 may be less than under the status quo depending on the seasonal dates and apportionments chosen. The potential changes in the quantity, geographical location and timing of waste discharge are likely to be undetectable against the background of general processing waste discharge and the ability of the ecosystem to recycle organic material.

With respect to the pollock productivity issue (problem 3), Alternatives 4 and 5 will affect the timing of the pollock harvest directly and Alternatives 2 and 3, indirectly. The biological impacts are dependent on the form of the spawner-recruit relationship, the current stock status, and density independent factors. Appendices I-III provide examples of conditions under which roe-stripping can effect changes in the spawning stock, but these examples are simplified and do not necessarily represent current stock dynamics. Current understanding of pollock stock dynamics does not permit clear-cut conclusions about the biological impacts of roe-stripping.

With respect to the issue of inappropriate allocation of pollock among seasons and processors (problem 4), preliminary information provided by processors who processed pollock in 1989, indicates that, under the market and fishery conditions that existed, roe-stripping was a relatively high valued use of pollock. Results also indicate that transferring catch from the roe season fishery to a later in the year fishery can adversely affect the profitability of the pollock fishery.

1. The Council may either define "pollock fisheries" to include only directed pollock fisheries or may include all fisheries that take pollock. The implications of the two different definitions are discussed in the analytical sections of this document.

Shifting the fishery to later in the year could increase the amount of halibut and crab taken as bycatch, relative to the status quo, if the fall fishery were prosecuted primarily with bottom trawls fished hard on bottom rather than with midwater trawls which tend to have much lower bycatch rates for crab and halibut. If the PSC limits for crab and halibut constrain the fall pollock fishery, then such a shift could result in foregone pollock catches. If PSC limits are not constraining, a shift to a late in the year fishery with higher bycatch rates for crab and halibut will increase the bycatch of crab and halibut. Alternatively, the Council may require that a fall fishery for pollock be prosecuted only with midwater trawls. Shifting the harvest to later in the year may also temporarily redistribute income from at-sea processors to shoreside processors in the Gulf of Alaska, particularly those located close to the fishing grounds, but this effect will likely be short-lived as domestic processors expand their demand for pollock.

Some of these results may change once industry data are more thoroughly analyzed, ambiguous responses are eliminated by further contact with the respondents, and additional responses are received.

Enforcement of a prohibition on roe-stripping, as defined by Alternative 2 or 5, will be difficult. Regulations would require some amount of pollock product other than roe to be onboard should an enforcement agent wish to inspect a vessel carrying pollock roe. Depending on enforcement policy and practice, the latitude given vessel captains and plant foremen may render enforcement either ineffective or prohibitively expensive.

Enforcement of a requirement to have meal plants onboard at-sea processing vessels will not be difficult. Verifying that all processing by-product is reduced to meal, however, may be extremely difficult, particularly in the absence of 100% observer coverage. Likewise, determining that all shorebased waste product is going to the local meal plant may prove troublesome. Enforcement of a requirement to deliver processing waste to other at-sea processors or to shorebased processors will be geared to the effectiveness of the Council's observer program and domestic logbook program.

It is difficult to identify both the intent of a ban on roe-stripping and the regulations that would assure that the intent is met. It is clear that the intent includes a ban on operations that only intend to extract roe. It is not clear that the intent is to prevent operations from occasionally discarding pollock when equipment failure or exceptional catch rates preclude that operation's normal utilization of its catch. Neither is the intent clear with respect to what other products and what quantities of those products define acceptable utilization behavior. As suggested in the analysis of Alternative 3, depending upon the particular options selected by the Council to deal with issues of "surplus" or "unmarketable" product, enforcement of a full utilization regulation may be extremely complex and costly.

A more detailed summary of the analysis by Alternative suggests the following:

Alternative 2: Ban pollock roe-stripping

Environmental Impacts

In the Bering Sea, pollock harvest would be spread more uniformly over the year, at least initially, until the fishing capacity of vessels that utilized more than just roe increased and compensated for

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the initial reduction caused by roe-only boats leaving the roe season fishery. In the Gulf of Alaska, given current catch and production capacity and stock abundance, there will likely be no discernible shift in the timing of the harvest. In effect, there is sufficient harvesting and processing capacity to take the entire quota early in the fishing year, irrespective of regulations on roe-stripping.

Crab and halibut bycatch could increase if fishing effort displaced from the relatively low bycatch, roe fishery transferred that effort to a fall, on-bottom fishery. This would be mitigated in the long term as capacity to utilize more than roe increased and once again enabled the fleet to fully prosecute the stocks in a spring, midwater fishery.

A prohibition on stripping would reduce pollock discards by about 4,600 mt. The reduction in discard would be a savings in pollock flesh but would be small in comparison to the overall level of discard from the groundfish fisheries under "normal" processing.

Discarded groundfish wastes may cause some local souring of the grounds, but the significance of this impact is unknown. Roe-stripping waste itself is very small in comparison to the overall quantities discarded by the seafood industry, both from shoreside and offshore operations.

Economic Impacts

The increased product generated by requiring processing past extraction of roe would add to gross fleet revenue, however, information provided by industry on the costs and revenues associated with various types of processing, indicate that for some components of the fleet, net revenue or profits, would be expected to decline. Vessels not equipped to process pollock beyond roe extraction (H&G) numbered nine in the Gulf of Alaska and 16 in the Bering Sea in 1989. These vessels would be eliminated from the pollock fishery with an estimated loss in gross revenue of about \$18 million. Processors other than H&G vessels who stripped roe in 1989 would have lost an additional \$18 million in gross revenue if they had not produced roe. The latter losses would be offset to some unknown extent by income generated by production of additional product forms. Additional costs would be imposed on vessels to upgrade their processing capacity for more than roe-extraction. This could impact more heavily smaller vessels that do not have as much room for expanded machinery.

With the comparatively high value of roe over other product forms, it may make economic sense for vessels to roe-strip during the relatively short period of roe-availability.

Banning roe-stripping would reduce, at least temporarily, the pace of the fishery which would help to alleviate the shortage of pollock available to stationary processors outside the roe season. This could be a short term result nullified by additional capacity, capable of fuller utilization, entering the roe fishery. Because the pollock TAC in the Gulf of Alaska is so small and the capacity of processors that can process more than roe is so large, banning roe stripping would probably not have guaranteed the opportunity for directed fisheries on pollock after the roe season.

Alternative 3: Require full utilization of pollock.

Environmental Impacts

Current groundfish processing results in approximately 60% discard waste from the whole landed product, equivalent to a discard of 1.3 million mt in the current fishery. Discard from the pollock fishery alone, where processing includes fillet and surimi production, approaches 1 million mt. Implementation of the full utilization alternative in 1989 would have reduced pollock solid waste discard in the Bering Sea by 0.5% to 3% and by 6% to 38% in the Gulf of Alaska. Overall discard reduction would range from 0.4% to 2.4% in the BSAI and from 2.2% to 13.2% in the Gulf of Alaska.

Seafood waste may cause local souring of grounds if not adequately dispersed by currents. The habitat may be improved by reducing the discard of seafood waste. The incremental improvement caused by full utilization of pollock, considering that most of it is processed at sea over a wide area with heavy currents, may be nominal.

Seafood waste provides food for many marine organisms if dispersed in moderate quantities and may actually enhance the environment in that manner. The enhancement is difficult to quantify.

Requiring full utilization would eliminate more of the present fleet than just a ban on roe-stripping, at least until the capacity for full utilization compensates for the initial reduction. The concomitant increase in fishing effort at other times of the year and in on-bottom fisheries could impact the bycatch of crab and halibut.

Economic Impacts

Requiring full utilization will impose costs on the processing industry to retool for fuller utilization as it is eventually defined by the Council. Additional onboard and shorebased reduction capacity will be necessary. Capital costs of such expansion are about \$1 million per 100 mt/day capacity. An average at-sea reduction plant would cost approximately \$1.5 million and an average shoreside plant \$8 million.

Requiring reduction to fish meal would double the world supply of whitefish meal and could cause price reductions, driving meal revenues below production costs. Storage costs could increase if the additional meal could not be sold.

Enforcement difficulties would be compounded by a need to determine the intent of the processor when processing pollock.

Alternative 4: Seasonal apportionment

Environmental Impacts

The biological impacts of seasonal apportionments are indefinite and cannot be quantified precisely. Quantification of potential changes in egg or larval production and net yield await a more detailed understanding of seasonal variations in the life history of each age class.

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Spreading the fishery over a full calendar year would enhance data collection and subsequent understanding of seasonal changes in pollock distribution and life history.

To the extent that the fishery is shifted to a later year fishery using trawls fished hard on bottom, bycatch of halibut and crab could increase.

Economic Impacts

Semi-annual or quarterly allocations would have reduced the amount of pollock taken in the 1989 Gulf of Alaska pollock roe fishery but would have had little impact on the Bering Sea fishery.

Quarterly apportionments of pollock in 1989 would have caused a reallocation of catch from the GOA to the BSAI. The share of the GOA catch going to shoreside processors would have increased.

Effort would be expected to shift to other fisheries as seasonal pollock closures occur. This could lead to a shortening of seasons in other target fisheries.

If increased bycatch rates lead to closure of the pollock target fishery before attainment of the TAC, gross exvessel revenue will be foregone. If the seasons are adjusted to eliminate the roe fishery gross exvessel revenue would be reduced by at least \$40 million. Additionally, profitability in the fleet would be reduced.

Alternative 5: Prohibition on roe-stripping and seasonal apportionment

The environmental and economic impacts associated with adoption of this alternative are approximately the same as those described under Alternatives 2 and 4.

It should be recognized that even without this amendment the Council may be able to control the amount of harvest effort on prespawm pollock by regulatory amendment; this course of action could be taken by the Secretary of the Commerce under the fishing season framework adopted under Amendments 18 and 13 to the Gulf of Alaska and Bering Sea FMPs. In this case, the Council could change the pollock fishing season so that it commences on, say, May 1, effectively eliminating a roe-only fishery.

ASSISTANT GENERAL COUNCIL FOR FISHERIES

Craig R. O'Connor
Alaska Regional Attorney

SUBJECT: Limitations on Roe Stripping

BACKGROUND

Practices that could be labeled "wasteful" occur in many, perhaps in most, marine fisheries. Some of these practices are dictated by the economics of the fishery, such as the discard of unmarketable fish in trawl fisheries. Others are mandated by regulators for management and enforcement reasons, such as the discard of undersized fish or "prohibited species."

Recent events in the groundfish trawl fisheries in the Gulf of Alaska and Bering Sea stimulated discussion by the North Pacific Council of measures that would ban or restrict one "wasteful" practice, that of roe stripping in the pollock fisheries. These fisheries are currently managed through annual quotas with no seasonal breakdowns; trawling proceeds until the quotas are reached. The Fishery Management Plans for Groundfish of the Gulf of Alaska and for Groundfish of the Bering Sea and Aleutian Islands (FMPs) identify no biological problem with allowing all or most of the harvest to occur in the first few months of the year, during the spawning season.

Because pollock roe has a commercial value many times that of any product produced from the flesh of the fish, some at-sea processors have opted to increase the amount of roe they can handle and store by "stripping" roe from female fish while discarding male pollock and female carcasses. The North Pacific Council at its September meeting postponed action on a roe-stripping amendment, but stated clearly its intent to prohibit the practice and to promote fuller utilization of the pollock resource. The Executive Director of the Council requested an opinion on the legal parameters of the issue before the December 5 Council meeting.



SUMMARY

(1) There is authority under the Magnuson Fishery Conservation and Management Act to limit wasteful practices. Controlling wasteful practices is as legitimate a purpose as conserving a stock of fish or allocating fishing privileges. Requiring fuller utilization of a fishery resource should be justified as a means of achieving optimum yield.

(2) There are a multitude of conservation and management measures, directed at harvesting activities, available to eliminate or restrict practices such as roe stripping. These include seasons, quotas, gear requirements, discard restrictions, and catch limits.

(3) There is also authority under the Act to limit wasteful practices by requiring at-sea processors to retain harvested fish rather than discarding them. At-sea processing is "fishing" subject to regulation under the Act.

(4) There is authority -- though not as clear-cut -- to limit wasteful practices by requiring at-sea processors to utilize fish flesh for food products and fish meal. There have been no instances thus far of directly mandating what a processor does with legally possessed fish for purposes of full utilization.

(5) There is no authority to limit wasteful practices by regulating on-shore processors, because on-shore processors can be regulated only indirectly as an incidence of managing "fishing."

CAVEAT

This memorandum does not address the adequacy of any record developed by any Council to support any of the management measures discussed. The analysis is completely theoretical; Secretarial approval and legal defense of any measure affecting roe stripping or other fish processing practices would depend on the existence of a record justifying the measure and demonstrating the net benefits to be derived from its implementation.

DISCUSSION

We will first explore the purposes cognizable under the Magnuson Act for restricting roe stripping and other wasteful practices, and then examine the means authorized by the Act to accomplish such restrictions.

1. Acceptable Purposes

A. Biology

It goes without saying that biological reasons for limiting or banning roe stripping would be valid; they would implement the paramount purpose of the Magnuson Act, to conserve a stock of fish. The first and fourth purposes of the Act, 16 U.S.C. 1801(b)(1) and (4), are to conserve and manage the fishery resources of the United States and to achieve and maintain, on a continuing basis, the optimum yield from each fishery. National standard 1, 16 U.S.C. 1851(a)(1), reiterates the requirement of achieving optimum yield. Fishery management plans (FMPs) must contain measures necessary and appropriate for the conservation and management of the fishery, 16 U.S.C. 1853(a); the definition of "conservation and management", 16 U.S.C. 1802(2), emphasizes the rebuilding, restoration, and maintenance of fishery resources.

If it can be established that harvesting before or during spawning season adversely affects recruitment by breaking up schools of fish before spawning occurs, or by concentrating harvest of the quota on pre-spawning fish, a Council would have adequate rationale to adopt restrictions on the practice.

B. Economic and Ecological

Likewise, allocation of fishing privileges is a traditional purpose of management measures under the Act. Some of the concern over roe stripping stems from fishermen and shore-based processors whose opportunity to participate in the pollock fishery was curtailed by the rapid harvest of the quota by factory-trawlers early in the year. The need to deal with increasing demand for a shrinking public resource was recognized in the Act as one of the Councils' tasks. This is recognized in national standard 4, 16 U.S.C. 1851(a)(4), which addresses the allocation of fishing privileges, and in the section listing discretionary provisions of FMPs, 16 U.S.C. 1853(b), which includes limits on types of fishing vessels and gear, quotas and catch limits, and systems of limiting access to a fishery.

If it can be established that the net benefits to the Nation would be increased by allocating the opportunity to harvest pollock among the various participants, or by distributing the effort on the annual quota more evenly, a Council would have adequate rationale to adopt measures that would affect roe stripping. A particularly analogous FMP is the Mid-Atlantic Council's surf clam plan, which uses quarterly quotas, controlled hours of fishing, and a moratorium on entry to provide a steady stream of clams to processors throughout the year. Socioeconomic factors such as dependence on employment in

processing plants could also enter into the equation.¹ Of course, any allocation would have to meet the criteria of national standards 4 and 5, 16 U.S.C. 1851(a)(4) and (5), for fairness and equity and promotion of conservation.

Another economic/ecological reason for banning discards is that decaying fish might "sour" a particular fishing ground. In 1982 the National Marine Fisheries Service added a condition to the permits of foreign vessels in the Pacific whiting fishery, prohibiting discards of fish and offal (except prohibited species) within 12 miles of shore. Domestic fishermen in Humboldt Bay were complaining not only about the ecological consequences of dumping, but about the time consumed in the nasty job of cleaning refuse from their trawls. The permit condition is still in place.

C. Full Utilization

Because the record developed by NMFS and Council staff before the September meeting of the North Pacific Council apparently did not adequately establish biological, ecological, or economic reasons for roe stripping restrictions,² the debate turned to limiting the practice for reasons of "full[er] utilization" or prevention of "wastage."³ The transcript shows some unease among Council members with this purpose. As mentioned above, wasteful practices are tolerated or mandated in many fisheries under Magnuson Act regulation. Avoidance of waste has not been a commonly expressed purpose for FMP measures. Defining what is

¹ Pot gear was phased out of the Gulf of Alaska sablefish fishery beginning in 1986 by Amendment 14 to the Groundfish FMP. One justification was the dependence on the fishery of hook and line fishermen and the shore-based processors to whom they delivered. 50 FR 43193, 43196 (Oct. 24, 1985).

² Statement of Steve Pennoyer, NMFS Alaska Regional Director, at page 3 of transcript of North Pacific Council discussion of Agenda D-3(a), September 28, 1989.

³ One proponent argued, "...I think there's probably a third issue here and that would be a moral issue. Last year during the time this took place the whole industry was in headlines day after day about the thousands of pounds of usable fish that were discarded and thus removed from access to the rest of the public. Fish that any other time of year would have been usable, marketable, and desirable fish but because of seeking only the high valued roe, they were removed from accessibility and there must be some consideration for this and the wisest use of a product." Statement of Council member Ron Hegge at page 17 of transcript of North Pacific Council discussion of Agenda D-3(a), September 29, 1989.

"waste" and what is the unavoidable incidence of rational economic decisions by the fishing industry is a gnarly question.

The Magnuson Act, however, does suggest that prevention of waste is a legitimate goal for fishery management measures. The role of our fishery resources in contributing to the world's food supply is specifically mentioned twice in the "findings" section, 16 U.S.C. 1801(a)(1) and (7), once in general terms and later in terms of developing a fishery for underutilized species. The interests of consumer groups in participating in the Council process are recognized in the "purposes" section, 16 U.S.C. 1801(b)(5). The policy expressed in 16 U.S.C. 1801(c)(3) of promoting efficiency has been interpreted to encompass measures that discourage waste.⁴

The central concept of fishery management under the Act, "optimum yield" (OY), emphasizes food production in considering what amount of fish will provide the greatest overall benefit to the Nation, 16 U.S.C. 1802(13). The national standard guidelines say food production encompasses "the goals of providing seafood to consumers, maintaining an economically viable fishery, and utilizing the capacity of U.S. fishery resources to meet nutritional needs." 50 C.F.R. 602.11(f)(2)(i). Social factors that may be considered in setting OY include "world-wide nutritional needs." 50 C.F.R. 602.11(f)(3)(ii).

The required provisions of FMPs include specification of OY and the conservation and management measures "necessary and appropriate" for achieving OY, 16 U.S.C. 1853(a)(1) and (3). This is the case because all conservation and management measures must be consistent with the national standards, which include the requirement to achieve optimum yield on a continuing basis, 16 U.S.C. 1851(a)(1).

The only textual argument against measures with waste avoidance as their purpose is that FMPs are to contain measures necessary and appropriate for the "conservation and management" of the fishery, but the term "conservation and management" is defined very narrowly in 16 U.S.C. 1802(2):

The term "conservation and management" refers to all of the rules, regulations, conditions, methods, and other measures (A) which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment; and (B) which are designed to assure that--
(i) a supply of food and other products may be taken, and that recreational benefits may be obtained, on a continuing basis;

⁴ General Counsel Opinion No. 80 (1979).

- (ii) irreversible or long-term adverse effects on fishery resources and the marine environment are avoided; and
- (iii) there will be a multiplicity of options available with respect to future uses of these resources.⁵

Even if one follows the definitional chain from "fishery resources" to "fishery" to "fishing" to broaden the object affected by the described measures, the verbs "rebuild, restore, or maintain" indicate that the first meaning of "fishery" ("(A) one or more stocks of fish...") is the one intended. The purposes for which these measures are to be designed under (B) of the definition all speak to preservation of fishery resources. Therefore the definition of "conservation and management" seems -- at first reading -- limited to measures with biological purposes, those directed at protecting the natural resource.

The definition of "conservation and management" has a peculiar legislative history. It began, almost word for word, as a definition of "conservation" in section 3 of S.961. (The Commerce Committee Report described "conservation" as "interchangeable with the term 'management.'" This definition serves to outline several of the goals of the national fishery management program.") There was no direct connection between the term "conservation" and the contents of fishery management plans under section 203(a) of that bill, which directed each Council to submit "recommended management regulations," except for the basket clause in the discretionary provisions section (203(b)(7) of the bill). A Legislative History of the Fishery Conservation and Management Act of 1976 at 674, 701, 711-12 (1976). The final legislation required FMPs to contain "conservation and management measures" and revised the definition of "conservation and management" in an apparent

⁵ This is one of the provisions that was narrowly interpreted in General Counsel Opinion No. 61 (1978), which concluded that the Act did not authorize the Secretary to deny applications for joint-venture permits on the basis that U.S. processors could process the fish. This ruling resulted in the processor-preference amendment, P.L. 95-354. The implication of Opinion No. 61, that "conservation and management" does not encompass consideration of the economic interests of on-shore processors, is inconsistent with Opinion No. 80 and subsequent practice of the agency (see discussion on page 7).

attempt at conformity.⁶

Not since 1978 has the definition of "conservation and management" stood in the way of Secretarial action under the Magnuson Act (see footnote 5). In fact, the definition was broadly construed in General Counsel Opinion No. 80 (1979), which addressed public health and safety measures, to allow any purpose that can be inferred from the Act as the basis for an FMP provision. Strict application of a narrow interpretation of the term would eliminate probably half the FMP measures currently in place. Regulations allocating fishing privileges, setting minimum size limits for the convenience of processors, spreading effort over an entire season, separating mobile from fixed gear, allowing experimental fishing contrary to conservation regimes, permitting the harvest of "prohibited species," forbidding one fisherman from pulling another's traps -- all these and other measures would be suspect as conservation-neutral or even as counter to conservation purposes.

We believe a strict reading of the definition of "conservation and management" is inconsistent with the Act's many expressions of permissible economic and social goals. Optimum yield cannot be achieved if FMPs can address only the restoration or maintenance of stocks of fish. Many purposes of the Act cannot be fulfilled if the Councils and the Secretary are so limited.

⁶ Another peculiarity about the definition is that it includes measures to "restore...the marine environment," while section 303 restricts conservation and management measures to those "applicable to foreign fishing and fishing by vessels of the United States." The legislative history is clear that threats to the marine environment such as oil spills and navigation could not be regulated under the Act. Councils wishing to control activities harmful to the marine environment and citing the definition of "conservation and management" as authority have been told that Congress gave them no tools to affect activities other than "fishing." Memorandum by Joel MacDonald, August 7, 1979, "Council Authority to Prescribe Conservation and Management Measures Respecting the Marine Environment and Fishery Habitats." Even an activity that literally comes within the definition of "fishing" (anchoring on coral, by which a fishery resource might be "taken") has been excluded from coverage by the Act. Memorandum by Gaylin Sponis (1982?), "Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic." A prohibition in the FMP against anchoring by vessels over a certain length in "habitat areas of particular concern" was disapproved because it would have regulated navigation of vessels not even remotely connected with the fishing industry.

Several examples can be cited of management measures that have waste avoidance as at least one of their purposes:

- o The purpose of the Texas closure in the Gulf of Mexico Shrimp FMP was described by a federal district court as "to protect shrimp until they reach a more valuable size and thereby eliminate the wasteful practice of discarding undersized brown shrimp." Louisiana v. Baldrige (sic), 538 F.Supp. 625, 627 (E.D.La. 1982). The court upheld this management measure.
- o The Red Drum FMP identified wastage as a problem, citing instances where purse seines overloaded with red drum were held until transfer vessels arrived. If the fish were held too long, they were released intentionally. In at least one case the fish were lost during the transfer due to a torn net. The regulations banned at-sea transfers and added an admonishment (now at 50 C.F.R. 653.22(b)): "A person or vessel must conduct fishing operations in a way that minimizes wastage of red drum."
- o The New England Groundfish FMP, for a few months, contained a no-discard rule to prevent the waste of valuable protein. 44 FR 885, 889 (January 3, 1979).⁷

⁷ The provision was rescinded by Amendment 5, with the following explanation:

The early stages of groundfish management under the FCMA brought the imposition of low trip limit levels for all the regulated species. Fishing under this restrictive system led to the practice of vessels discarding groundfish in order that they might bring in the largest and most highly valued permitted catch possible. For example, if a vessel had caught all of its trip allocation of codfish but not haddock, any additional codfish caught on subsequent tows might be discarded until the haddock limit was filled out.

The Council attempted to regulate a solution to this problem prohibiting discarding at sea, and establishing weekly trip limits in mid-1978. The intent at this time was to create the incentive to conduct as clean and species specific a fishing operation as possible, and thereby eliminate needless wastage of groundfish. It was envisioned that if wastage could be minimized, the OYs could be increased accordingly. However, experience has shown that generally this is not possible. The common habitat preferences of codfish, haddock, and

- o The Tanner crab FMP, no longer in effect, tailored seasons to avoid harvest of molting crabs, which suffered high mortality rates during transport to on-shore processors. The season could be shortened if molting began sooner than anticipated. 44 FR 30688.
- o The Secretarial Shark FMP, now being developed, would require landing of the entire shark to eliminate the wasteful practice of "finning."

We conclude that the Act most certainly allows the Councils to adopt, and the Secretary to approve, management measures aimed at avoidance of waste or promotion of fuller utilization of fish. The most defensible approach would be amending the definition of optimum yield, to add an overlay of full utilization to the numbers set for biological and economic reasons.

2. Acceptable Management Measures

A. Quotas

Establishing waste avoidance as a legitimate purpose for an FMP measure is only the beginning. What means may a Council employ to accomplish such a purpose? The North Pacific Council discussed a number of traditional measures, of the sort enumerated in 16 U.S.C. 1853(b), that are undoubtedly available.⁸ One approach would set semi-annual or quarterly quotas to limit the amount of pollock that could be taken during the spawning season.⁹ Cf. 1853(b)(3). While such quotas would distribute fishing opportunity over the year, they would probably not eliminate roe stripping entirely; the rush to harvest the

yellowtail, the restrictive management system imposed under the FCMA, and undoubtedly, the escalating vessel operating costs all have defeated the "no-discard" concept. Therefore, in recognition of this disparity between the intent of the no-discard regulation and the factors that determine the way in which the fishery operates, FMP refinement is necessary.

⁸ For each of these suggestions, the Regional Attorney verified their acceptability under the Act. Pages 15-17, 21 of transcript of North Pacific Council discussion of Agenda D-3(a), September 28-29, 1989.

⁹ The Council in fact recommended that the Regional Director allocate pollock in the Gulf of Alaska on a quarterly basis in 1990.

allowable periodic quota would still operate during the first quarter or half-year.

B. Seasons

Another option would simply ban a directed pollock fishery during the spawning season. Cf. 1853(b)(2). While biological or waste-avoidance concerns might argue for a ban, the economic loss of the profitable roe fishery might be difficult to justify. Indeed, timing the fishery to avoid the roe season might itself be considered wasteful, since the value of each female fish harvested is appreciably less without the roe.

C. Catch limits, etc.

One measure the Council did not discuss, but certainly could consider, would be a per-vessel limit on pollock harvest. Cf. 1853(b)(3). A daily or weekly limit would slow down the harvest, even during spawning season, so that a catcher/processor would have no economic incentive to discard usable flesh. Other undiscussed possibilities include limiting the number of vessels in the fishery (cf. 1853(b)(6)); requiring operable fish-meal equipment to be installed on processing vessels, or prohibiting the use of mechanical roe extractors (cf. 1853(b)(4)); and forbidding processing vessels from operating in the fishery (cf. 1853(b)(4)).

D. Limits on use of fish

One Council member suggested prohibiting the discard of male fish and roe-stripped females. Several amendments to the motion were offered, specifying that in a directed pollock fishery undersized fish, heads, frames, guts, and "unmarketable flesh, based on industry-wide marketability" could be discarded. Applying a no-discard rule to harvesters raises no legal problems of authority under the Act and has precedents in the New England Groundfish FMP¹⁰ and the yet-to-be-adopted Secretarial Shark FMP.¹¹ (As another Council member noted, such

¹⁰ The regulations made it unlawful for "any person" to "discard, at sea" any groundfish. The definition of "discard" required the retention of any live fish once on board a vessel, or any dead fish that had been caught. Because there was no at-sea processing in the fishery, the regulations in effect imposed a landing requirement on harvesters, but had no application to processors.

¹¹ The October 20, 1989, draft of the FMP, besides setting commercial quotas and recreational bag limits, requires the landing of carcasses in proportion to the number of fins retained. The discussion of finning focuses on the waste issue,

a rule might present enforcement problems and raise difficult issues as to what constitutes "unmarketable flesh.")

The Regional Attorney proposed a variation on this motion, a ban on harvesting fish that would be used for roe stripping. An analogy for this approach is found in the Northern Anchovy FMP, which created a "formula OY" dependent on size of the spawning biomass. It gives highest priority to the importance of anchovy as forage for marine birds and other fish, and to the live bait fishery, for which no quota is set. The middle priority is for the nonreduction fishery (for dead bait or human consumption), which has a small quota no matter what the biomass size. Lowest priority is the reduction fishery ("fishing for northern anchovies for the purposes of conversion to fish flour, fish meal, fish scrap, fertilizer, fish oil, or other fishery products or byproducts for purposes other than direct human consumption"). Only if the biomass is above a certain level is the reduction fishery allowed. See 50 C.F.R. 662.20.

Back in 1978, when the Northern Anchovy FMP was approved, there was no discussion of the authority to regulate the purposes for which fishing was allowed. (Attention was focused on the novelty of a "formula OY.") The regulations authorize a type of purse seine for use only in the reduction fishery, but contain no direct prohibition on fishing for reduction purposes during a closure of the reduction fishery. Perhaps the practical explanation for this omission is that no one fishing with other gear would harvest amounts useful in a reduction operation. It would nonetheless be a violation of the Magnuson Act for someone to buy or possess for "purposes of conversion" anchovies harvested without a reduction quota in effect. 16 U.S.C. 1857(1)(G)).

Some North Pacific Council members were apparently uncomfortable with restricting fishing "for the purpose of" roe stripping, because the fisherman delivering pollock to a processor would be responsible for a practice over which he had no control. (This would not be a problem, of course, with a catcher/processor.) The Council seemed more interested in the question whether a no-discard rule or a flesh-utilization requirement could be applied

although there might be some unstated conservation benefits from the ban (by slowing the harvest by requiring landing or by identifying the species killed from the carcass). The impacts analysis discusses possible economic loss to the fishermen, but projects social benefits from elimination of waste. Again, there is no at-sea processing in the shark fishery. The draft FMP does not specify what may be done with landed carcasses; presumably, they may be discarded.

directly to processors.¹²

FMPs may contain only conservation and management measures "applicable to foreign fishing and fishing by vessels of the United States." 16 U.S.C. 1853(a)(1). "Fishing" is defined at 1802(10)(D) as "any operations at sea in support of, or in preparation for" the harvesting of fish. While the definition of "fishing vessel" at 1801(11)(B) specifically includes "processing" as "any activity relating to fishing," a narrow focus on the "fishing" definition raises an issue of whether at-sea processing is "in support of" the harvesting of fish. If it is not, arguably the Magnuson Act does not authorize the direct regulation of at-sea processing activities.¹³

One answer is that at-sea processing does support harvesting, particularly in the roe-stripping circumstance where discarding carcasses frees the processing crew and equipment to handle more pollock than "full utilization" practices would allow.

Another answer is that the definition of "fishing" should not be read so narrowly. During development of the processor-preference amendment, both the House and Senate bills revised definitions to include at-sea processing as "fishing." As one sponsor explained, "In the end, we decided to leave the FCMA definitions unchanged on this point while, at the same time, making clear the act was intended to benefit the entire fishing industry. I want to emphasize that, even though the final bill does not include the House clarification, it is the understanding of the House that 'fishing' in section 3 of the FCMA

¹² It should be noted that this approach would not resolve the allocation issue between factory trawlers and vessels that deliver to on-shore processors. Factory trawlers operating on an undivided annual quota, even though slowed by full-utilization requirements or a no-discard rule, could still harvest the lion's share of the quota early in the season.

¹³ Indirect regulation of both at-sea and on-shore processors has long been accepted under the Magnuson Act as a necessary concomitant of the regulation of harvesting activities. Examples are reporting requirements such as those challenged in National Food Processors v. Klutznick, No. 81-1239 (D.C.Cir. June 30, 1981), and access to loading docks for inspection purposes, enforced in Lovgren v. Byrne, 787 F.2d 857 (3rd Cir. 1986). Another indirect regulation currently under litigation is the prohibition against sale in the Atlantic Billfish FMP (National Fisheries Institute v. Mosbacher, No. 88-3103 (D.D.C., filed October 26, 1988)). The purpose of the prohibition is to implement the plan's allocation of billfish to the recreational fishery and to prevent creation of a market for billfish incidentally caught in a commercial fishery.

does include "processing" and that, for that reason, the proposed clarification is unnecessary." 124 Cong. Rec. H8265-66 (August 10, 1978) (statement of Rep. Murphy).

The legislative history of the Act and its amendments manifests no clear intent by Congress whether FMPs may address what processors do with legally harvested fish. We acknowledge there is no exact precedent for the full-utilization proposal.¹⁴ Examples cited in this memorandum--no at-sea transfer of red drum, no discard of New England groundfish or sharks, no sale of Atlantic billfish, no quota for an anchovy reduction fishery--may be characterized as directed at harvesters.¹⁵ Nevertheless, we find no persuasive analytical distinction between measures aimed at harvesting activities and those aimed at processing activities occurring at sea. Instructing a "fishing vessel" to retain or land fish is--practically or conceptually--no different from requiring it to use the fish for some nutritional or other economic purpose.

The risk in mandating particular uses of harvested fish is that a court, in reviewing the statute, its history, and the agency practice in implementing it, may conclude that direct regulation of processors is a new venture, outside the original intent of Congress. A court might discern a limited authority over anyone beyond the harvester, since the Magnuson Act is so elaborately focused on harvesting activities. Even the processor-preference amendment stopped short of requiring harvesters to deliver fish to U.S. processors or interfering in the business arrangements between processors and harvesters.

One statutory objection to the direct regulation of at-sea processors might be the unfairness involved in requiring full utilization of pollock by floating processors, but not by on-shore processors. National standard 4 addresses the fair and equitable allocation of fishing privileges among fishermen, but does not cover treatment of other participants in the fishing industry. This may be an indication that Congress did not intend direct regulation of processors. On the other hand, many management measures affect different users in different ways without running afoul of the Act (see 50 C.F.R. 602.14).

¹⁴ This lack of precedent was the source of the Regional Attorney's doubts expressed at the September Council meeting on the validity of direct regulation of processors.

¹⁵ The permit condition on the Pacific whiting fishery, however, tells processors as well as harvesters they may not discard fish within 12 miles of shore. This restriction is not aimed at the method of harvest or any allocation of fishing privileges. Rather, it is directed at an aspect of usage of legally possessed fish.

Persons beyond the fisheries jurisdiction of the United States (foreigners who fish only on the high seas or U.S. citizens who fish only in State waters) may enjoy advantages vis-a-vis those subject to Magnuson Act jurisdiction but fishing on the same stock of fish. The fact the Secretary cannot regulate the former does not mean he should not regulate the latter.

Another objection might be that national standard 5 requires measures "where practicable, [to] promote efficiency in the utilization of fishery resources." From one viewpoint, roe stripping is the most efficient practice imaginable: given the time constraints in a quota-driven fishery, the discard of low-value fish maximizes the vessel's economic return by allowing available labor, equipment, and storage capacity to be devoted to production of the high-value roe. The guidelines for standard 5, however, take a broader view of "efficiency." The Appendix to the guidelines states:

NOAA believes that, for purposes of standard 5, efficiency can be defined as the ability to produce a desired effect or product [or achieve an objective] with a minimum of effort, costs, or misuse of valuable biological resources. In other words, Councils should choose management measures that achieve the FMP's objectives with minimum cost and burdens on society....NOAA believes that an FMP should not restrict the use of productive and cost-effective techniques of harvesting, processing or marketing, unless such restriction is necessary to achieve the conservation or social objectives of the FMP (emphasis added).

A measure directed at achieving fuller utilization of pollock flesh could be justified either as a restriction on cost-effective processing techniques that is nonetheless required to achieve a conservation or social objective, or as a means of achieving efficient utilization of fishery resources without wasting protein.

Yet another objection is that national standard 7 requires management measures to minimize costs, including costs to the industry of complying with the measures. The guidelines for national standard 7, 50 C.F.R. 602.17(d)(1), state that management measures "should be designed to give fishermen the greatest possible freedom of action in conducting business... that [is] consistent with ensuring wise use of the resources...." Again, this balancing of economic burdens (loss of roe harvest) against social objectives (fuller utilization of protein) is the sort of policy decision the Act mandates the Council to make.

3. Conclusion

As long as a measure applies to fishing (including at-sea processing), has a purpose cognizable under the Act, furthers the achievement of optimum yield, and is consistent with the national standards, one can argue it is authorized by 16 U.S.C. 1853. We conclude that we could defend direct regulation of harvesting and at-sea processing (but not on-shore processing) to prevent roe stripping as coming within the purview of the Act. The safer approach, however, is to control roe stripping by traditional harvesting restrictions or by banning discards by vessels at sea. Telling processors how much fish meal and how many fillets they must produce risks a judicial challenge to our statutory authority.

We reiterate the need for a record justifying any limitation on roe stripping.¹⁶ We also note the existence of policy arguments against embarking on the "slippery slope" of regulating the economic decisions of processors.¹⁷ Since the legal and policy questions are not free from doubt, and since the national standard guidelines do not address equity among fishery participants other than fishermen, amendment to the Act to clarify the extent to which processors should be regulated would be welcome.

¹⁶ Another caveat: Requirements for utilization of fish must avoid creation of export restrictions that would present problems under the General Agreement on Tariffs and Trade.

¹⁷ Councils concerned about "wastage" or nutritional needs might propose that a certain amount of fish be sold to underdeveloped countries, that salmon be canned instead of marketed fresh, or that recreational fishermen be forced to eat their trophies.

APPENDIX IV

**SURVEY OF POLLOCK PROCESSORS:
METHODS AND RESPONSE RATES**

Staff of
North Pacific Fishery Management Council
and
Alaska Fisheries Science Center

November 30, 1989

ACKNOWLEDGEMENT

The staff of the North Pacific Fishery Management Council wishes to acknowledge the help and cooperation received from various segments of the industry during this entire project.

Without the willingness of individuals from many companies and the support of industry groups, such as AFTA and Alaska Groundfish Data Bank, this survey would not have been possible.

Many thanks to those who reviewed the survey designs, to those who agreed to participate and respond to the questionnaires, and to those who supported and encouraged their constituents to respond.

APPENDIX 1

QUESTIONNAIRES FOR

- 1) FLOATING PROCESSORS**
- 2) SHORESIDE PROCESSORS**
- 3) VESSELS DELIVERING TO SHORESIDE**

Introduction

At its September 1989 meeting, the North Pacific Fishery Management Council (Council) instructed staff to revise its analysis on the pollock roe-stripping issue for the Gulf of Alaska (GOA) and the Bering Sea/Aleutian Islands (BS/AI). In order to respond to the type of concerns raised by the Council, the staff designed and implemented a voluntary survey for the operations involved in the 1989 pollock fisheries.

The intent of the survey was threefold: 1) to acquire a clearer picture of what happened during the 1989 pollock fisheries; 2) to improve the cost and revenue estimates used in the EA/RIR analysis for floating processors, shoreside processors, and catcher boats delivering to shoreside plants; and 3) to gather information on the range of recovery rates for various product forms under the different operations.

Thirty one companies, operating 52 vessels, were identified as having been involved in the 1989 pollock fishery in either the Bering Sea or the Gulf. In addition, 13 shoreside plants, from both regions, were contacted. Two separate, but similar, main survey formats were created for the floating and shoreside processors. A shorter and less detailed third survey format dealt with the boats delivering to shoreside plants.

Format/Methodology

The first part of the main survey dealt with general questions about the operation's activities. When, where, and how long were you active in 1989? How much pollock overall was taken?

The second section attempted to ascertain the operating costs, returns, labor, and percentage of the operation's involvement under three different types of processing modes: 1) when roe was the sole and primary product; 2) when roe was a product but other products were made, in addition to the roe; and 3) when roe was not a product (either not utilized or not available as a product form).

The third section of the form was to fill in information about the characteristics of the firm. Were meal facilities available and used? What was the daily freezing capacity at the operation? How would certain operations be affected by either a ban on roe-stripping or seasonal apportionments?

Once the general formats were established, 1 shoreside plant and 1 floating processor were asked to view the forms and comment on their length, clarity, and usefulness. This was done in lieu of a presurvey, due to time constraints. Minor adjustments were made to the forms after receiving their responses back. The main concern expressed dealt with the length of the form, and an attempt was made to pare back the number of questions asked. The

surveys were still long, due to the large amount of information necessary to analysis this issue. Actual questions used for all three surveys can be found in Appendix 1.

Initial contact by phone was made to individuals at each company in our target audience. Upon reaching the appropriate individual, they were informed of the intent of the survey, the types of questions that were being asked, and that the survey was completely voluntary and confidential. If they agreed to participate, a complete copy of the questions was faxed to them.

Initial contact began in mid-October and by the end of October, all surveys were out to the participants. In cases where we were unable to reach an individual by phone to attain their cooperation, the survey was either mailed or faxed to their company's headquarters with a letter explaining the purpose of the questionnaire.

Surveying the catcher boats delivering to shoreside plants was made more difficult by the fact that these tended to be smaller operations and many were still active in other fisheries this time of year and thus were out to sea. Most catcher boats were contacted initially through secondary sources, such as the plants they deliver to or by an industry organization.

Follow up calls were made to the companies that agreed to participate, approximately 2 to 3 days after the survey was sent. Given the level of detail asked for in the form, most companies required a longer length of time to respond to the questionnaire and preferred to return the completed survey by fax.

Upon receiving the completed questionnaire back, the information was entered into a database in order to allow for computational ease of calculating the range and weighted mean of the responses. Where answers seemed contrary or unclear, attempts were made by staff to contact the individual who completed the form for clarifications. Since the survey was voluntary, sections or questions that were left blank by the respondents were assumed to represent either information that they were unable or unwilling to provide or activities in which the company did not participate.

Given the timing of the Council's December meeting, a cut-off date of November 21 was established in order to have time to do the preliminary analysis. Companies responding after that date were not included in the database.

Response Rate

Floating Processors

25 companies, for a total of 46 vessels, initially agreed to participate in the survey. The remaining 6 companies either declined to participate or we were unable to contact by phone.

Fourteen companies' (19 vessels') data were received in time to be included in the database. This gave us 56% coverage of the initial 25 companies and 41.3% by vessel. Some operations were active in both the Gulf and Bering Sea/Aleutian regions. The sample represented 16,720.22 mt in the Gulf and 448,024.13 mt in the BS/AI, for a combined harvest of 464,744.35 mt.

Factory trawlers were considered to be a less homogenous group than our shoreside respondents with regards to type of operation and returns, so we further distinguished between vessels that were primarily headed-and-gutted operations (H&G) from others, and vessels that only stripped from operations that utilized roe and other product forms. Of the 19 respondents, 7 were H&G vessels operating in one or both of the areas.

Shoreside Processors

Of the 13 shoreside plants initially contacted, 12 agreed to respond and 7 responses were received in time to be included in the analysis. This was a 58.3% response rate overall from the 12 respondents, with 100% coverage of plants located in the Bering Sea/Aleutian Islands subregion and a 44.4% response rate in the Gulf. Total reported processed was 174,629 mt of round weight from plants in the Aleutians and 27,951 mt of round weight from the plants in Kodiak.

Catcher Boats

Only 5 responses were received in time to be included in the preliminary analysis. Four of the vessels fished only in the Bering Sea, with the other one dividing his time between the GOA and the BS/AI region. The responding vessels harvested a total of 5,108 mt of harvest.

Total harvest reported in the survey

Combined sample responses from both shoreside and floating processors covered 667,324 mt of pollock harvested in all regions. That tonnage represents a significant portion of the pollock-taken in the domestic fisheries in the Bering Sea and the GOA.

Caveats to Results/Further Analysis

Although results from the preliminary analysis of this survey data have been incorporated into the current EA/RIR concerning pollock roe-stripping, further work needs to be done on both expanding the database and refining the estimates used in the analysis.

Overall, there was a relatively high coverage of participants, both in terms of number of respondents and metric tons harvested. However, many of the forms were returned incomplete or with some

responses unclear with regards to units, etc. This coupled with the range of activities possible in these pollock fisheries has made it difficult to ensure adequate coverage to answer certain specific questions. For example, when we start to address differences in performance between H&G vessels and other floaters in the Bering Sea in the 1st quarter (prime roe season), we need a sufficient number of completed questionnaires that have included their costs, revenues, and catch distribution for that area, quarter, and vessel category to ensure that the calculated estimates are representative of what happened in the category during 1989.

Attempts will be made during the month of December to increase the number of actual respondents to the surveys, as well as, to follow up on the completed surveys in an attempt to gather some of the missing information necessary for parts of the analysis where the response rate was low.

Further work also needs to be done on how representative the estimates provided are and on the issue of bias in the responses.

Survey III--For trawlers delivering to shoreside plants

Please respond to the following series of questions regarding your fishing activity for pollock in 1989. Please report all catch/harvest answers in mt, all revenue and cost answers in dollars, and all labor responses in terms of actual number of people. Quarters 1, 2, 3, and 4 refer to the calendar quarters.

Part I.

1. Vessel name _____ Respondent's name _____

2. In what region were you active?

Qtr 1	Qtr 2	Qtr 3	Qtr 4
BS/AI GOA Both	BS/AI GOA Both	BS/AI GOA Both	BS/AI GOA Both

3. What was your total reported pollock harvest, in round weight?
BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

4. What percentage of your total groundfish harvest was pollock?
BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

5. How many trips did you target on pollock?
BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

6. How many days was your average trip length?
BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

7. What was your average catch per trip?

For pollock

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

For other retained species

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

Part II.

8. What were your average costs per trip?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

9. What was the average exvessel value per trip?

For pollock

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

For other retained

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

10. What were your total trip cost during 1989?

Total_____

fuel/oil_____

groceries_____

maintenance/repairs_____

supplies_____

Other_____ (please specify)

Part III.

Ask ONLY those respondents who were active in the 1st or 2nd quarter

11. Could you successfully target on females? Yes No

12. What percentage of your harvest was females?
BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____

Survey II--For Shore-Based Processing

Please respond to the following series of questions regarding your processing activity for pollock in 1989. Please report all catch/harvest answers in mt, all revenue and cost answers in dollars, and all labor responses in terms of actual number of people. Quarters 1, 2, 3, and 4 refer to the calendar quarters.

PART I.

1. Location of plant _____ Respondent's name _____
2. What was the total amount (round weight) of pollock you processed? _____
3. What percentage of your total groundfish processing (in RW) was pollock?
4. How many days did you process pollock? _____
5. How many total days did you process? _____
6. What percentage of the pollock harvest was discarded prior to processing because it was undersized or damaged?

Qtr 1	_____
Qtr 2	_____
Qtr 3	_____
Qtr 4	_____

PART II.

7. During any part of your pollock season, did you process roe and then discard the remainder of the pollock without further processing? Yes No (If No, skip to question 8)
 - a. What percentage of your 1989 pollock harvest was processed in this manner?

Qtr 1	_____
Qtr 2	_____
 - b. How many days did you operate in this manner?

Qtr 1	_____
Qtr 2	_____
 - c. What percentage of this harvest was female?

Qtr 1	_____
Qtr 2	_____

d. What was the average yield rate for roe (for females)?

Qtr 1 _____
Qtr 2 _____

e. What was your average daily labor force for processing pollock?

Qtr 1 _____
Qtr 2 _____

f. What was your average daily pollock operating cost?

Qtr 1 _____
Qtr 2 _____

g. What was your average daily gross revenue for pollock?

Qtr 1 _____
Qtr 2 _____

h. What was your average daily labor cost for pollock?

Qtr 1 _____
Qtr 2 _____

i. What was your average price and product grade category?
for roe

Qtr 1 _____
Qtr 2 _____

8. During any part of your pollock season, did you harvest roe while processing the pollock into either surimi or fillets? Yes No
(If No, skip to question 9).

a. What percentage of your 1989 pollock harvest was processed in this manner?

Qtr 1 _____
Qtr 2 _____

b. How many days did you operate in this manner?

Qtr 1 _____
Qtr 2 _____

c. What percentage of this harvest was female?

Qtr 1 _____
Qtr 2 _____

j. What was your average daily labor cost?
BS/AI GOA

Qtr 1 _____
Qtr 2 _____

k. What was your average price and product grade category?
for roe

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

7. During any part of your pollock season, did you process pollock for roe while processing the pollock into either surimi or fillets? Yes No (If No, skip to question 8).

a. What percentage of your 1989 reported pollock harvest was processed in this manner?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

b. How many days did you operate in this manner?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

c. What percentage of this harvest was female?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

d. Could you successfully target on the females? _____

e. What was the average yield rate?

Please indicate NA when a product was not processed.

BS/AI GOA

for roe (for females)

Qtr 1 _____
Qtr 2 _____

for surimi

Qtr 1 _____
Qtr 2 _____

for fillets

Qtr 1 _____
Qtr 2 _____

for meal

Qtr 1 _____
Qtr 2 _____

other product form (please specify) _____

Qtr 1 _____
Qtr 2 _____

f. What was your average daily labor force (both crew and factory workers)?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

g. What was your average daily catch rate?
for pollock

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

for other retained

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

h. What was your average daily operating cost?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

i. What was your average daily gross revenue (for all species)?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

j. What was your average daily labor cost?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

k. What was your average price and product grade category?
for roe

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____

for surimi

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____

for fillets

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____

1. Describe briefly your mode of operation with regards to the following: Is roe the only product form utilized from females, with surimi/fillet products coming from the male portion of your harvest, are larger size females treated differently, do you consider roe the main product to recover or only utilize roe as a byproduct to another main product?

8. During any part of your pollock season, did you not utilize roe a product form while processing pollock? Yes No (If NO, please skip to question 9).

a. What percentage of your 1989 reported pollock harvest was processed in this manner?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

b. How many days did you operate in this manner?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

c. What percentage of this harvest was female?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

d. Could you successfully target on the females? _____

e. What was the average yield rate?

Please indicate NA when a product was not processed.

for surimi

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

for fillets

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

for meal

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

other product form (please specify) _____

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

f. What was your average daily labor force (both crew and factory workers)?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

g. What was your average daily catch rate?
for pollock

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

for other retained

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

h. What was your average daily operating cost?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

i. What was your average daily gross revenue (for all species)?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

j. What was your average daily labor cost?
BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

k. What was your average price and product grade category?
for surimi

BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

for fillets

BS/AI GOA

Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

PART III.

9. What is your total daily freezing capacity?_____

10. What were your total direct annual costs related to the fishing or processing of groundfish during 1989?

Total _____

Fuel/oil_____

Groceries_____

Maintenance/repairs_____

Supplies_____

Crew shares_____

Factory labor_____

Transportation_____

Surimi or processing additives_____

Gear (replacement/repair)_____

Insurance_____

Other (please specify)_____

11. What is the current market value of your operation, including the vessel, processing equipment, and gear?_____

Survey I--For Factory trawlers

Please respond to the following series of questions regarding your fishing or processing activity for pollock in 1989. Please report all catch/harvest answers in mt, all revenue and cost answers in dollars, and all labor responses in terms of actual number of people. Quarters 1, 2, 3, and 4 refer to the calendar quarters.

PART I.

1. Vessel name _____ Respondent's name _____

2. In what region were you active?

Qtr 1	Qtr 2	Qtr 3	Qtr 4
BS/AI GOA Both	BS/AI GOA Both	BS/AI GOA Both	BS/AI GOA Both

3. Which category best describes your mode of operation?

H&G surimi fillet other (please specify) _____

4. What was your total reported pollock harvest, in round weight?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

5. What percentage of your total 1989 pollock harvest was discarded prior to processing because it was undersized or damaged?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

PART II.

6. During any part of your pollock season, did you process roe and then discard the remainder of the pollock without further processing? Yes No (If No, skip to question 7).

a. What percentage of your 1989 reported pollock harvest was processed in this manner?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____

b. How many days did you operate in this manner?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

c. What percentage of this harvest was female?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

d. Could you successfully target on the females? _____

e. What was the average yield rate for roe (for females)?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

f. What was your average daily labor force (both crew and factory workers)?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

g. What was your average daily catch rate?
for pollock

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

for other retained

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

h. What was your average daily operating cost?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

i. What was your average daily gross revenue (for all species)?

BS/AI GOA

Qtr 1 _____
Qtr 2 _____

- d. What was the average yield rate?
Please indicate NA when a product was not processed.
- for roe (for females)
Qtr 1 _____
Qtr 2 _____
- for surimi
Qtr 1 _____
Qtr 2 _____
- for fillets
Qtr 1 _____
Qtr 2 _____
- for meal
Qtr 1 _____
Qtr 2 _____
- other product form (please specify) _____
Qtr 1 _____
Qtr 2 _____
- e. What was your average daily labor force for processing pollock?
Qtr 1 _____
Qtr 2 _____
- f. What was your average daily pollock operating cost?
Qtr 1 _____
Qtr 2 _____
- g. What was your average daily gross revenue for pollock?
Qtr 1 _____
Qtr 2 _____
- h. What was your average daily labor cost for pollock?
Qtr 1 _____
Qtr 2 _____
- i. What was your average price and product grade category?
for roe
Qtr 1 _____
Qtr 2 _____
- for surimi
Qtr 1 _____
Qtr 2 _____

for fillets

Qtr 1 _____
Qtr 2 _____

j. Describe briefly your mode of operation with regards to the following: Is roe the only product form utilized from females, with surimi/fillet products coming from the male portion of your harvest, are larger size females treated differently, do you consider roe the main product to recover or only utilize roe as a byproduct to another main product?

9. During any part of your pollock season, did you not utilize roe as a product form while processing pollock? Yes No
(If NO, please skip to question 10).

a. What percentage of your 1989 pollock harvest was processed in this manner?

Qtr 1 _____
Qtr 2 _____
Qtr 3 _____
Qtr 4 _____

b. How many days did you operate in this manner?

Qtr 1 _____
Qtr 2 _____
Qtr 3 _____
Qtr 4 _____

c. What percentage of this harvest was female?

Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

d. What was the average yield rate?
 Please indicate NA when a product was not processed.

for surimi
 Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

for fillets
 Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

for meal
 Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

other product form (please specify) _____
 Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

e. What was your average daily labor force?

Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

f. What was your average daily pollock operating cost?

Qtr 1 _____
 Qtr 2 _____
 Qtr 3 _____
 Qtr 4 _____

g. What was your average daily gross revenue for pollock?

Qtr 1	_____
Qtr 2	_____
Qtr 3	_____
Qtr 4	_____

h. What was your average daily labor cost for pollock?

Qtr 1	_____
Qtr 2	_____
Qtr 3	_____
Qtr 4	_____

i. What was your average price and product grade category?
for surimi

Qtr 1	_____
Qtr 2	_____
Qtr 3	_____
Qtr 4	_____

for fillets

Qtr 1	_____
Qtr 2	_____
Qtr 3	_____
Qtr 4	_____

Part III.

10. Do you have the ability to make meal at your plant? Yes No
 If yes, from what percentage of your pollock harvest did you
 generate meal? _____
 How much total meal was produced? _____

11. What is the total daily freezing capacity at your plant? _____

12. What were your total direct annual costs related to the processing of groundfish during 1989?

Total _____

Pollock (raw fish) _____

Labor _____

Fuel/electricity _____

Surimi additives _____

Packaging _____

Storage _____

Shipping/Freight _____

Transportation _____

Other _____ (please specify)

Ask these questions ONLY of those respondents who had stripped and discarded during 1989:

13. If a ban on roe-stripping with subsequent discarding had been in effect for 1989, which of the following would you have done instead?
- a. Processed another pollock product form in addition to the roe
 - b. Processed pollock without roe
 - c. Processed another groundfish species
 - d. Not fished during that season
 - e. Other (please specify) _____

14. What impact would that have had on your profits? \$ _____

12. If the annual quota does become apportioned into quarterly seasons, what would be your estimated additional start-up and shut-down costs for entering and exiting the pollock fishery?

	BS/AI	GOA
Qtr 1	_____	_____
Qtr 2	_____	_____
Qtr 3	_____	_____
Qtr 4	_____	_____

Ask these questions ONLY of those respondents who had stripped and discarded during 1989:

13. If a ban on roe-stripping with subsequent discarding had been in effect for 1989, which of the following would you have done instead?

- Processed another pollock product form in addition to the roe
- Processed pollock without roe
- Processed another groundfish species
- Not fished during that season
- Other (please specify) _____

14. What impact would that have had on your profits? \$ _____

LARKINS/Reynolds

PROPOSED WORDING OF ROE STRIPPING REGULATION

IT SHALL BE UNLAWFUL TO HARVEST POLLOCK IN A

DIRECTED POLLOCK FISHERY FOR PURPOSES OF

EXTRACTING ROE UNLESS THE FEMALE AND MALE

POLLOCK CARCASSES ARE FURTHER PROCESSED INTO

PRODUCTS OF COMMERCIAL COMMERCE