


MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke 
Executive Director

DATE: June 1, 1998

SUBJECT: Seasonal/Area Apportionment of Atka Mackerel

ESTIMATED TIME 6 HOURS (all D-1 items)

ACTION REQUIRED

Final Review of an amendment to further apportion the Atka mackerel TAC in the Aleutian Islands.

BACKGROUND

In 1990, the Steller sea lion was designated as threatened under the ESA. Critical habitat was designated in 1993 and includes marine areas within 20 nm of all rookeries and major haulouts west of 144°W. In 1997, the species was split into two separate management populations on the basis of genetics information. The listing status of the western population (i.e., west of 144°W longitude) was changed to endangered while the status of the eastern population remained as threatened. The western population of Steller sea lions (i.e., west of Cape Suckling or 144°W longitude) has declined by 80% or more since the mid 1960s.

Since most of the recent fishery removals of Atka mackerel occur within Steller sea lion critical habitat, preliminary analyses have suggested that the fishery is capable of creating localized depletions of an important Steller sea lion prey where sea lions are likely to forage. The purposes of this proposed action are to reduce the probability of fishery-induced localized depletions of Atka mackerel and reduce the probability of adverse modification of Steller sea lion critical habitat as required by the ESA. Several alternatives were examined.

Alternative 1: No Action: no change in management of the fishery.

Alternative 2: Seasonal A:B split (50%:50%) in TAC.

Alternative 3: Seasonal A:B split (50%:50%) in TAC, plus additional split of TAC to subareas inside and outside of Steller sea lion critical habitat. Possible variations include:

Option 1: Critical habitat split of 40% inside: 60% outside (target split), in areas 542 and 543 during both seasons. Area 541 would not be split for critical habitat because of the 20-nmi no-trawl zone during the A season.

Option 2: Critical habitat split, but split achieved in incremental annual changes (e.g., 10-20% per year) from current split (about 80% inside: 20% outside) to target split.

Option 3: Critical habitat split of 0% inside: 100% outside.

Alternative 4: Seasonal split in all three regulatory areas, or in critical habitat in management areas 542, 543, or both, plus setting of maximum TAC in any season/area based on estimates of initial biomass and application of a target harvest rate.

Alternative 5: Seasonal split and geographic rotation. Establish TAC for each regulatory area, begin with a time-limited season (e.g., 5 days) for 1/3 of TAC in regulatory area 541, then close area 541 and move to area 542 for a second time-limited season on 1/3 of TAC for that area, and then shift to area 543. When all three areas were fished, then return to area 541 and start the cycle again.

Alternative 6: Voluntary fleet distribution of effort throughout regulatory areas throughout year.

An executive summary of the analysis is attached as Item D-1(b)(1). Tim Ragen (NMFS-AKRO) will be on hand to discuss his results.

Executive Summary

This amendment is intended to avoid significant competition between the endangered and declining western population of Steller sea lions and the Atka mackerel fishery in the Bering Sea and Aleutian Islands (BSAI) region. In 1990, the Steller sea lion (*Eumetopias jubatus*) was designated as a threatened species under the Endangered Species Act of 1973 (ESA). The designation followed severe declines throughout much of the Gulf of Alaska and Aleutian Islands region. In 1993, critical habitat for the species was defined to include (among other sites), the marine areas within 20 nmi of major rookeries and haulouts of the species west of 144°W longitude. In 1997, two separate populations were recognized, and the western population (west of 144°W longitude) was reclassified as endangered. The estimated number of Steller sea lions in the western population has declined by more than 80% since the mid 1960s. The ultimate cause of the decline is unknown, but lack of available prey may be the most important proximate cause.

To avoid significant competition between Steller sea lions and the Atka mackerel fishery, the amendment is focused on two main issues: 1) fishery-induced localized depletion of prey for Steller sea lions, and 2) the degree to which a known important prey item can be removed from Steller sea lion critical habitat without constituting adverse modification of that habitat. Management concern about the potential for localized depletion has been expressed in previous ESA Section 7 consultations on the BSAI Fishery Management Plan (FMP). The concern was initially based on the hypothesis that the species' decline is due to lack of available prey, which could be exacerbated by fishery-induced localized depletions of prey. Recent statistical evaluations of catch per unit effort (CPUE) at various sites in the 1990s have indicated that the Atka mackerel fishery has led to localized depletions of Steller sea lion prey (Fritz, unpubl., Appendix 1), thereby increasing evidence for competition.

The second issue is based on the statutory requirement of the ESA that Federal actions within the critical habitat of a listed species not jeopardize the survival and recovery of the species or adversely modify its critical habitat. The single most important feature of critical habitat for the Steller sea lion is its prey base. Since 1977, the portion of catch (prey) taken annually within Steller sea lion critical habitat has varied from 15% to 98%, with an average of 71%. A marked increase in the annual catch in the 1990s, and the high percent of the catch generally taken within Steller sea lion critical habitat has resulted in a marked increase in the amount (tons) of fish taken from areas considered essential to the recovery and conservation of the Steller sea lion, again increasing concerns that the fishery competes with Steller sea lions. The point at which fishery removals of prey from that habitat becomes adverse modification is not clear. In spite of such uncertainty, however, the ESA requires that a judgement be made on the basis of the best available scientific and commercial data.

The purposes of this amendment, then, are 1) to avoid significant fishery-induced localized depletions of Atka mackerel and 2) to avoid significant adverse modification of Steller sea lion critical habitat through excessive removal of prey.

Six alternatives are presented for discussion, including the status quo (no change in management) and voluntary redistribution of fishing effort by fishery participants. The remaining four alternatives are all based on time and/or area management of the fishery. None of these alternatives involves a reduction in TAC or a change to the manner in which the overall TAC is set. The key distinguishing features of these alternatives are 1) whether they involve a seasonal split, 2) whether they involve an apportionment of the TAC inside and outside of critical habitat, 3) the extent to which they use past commercial and scientific data to establish TACs for subareas and seasons, and 4) the number of TAC releases associated with each alternative. Selection of the appropriate alternative must be based on an evaluation of whether or not each possible alternative meets the primary criteria of avoiding significant localized depletions and avoiding adverse modification of Steller sea lion critical habitat. Only alternatives three and four meet both criteria.

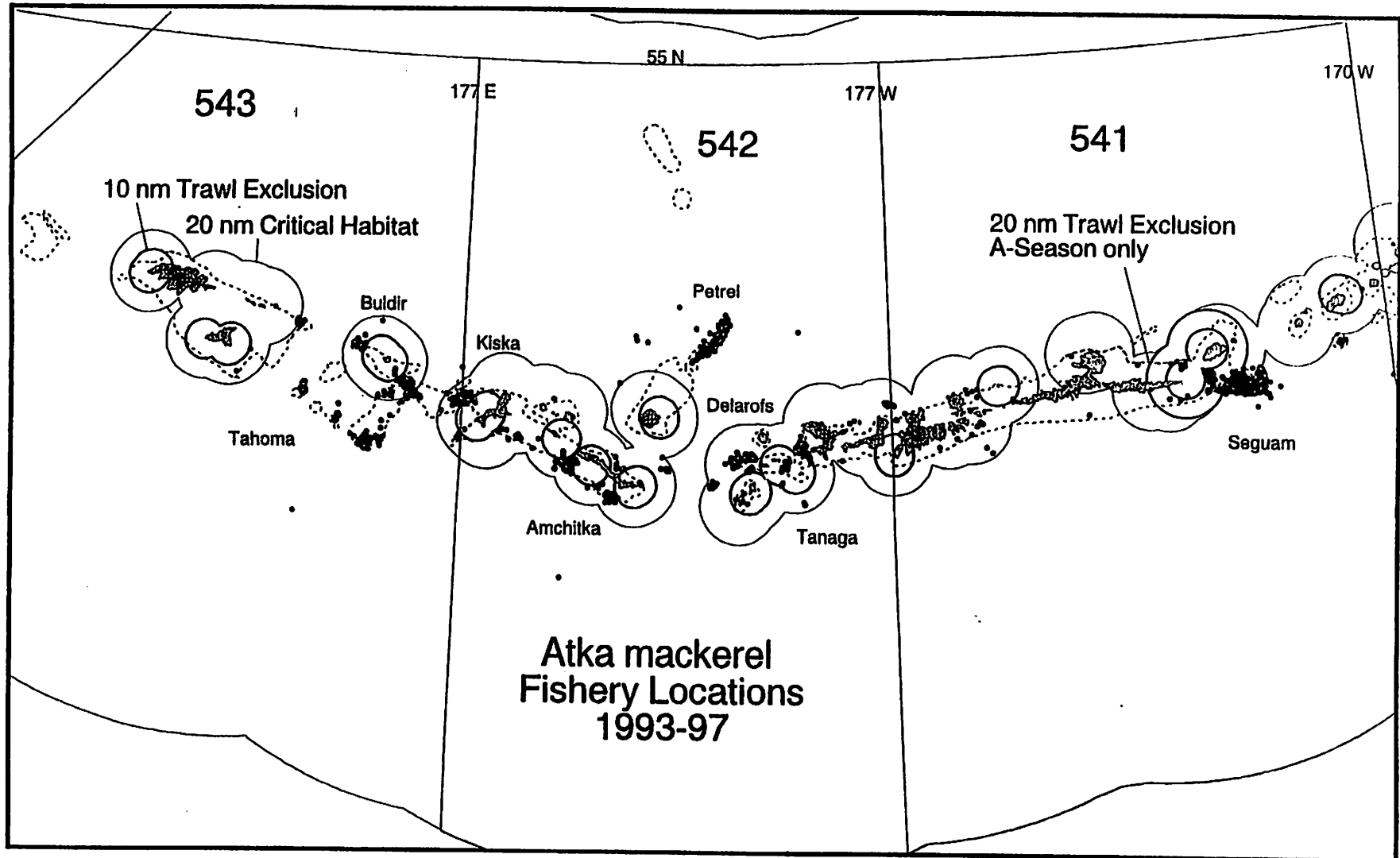


Figure 5. Atka mackerel fishery locations in the Aleutian Islands region in 1993-97. Trawl exclusion zones, Steller sea lion critical habitat zones around rookeries and haulouts, the 200 m isobath, management areas 541-543, and names of locations used by the fishery are shown.

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May 30, 1998

Richard B. Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501-2252**RECEIVED**

MAY 29 1998

N.P.F.M.C

Re: Proposed regulatory amendment to reapportion the Atka mackerel fishery by time and area

Dear Chairman Lauber:

As you know, the Atka mackerel fishery is of great importance to the membership of Groundfish Forum. Some of the proposed actions could have a devastating effect on the Atka mackerel fleet itself, as well as the entire H&G fleet and the support industries in coastal communities dependant on these vessels. We have organized our comments topically for this letter and we intend to raise additional issues at the Council meeting in Dutch Harbor.

Quality of the science in the analysis: Groundfish Forum has carefully reviewed the EA/RIR. We are particularly troubled by the inadequate and inappropriate treatment of comments from the scientists who were asked by Groundfish Forum to provide peer reviews of the analysis. Peer reviewers' comments address certain core assumptions and methodologies used in the analysis and these issues merit thorough consideration.

Given the unsatisfactory treatment of the peer reviews, our first choice would have been for the scientists who provided the peer reviews to come to the Council meeting to provide their thoughts to the Council. It is unfortunately impossible at this late juncture for these scientists to attend the Council meeting due to the lack of availability of flights and lodging. Given the importance and usefulness of their reviews, I would like to make the somewhat unorthodox request that doctors Hoenig, Kirkley, and Sullivan (or any subset thereof) be allowed to provide testimony to the Council via teleconference during this agenda item. This would not only provide the Council with the ability to hear their follow-up comments, but would allow for some direct questioning to help resolve the lingering issues. If this is not an acceptable or feasible proposal, then it is very important that Groundfish Forum be given additional time to lead the Council through the rebuttal points made by the peer reviewers as well as our usual responsibility for providing the comments from the Groundfish Forum Board of Directors. We feel it is very important that the Council be provided all of this information in public testimony and we hope you can provide the means to accomplish this.

Outside the statistical and modeling issues pertaining to the analysis of localized depletion, Groundfish Forum remains very concerned about the lack of pertinent scientific information on foraging behavior of sea lions. This issue is the crux of the NMFS "hypothesis" linking any potential localized depletion to potential limitations on success of foraging. We are frankly

dumbfounded that data on foraging behavior in the GOA would be considered applicable to the Aleutians and we intend to make extensive comments on this and other data issues at the Council meeting.

Reasonable measures to address potential localized depletion of Atka mackerel: The Groundfish Forum continues its general support for the approach set out in the Advisory Panel's recommendation at the April Council meeting. The AP's proposal would create sub-area divisions of the TAC into A and B seasons splits (50%, 50%; January, fall) and an incremental and realistic approach to increasing the percentage of harvest outside critical habitat (doubling the sub-area specific percentage to be harvested outside of critical habitat as a first step). We note that some measures to reduce the impact of this proposal on the flatfish fleet may be needed such as the one suggested in the EA (not to have an A and B season split outside of critical habitat). We will continue to explore additional ways to lessen the impact on the Atka mackerel, flatfish, and Gulf of Alaska fleets while minimizing the risk of localized depletion.

A key element to our support for the AP recommendation is the stipulation that increases in fishing outside of critical habitat should be incremental and that sound scientific methods should be used to evaluate the effectiveness of these incremental changes and the effects of the harvesting sector. Groundfish Forum is heartened to learn that NMFS has recently decided to conduct scientific research next year to evaluate the density of Atka mackerel in "no-trawl" areas before, during, and after the commercial fishery. This research is central to deciding whether the Atka mackerel fishery does, in any way, impact the foraging success of Steller sea lions. This research should also be useful to evaluating the effect of incremental movements of the Atka mackerel fishery outside of critical habitat as well.

While we are pleased to hear that NMFS intends to gather additional scientific data regarding this issue, we note that taking management actions that could severely impact the fishery and dependent coastal communities prior to the availability of any results from this research seems premature. Would not the process be better served by doing the research and obtaining better scientific information prior to implementing measures that may or may not be helpful to sea lions but will certainly devastate the industry? At the very least, the fact that new information will soon be available means that the Council should pursue reasonable incremental steps of fishing reductions inside of critical habitat.

Failure to include an Initial Regulatory Flexibility Analysis: An additional matter of concern is the EA/RIR's "finding of no significant impact" on pages 65-66. The Council and public are supposed to be able to depend on the EA to elucidate the impacts of the proposed measures for the final decision in June. We feel NMFS has erroneously concluded that an "Initial Regulatory Flexibility Analysis" (IRFA) is not required for the proposed amendment. This violates the mandates of the Regulatory Flexibility Act.

NMFS has established guidelines for when an IRFA is required as well its content. We feel the decision not to prepare an IRFA was based on incorrect information in the EARIR regarding the number of businesses and other entities that should be classified as "small entities" as well as a failure to recognize obvious impacts on coastal communities in Alaska. Another problem is the grossly convoluted definition of the universe of affected small entities used in the EARIR. The

main intent of an IFRA analysis is to inform decision makers about effects on small entities and NMFS's misguided decision not to complete an IFRA means the Council has been deprived of adequate information regarding the number of affected small entities, their costs of compliance, effects on their competitive position, and expected ability of small entities to remain in business.

Please consider the following:

1. Although all dedicated Atka mackerel vessels would be expected to have annual revenues over \$3 million, more than 30% of the Bering Sea flatfish H&G boats will not have annual gross revenues exceeding \$3 million this year. The RIR describes in detail the expected negative impacts on those Bering Sea flatfish vessels caused by the entry of Atka mackerel vessels into flatfish fisheries. More than the threshold criterion of 20% of these flatfish vessels are affected "small entities" and thus, from our perspective, an IRFA is necessary.
2. Another criterion that can be used to classify both the Atka mackerel and flatfish H&G vessels as "small entities" (as per the NMFS guidelines for IRFAs) is "fish processors with fewer than 500 employees". All the catcher processor vessels involved with Atka mackerel, Bering Sea flatfish, and Gulf flatfish fall into this category. We brought this up with the analyst who prepared the EA and we were told that "the H&G boats are not processors by Coast Guard definition" and therefore the processor criterion in NMFS guidelines is not applicable. Why is NMFS not using its own definition of a processor whereby we are considered to be catcher/processors as per our groundfish permits? This twist in the treatment of who is a processor for Atka mackerel also contradicts what was done in the EA for Inshore/Offshore III. If the pollock factory trawlers at 240-370 feet in length are small entities, then why are Atka mackerel and flatfish boats suddenly the "big guys" for this Atka mackerel amendment?
3. As the RIR described, some options would likely severely impact Gulf of Alaska flatfish catcher vessels home-ported in Kodiak through Bering sea flatfish and Atka mackerel vessels spilling into the GOA. All of the vessels in the Kodiak flatfish fleet have annual receipts of less than \$3 million.
4. The decision not to prepare an IRFA was also based on a dismissal of impacts on coastal communities and we feel this was unfounded. The EA argues that "the only coastal communities in Alaska that would be affected are the CDQ communities" and that the stake those CDQ communities have in the Atka mackerel fishery does not exceed 5% of their annual revenues. In reality, the guidelines for IRFAs call for analysts to consider "all government jurisdictions with a population of 50,000 or fewer people" as small entities. The Council has received letters from small rural communities such as Adak, Unalaska, Kodiak, and Atka expressing strong concerns for impacts on those communities due to proposed restrictions on the Atka mackerel fishery. Those communities have pointed out offloading, supplying, fueling, and crew changes for Atka mackerel boats allow their businesses to stay solvent during the late spring and summer when other fisheries are closed. The EA errs in the dismissal of these impacts on small entities. It should further be pointed out that Adak and Unalaska are currently **not** CDQ communities.
5. Another problem is the incorrect and frankly unfounded approach to a definition of the universe of entities affected by the proposed measures which is used in the EA to dismiss the need for an IRFA. We have already pointed out that errors were made in the determination of whether affected entities are "small" based on the NMFS guidelines. We feel NMFS

should have defined the applicable universe starting with the most directly affected entities and proceeded outward to the fishing and processing vessels and service businesses impacted by potential effort shifts from Atka mackerel vessels. NMFS's approach is to enumerate (incorrectly) all small entities in the fisheries of the North Pacific and then determine the percentage that are affected. This makes no sense analytically or conceptually and should be subjected to a comparison to IRFA analyses prepared in other regions for fisheries (or other regulated resource businesses).

Vessel Monitoring Systems (VMS)

Groundfish Forum supports the use of a vessel monitoring system (transponders) to address concerns that certain vessels may from time to time fish within the "no-trawl" closed areas. Groundfish Forum condemns any such violation of the closed areas. Member vessels that participate in the Atka mackerel fishery fully support the requirement to carry vessel monitoring systems (based on the costs projected in the analysis) to insure that these closed areas are observed.

Thanks for considering our request for a means to allow our peer reviewers to respond to NMFS's dismissal of their review comments and for the opportunity to provide written comments on the EA/RIR. Groundfish Forum will provide further comment on this issue at the June Council meeting and will continue to work with the Council to find positive solutions to this and other problems facing our fisheries.

Sincerely,



John Gauvin

cc: Bauer, Moynihan, & Johnson, (attn: Gary Haugen)
Small Business Administration (attn: Jerry Glover, Chief Counsel for Advocacy)

★ North Star Maritime Agencies

1530 East Point Road, Dutch Harbor, Alaska 99692
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20 May 1998

Mr. Richard B. Lauber
Chairman
North Pacific Fisheries Management Council
605 West 4th Ave., Suite 306
Anchorage, AK 99501-2252

RECEIVED

MAY 20 1998

N.P.F.M.C

RE: Atka Mackerel Reapportionment Issue

Dear Chairman Lauber,

I am the regional manager for North Star Maritime Agencies, providing support services to trampers and container vessels throughout Western Alaska. The primary cargoes these ships lade consist of pollock, crab, flat fish, cod, Atka Mackerel, herring and salmon. Support for these vessels require a full time staff of 5 and over 300 part time casual laborers here in Unalaska / Dutch Harbor alone. Last year, North Star handled over 400 port calls in Unalaska and is the largest vessel agency in Western Alaska. I am writing to you to urgently request your attention to recent actions regarding Atka Mackerel taken by the North Pacific Fisheries Management Council.

Many of our customers have called to express concern over the action the NPFMC took at its April meeting. The Council decided to move forward with a plan to close off large areas of the Western Aleutians to Atka Mackerel fishing despite the general acknowledgement that the model (that indicated high catch incidents in those areas) had major flaws and more study was required. I have always been able to assure people that the health of the fisheries is in fine hands because of the cautious practices and reliance on science that the North Pacific Fisheries Management Council has always had. Their decision in April represents a major departure from this practice. The Council has decided to ignore both the scientists (SSC) and their advisory panel and press ahead with this ill-conceived idea. It can only be explained as an effort to appease Greenpeace by sacrificing an entire segment of the fishing industry to avoid further litigation.

With worsening marketing conditions and shrinking quotas, our fishing seasons have become painfully shorter each year and it has become much more difficult to remain profitable. Even though the quota for Atka Mackerel has been lowered the past two years, it still remains one of the longer lasting "stable" fisheries here in Western Alaska. The current Atka Mackerel fishery lasts for about six months, with the fishing vessels offloading here in Dutch Harbor, as well as Atka and occasionally Adak. It has become our "bread and butter" fishery, albeit a low profile one.

The focus of media attention, of late, has been on the inshore / offshore pollock debate. While that decision in June will have a dramatic impact on many people's lives, this action underway against the Atka Mackerel fleet will have just as deep an impact

on the businesses of Unalaska / Dutch Harbor. It will also have a ripple effect on other ground fisheries no one has yet to calculate. No analysis of that impact has been done. A legitimate proposal by the fisherman to split their efforts into an "A" and "B" season and to try and concentrate their efforts outside the habitat has been left on the table. The plea for further scientific analysis has been ignored. But what really amazes me is that this direction by the council is being led by the Alaska delegation.

Before you get led down the patch of reacting to threats from Greenpeace, please consider that the weight of the evidence does not support taking drastic measures that will crush the Atka Mackerel fishery. This type of shoddy science only gives the anti-fishing camps more examples to point out to the media and allow them to continue their cries of over fishing. The future of a very important fishery to this region rests on taking appropriate management actions that address the problem but still preserve the economics of the fishery.

Best Regards,



Rick Kniaziowski
Regional Manager



CARGO SERVICES COMPANY
Progressive Stevedoring in Alaska

May 20, 1998

Richard B. Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501-2252

RECEIVED

MAY 26 1998

N.P.F.M.C

Dear Chairman Lauber,

I recently attended the North Pacific Fishery Management Council meeting in Anchorage and am now very concerned about how the Council's actions regarding the Atka mackerel fishery may impact a fleet that is very important to my business and community.

I am Jeffery Thompson of CARGO SERVICES COMPANY, a stevedoring company that operates in the Port of Dutch Harbor/Unalaska. We employ upwards of 300 people seasonally here in our community and service over 50% of the fishery export vessels that call in this port. I have lived in Alaska since 1981 and have been a resident of Dutch Harbor/ Unalaska for 11 years.

A few days after the big inshore/offshore hoopla, the Council took up without fanfare an issue that could affect my business and community to as great an extent as the pollock allocation. This issue is the plan to re-apportion the total allowable catch of Atka mackerel and reduce what are believed to be the fishery effects on Stellar sea lions. Management measures to reduce the risk of possible localized depletion of Stellar sea lions could be devastating to the Atka mackerel fleet and the H&G fleet at large. While this sector of the fishery industry does not get the kind of attention that the billion dollar pollock fleet does, it is a very important part of my business and many other businesses in Unalaska. We rely greatly on their nearly year-round operations during the vast amount of time that the pollock fisheries are closed.

I was expecting the discussion on Stellar sea lions to be fairly straightforward with little room for debate. To my ardent surprise, the Council's scientific advisors, the Scientific and Statistical Committee, came out very strongly against sending the analysis out for public review. They said they had very serious problems with the scientific methods and the assumptions that were used to demonstrate "localized depletion." Hearing of the SSC's concerns over the analysis, the Advisory Panel echoed their recommendation that the document not go out for final review. The AP also pointed out that NMFS has done absolutely no analysis of the devastating economic effects such a measure would have even though NMFS is required to look at localized economic effects.

I was in for another surprise when the Council took up the issue. While the majority of the Council seemed in agreement with the SSC and the AP, they nonetheless voted to send have the document sent out. It is disturbing to see our businesses and communities threatened by potential management measures that are based on suspect and apparently flawed background science and analysis.

While it is important to me as an Alaskan that we protect all of our wildlife and natural resources, I am very concerned by the prospect of the Council using bad science to the potential detriment of an industry that is vital to my company and community. Please keep in mind the importance of the Atka mackerel fishery to Alaskans and the need for good science and analysis when making this decision.

Sincerest regards,

A handwritten signature in black ink, appearing to read 'Jeffery L. Thompson', with a long horizontal flourish extending to the right.

Jeffery L. Thompson, President
CARGO SERVICES COMPANY, INC.

ADAK REUSE CORPORATION

June 1, 1998

RECEIVED

JUN - 1 1998

Mr. Richard B. Lauber, Chairman
North Pacific Fisheries Management Council
605 West 4th Avenue, Suite 306
Anchorage, Alaska 99501-2252

N.P.F.M.C

Re: Proposed Regulatory Amendment to Reapportion the Atka Mackerel Fishery

Dear Chairman Lauber:

The Federal and State Governments have appointed the Adak Reuse Corporation (ARC) as the designated Local Reuse Authority for former NAF Adak. The mission of the ARC is to plan and implement the successful creation of a sustainable community at Adak Island. The proposal to amend the Atka Mackerel Fishery quota will hurt the prospects for creating a viable community on Adak. We therefore request the council to not implement the proposed amendment without additional scientific justification.

The prospects for the reuse of Adak revolve around vessels using its abundant and high quality infrastructure. According to the State of Alaska's report on the successful reuse of Adak Island, the highest priority fishery for the reuse of Adak is to service vessels targeting Atka Mackerel. The Atka Mackerel Fishery is vital to the successful start up of Adak Island.

To date we have provided port services to the Atka Mackerel fleet as well as to the Pollock fleet and other fishing vessels in the area. We have performed numerous medivacs, pilot transfers, vessel resupply, vessel repairs, live fish/shellfish transshipment via the Adak airport, vessel fueling and fish transfers. We expect to open cold storage facilities, and to add to the list of services that we offer the fleet in Western Alaska over the next several months.

The Aleuts, who are now making their home on Adak, in anticipation of island transfer to The Aleut Corporation later this year, are moving to Adak to make a new start. More Aleuts have had to leave the region to find jobs than in any other part of Alaska. The reuse of Adak is expected to slow this out-migration and allow Aleuts to have quality jobs within the region.

Aleuts are moving to Adak to become involved in a ready-built community that can provide needed fishing, cargo, airport, fuel and hospital services to the region. These Aleut families should not be discarded or overlooked when evaluating the impacts of imposing the proposed Atka Mackerel quota amendments.

ADAK REUSE CORPORATION

The Council's Science and Statistical Committee did not believe that information existed to warrant such drastic amendments. Eminent professionals, who performed a peer review of federal justification for the amendment, have serious and unanswered problems and questions about the assumptions used to justify the proposed quota amendments. Reasonable measures to address potential localized depletion of Atka Mackerel - which would not impact the region as hard as the proposed amendments- have been suggested by the Advisory Panel and supported by industry. In short, we request that the proposed amendments not be implemented unless and until there is an economic impact analysis based around professionally accepted and adequate scientific justification for such a major economic disruption to the fishery.

We urge the council to not set management actions that will hurt Aleut families who are intent upon making a living on Adak unless there is no other viable alternative. We request that the council not implement actions that will hurt the reuse of Adak at this critical stage of its start-up. We request putting off implementation of the proposed amendments until such time as additional research confirms that the proposed amendments will in-fact accomplish its intended goal.

Thank you for your attention and consideration of the above comments. Please feel free to contact this office if questions arise, or if additional information is needed.

Sincerely,
Adak Reuse Corporation



Christopher H. Gates
Executive Director

CC: ARC Board of Directors
The Aleut Corporation
Southwest Alaska Municipal Conference
Adak Community Council
State of Alaska, Department of Community and Regional Affairs
Senator Stevens
Senator Murkowski
Representative Don Young
Admiral David Nash, Engineering Facilities Activities Command



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May 20, 1998

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Richard B. Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Ave., Suite 306
Anchorage, AK. 99501-2252

RECEIVED

MAY 26 1998

Dear Chairman Lauber,

N.P.F.M.C

I am the operations manager for Western Pioneer, Inc., a provider of diesel fuel, cargo and frozen product transportation and storage, crane service, ship stores and a number of other services to vessels fishing pollock, crab, flatfish and Atka mackerel. Atka mackerel boats are a big part of what we do because the fishery lasts six to seven months and is one of the few things going when pollock fishery is closed. Without Atka mackerel and flatfish, we would have a difficult time justifying the expense of running a facility of the scale we do in a remote location like Dutch Harbor, Alaska.

I recently spoke to several of the vessel owners who depend of Atka mackerel for a large percentage of their fishing activities. They explained that NMFS and the North Pacific Fishery Management Council are considering severe restrictions on the fishery based on some hypothetical and presumed impacts on sea lions. In fact, the scientists who advise the Council on technical and scientific matters (the SSC) were not satisfied with the methods and assumptions used in the analysis and therefore recommended to the Council that the analysis not be sent out for public review.

I have been following fisheries management in Alaska for many years and I am familiar with the processes by which issues develop. As focus on NMFS treatment of Stellar sea lions intensifies, the Atka mackerel fishery is an inviting target for additional management measures regardless of the scientific merits of such action. Atka mackerel is a relatively low-profile fishery with a small constituency and not much political clout. In fact, it is a very important fishery to our business and our community and any measurement actions restricting the fishery should be supported by good science and analysis.

The Atka mackerel fishermen have made a proposal for an A/B season split of the three area quotas in the Aleutians to slow the fishery down and significantly reduce any potential for localized depletion. They have even offered to increase the percentage of fishing they do in areas not deemed "critical habitat" for sea lions. Their proposal is an incremental approach intended to determine the feasibility of catching Atka mackerel outside of the areas where they currently operate. Forcing the fleet to catch a large portion of the quota in areas that may not have fishable concentrations of Atka mackerel may not be good for either the fish or the sea lions.

Please review this issue with the state's NPFMC members and make them aware that many Alaskan businesses will be devastated by a drastic reduction in allowable Atka mackerel harvests from traditional fishing areas within "critical habitat" being considered by the Council. Please make it clear to the Council that management based on shaky science can devastate the industry and support sector in Alaska.

Sincerely,



Russell Sinnott
Operations Manager

Mr. Richard Lauber
Chairman
North Pacific Fishery Management Council
605 West 4th Street, Suite 306
Anchorage, AK 99501-2252

RECEIVED

MAY 26 1998

N.P.F.M.C

May 21, 1998

RE: Proposed restrictions on Atka mackerel fishery

Dear Mr. Chairman:

I am the Vice President, Dutch Harbor Operations, for Offshore Systems Inc., a provider of diesel fuel, crane service, cold storage, and a number of other services to vessels fishing pollock, crab, flatfish, and Atka mackerel. Atka mackerel boats are a big part of what we do because the fishery lasts 6-7 months and is one of the few things going when the pollock fishery is closed. Without Atka mackerel and flatfish, we would have a hard time justifying the expense of running a facility of the scale we do in a remote location like Dutch Alaska.

I recently spoke to several of the vessel owners who depend on Atka mackerel for a large percentage of their fishing activities and I was shocked to learn that NMFS and the North Pacific Council are considering severe restrictions on the fishery based on hypothetical and presumed impacts on sea lions. When I heard that the scientists who advise the Council on technical and science matter (the SSC) don't even accept that there is any science behind this "localized depletion of food for sea lions" argument leveled against the Atka mackerel fleet, I started to wonder if we are running scared from bogus charges leveled in lawsuits by Greenpeace. Have we lost all practical regard for adherence to good science and a stable business environment needed for healthy fisheries and healthy economies in coastal communities like Unalaska?

I have been following fish management in Alaska for many years and I know a fair amount about how issues come about. In this case, it seems to me that the Atka mackerel fishery is being singled out by the Council and NMFS as the sacrificial lamb for the suit launched by Greenpeace on Steller sea lions. I feel that NMFS has decided that it can gut the Atka mackerel fishery to appease Greenpeace and then move on. They probably feel that the businesses that depend on the Atka mackerel boats have little or no political clout and so this is an easy way out of the issue rather than taking on Greenpeace on the scientific merits of the issue itself. We realize that Atka mackerel is not the pollock fishery but this is cowardly and I want you to know that many grass roots Alaskan businesses that depend on Atka mackerel have sat back and watched this charade long enough.

The Atka mackerel fishermen have made a proposal for an A/B season split of the three area quotas in the Aleutians to slow the fishery down and reduce any potential for localized depletion if it is occurring to any extent. They have even offered to increase the percentage of fishing they do in areas not deemed "critical habitat" for sea lions. Their proposal is based on what is doable and an incremental approach so we can see if they can catch fish outside of the areas they now fish before we force them to try to catch a large portion in areas that might not have enough fish to support such a move. I urge you to follow the recommendations of the fishermen on this issue. I also urge you to consider the effects on coastal communities in making your decision. Please be aware that many Alaskan businesses will be devastated by measures that would kill this fishery by forcing it to fish where Atka mackerel may not exist in fishable concentrations. The acceptance of shoddy science and avoidance of confrontations with Greenpeace and other anti-commercial fishing campaigns will lead the industry and the support sector in Alaska into ruin.

Sincere Thanks,

A handwritten signature in cursive script, appearing to read "Tiny Schasteen", with a long horizontal flourish extending to the right.

Tiny Schasteen

GREENPEACE

June 2, 1998

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N.P.F.M.C

Rick Lauber
Chairman, North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Re: Draft EA, Atka Mackerel amendment to the BS/AI Fishery

Dear Mr. Chairman,

These comments are submitted on behalf of Greenpeace and American Oceans Campaign.

The Steller sea lion population in the Aleutian Islands has declined by about 85% in areas where the largest Steller populations in the world thrived only a few decades ago. Analysis of the existing population data reveals that formerly large, continuous populations in the center of the Steller's range are rapidly dwindling and fragmenting into isolated subpopulations on a trajectory toward extinction in the next century. Low population levels and isolated subpopulations make the Steller more vulnerable to natural fluctuations in the marine environment and environmental stresses which the species normally would be expected to withstand.

Continued competition from large-scale fisheries, the likeliest cause of the sea lions' decline, could push the species over the edge in western Alaska. The extremely depressed status of these sea lion populations underscores the legal mandate to insure that the Atka mackerel fishery does not jeopardize the continued existence of the species or adversely modify its critical habitat.

The leading explanation for this decline is food-related, particularly as food limitation affects juveniles and nursing/pregnant mothers. Food habits data indicates that Atka mackerel is the predominant component of the sea lion diet in the western and central Aleutians, and comprises perhaps as much as a third of the diet in the eastern Aleutians (NMFS 1995; Merrick 1995). Since the Atka mackerel fishery has always been concentrated in highly localized areas primarily within 20 nm of sea lion rookeries and haulouts in the Aleutians, i.e., within designated critical foraging habitat for this species, the risk of adversely affecting sea lion prey availability and/or quality of prey is greatly increased by the record-high TACs for Atka mackerel in the 1990s.

In addition, there has been a complete shift in effort by an overcapitalized factory trawl fleet to the first quarter of the year as vessels race for shares of the quota. A broad spatial division of the quota into three subareas has not reduced the concentration of removals from

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within critical habitat. In fact, as the TAC has reached record-high levels in the 1990s, the volume of fishery removals from critical habitat has soared.

Research using fishery CPUE data strongly indicates that localized extraction rates ranging as high as 40-90% of the estimated Atka mackerel biomass have occurred in the 1990s, leading to localized depletion in critical habitat adjacent to sea lion rookeries and haulouts in the Aleutian Islands (Fritz 1998). The effects of these localized depletions likely are compounded by the rapidly declining Atka mackerel biomass, estimates of which have decreased by 50% from 1991-94 to 1997 (Fritz and Lowe 1997).

Although it is difficult to quantify these impacts precisely, the only reasonable conclusion is that high-volume fishing for important sea lion prey in these areas is adversely modifying critical habitat and diminishing the chances for survival and recovery of the species. Prey quality as well as prey quantity also is an important consideration, particularly if repeated towing of trawl gear over the same areas reduces prey density and causes foraging sea lions to expend more effort in catching prey.

In light of the best available information, the only reasonable and prudent course of action is to minimize human impact in these areas in a precautionary fashion, especially considering the steady increases in fishery removals from these areas from 1977-1997, a period of rapid sea lion decline.

Given the precipitous decline of Steller sea lions in western Alaska and their reclassification as an endangered species in 1997, as well as the research pointing to food availability and food limitation as a major factor in the decline, the long-standing concerns about the localized effects of high-volume pulse fishing for sea lion prey, and new information indicating that high localized extraction rates do indeed lead to localized depletions in the Atka mackerel fishery, we support the conclusion of the Atka mackerel amendment proposal that the status quo operation of the fishery is unacceptable. Since there is general agreement that food limitation is the problem, it makes no sense to allow this large fishery to continue to concentrate in sea lion foraging areas deemed critical to the survival and recovery of the species.

Reducing the likely impacts of high-volume, concentrated trawl fishery removals of key prey species from sea lion critical habitat by excluding these trawl fisheries from that critical habitat should be the highest priority for sea lion conservation in the near-term. This is best measure presently available to provide reasonable assurance that locally high extraction rates and localized depletions will not continue occur inside the these critical foraging areas, although concentrated fishing on the borders of critical habitat could present similar problems. Additional priorities for sea lion conservation should include (1) spreading the catch more evenly in time and area to avoid pulse fishing, (2) reducing the catch in the late fall and winter months, a critical time for sea lions when prey are scarce in nearshore areas, with emphasis on haulouts where as much as 2/3rds of the population has been counted in the non-breeding season, and (3) reducing the overall TAC in response to sharp declines in the estimates of overall stock biomass and to avoid re-creating localized depletions or other negative impacts outside of critical habitat, as fishery effort is displaced to a smaller area.

LOCALIZED DEPLETION: OVERFISHING IN AN ECOSYSTEM CONTEXT

The rapid, steady decline in Steller sea lions, a wide-ranging, generalist, top-level predator, indicates that a dramatic problem in the Aleutian Islands marine ecosystem. Atka mackerel is the most abundant groundfish species in the Aleutians and a primary prey for seals, cetaceans, seabirds and other groundfish, as well as sea lions. Thus, the decline of sea lions may signal trouble for the entire food web.

High-volume pulse fishing that results in locally-high extraction rates long has been suspected as posing the greatest threat to sea lion prey availability. Since Steller sea lions compete directly with the fisheries, consuming large numbers of fish of the same size targeted by the fisheries, the effects of localized depletions on sea lion foraging would tend to be directly and immediately harmful.

Localized fishery depletions mean that Stellers likely are being deprived of suitable prey even when overall abundance of groundfish stocks may be high. In short, the timing and location of fishery removals are as important as total removals. In its December 1997 minutes to the North Pacific Council, the SSC stressed this same point, noting that "Prey availability is increasingly understood to be important to sea lion conservation and recovery. Thus the **MAGNITUDE, TIMING, and LOCATION** of major fisheries targeting sea lion prey species, particularly Atka mackerel and walleye pollock, become a focal concern."

NMFS' Atka mackerel amendment proposal marks an important advance toward a more ecosystem-based approach to the management of the fishery by recognizing that single-species TACs and exploitation rates based on survey data and model estimates of overall stock abundance do not reflect the actual conditions of or impacts from the fishery. Schools of fish are patchily distributed and so are fishery removals -- nowhere more so than in the Atka mackerel fishery. An exploitation rate that appears conservative relative to some model-generated estimate of stock biomass is meaningless to a foraging sea lion if the nearby schools of fish quickly have been decimated by a fishery whose exploitation rate ranges from 40-90% of the local standing stock:

...total Atka mackerel biomass may not be as important as availability in areas around rookeries and haulouts, which may be affected by the fishery. That is, the appropriate comparison of Atka mackerel biomass and Steller sea lion trends is likely not on a range-wide basis, but rather on a more geographically restricted basis with limits determined by the temporal and spatial dynamics of the fish stock and foraging behavior of sea lions.

(p. 17).

Any uncertainties regarding actual stock size based on triennial trawl surveys and the lack of precision in the estimates of stock size at small spatial scales are reasons to be more precautionary, not less. At no time in the near future will any of these scientific uncertainties be

resolved completely. The need for action in the face of uncertainties is something the Council understands quite well, since every TAC it has set, every harvest strategy it has adopted, and every fishery stock assessment it has approved has been and is rife with uncertainties, assumptions, and educated guesses based on limited data.

The failure of conventional single-species management to recognize overfishing in an ecosystem context is made clear by the evidence of localized depletions in the Atka mackerel fishery. We agree with the conclusion of the amendment proposal that the Leslie model represents a significant advance over existing assessment approaches in which localized effects of fishing are not considered. (p. 36). The conclusion of that localized depletion is occurring is based on convincing evidence. The research summarized in the EA represents the best available information at this time and must be acted upon in accordance with the Endangered Species Act and other laws.

THE PROPOSED AMENDMENT ALTERNATIVES ARE INADEQUATE

The amendment proposal examines 6 alternatives with the goals of (1) avoiding localized depletions and (2) avoiding adverse modification of Steller sea lion critical habitat. Only alternatives 3 and 4 are identified as having the potential to meet both of these criteria, but neither of these proposed alternatives would provide any assurance that both criteria actually are met throughout sea lion critical habitat.

Figures 12 and 13 (pp. 120-121) demonstrate that even under Alternative 3, in which no more than 40% of the TAC would be taken from critical habitat in Districts 542 and 543 (but not 541), the removals from most fishery sites would exceed 20% of the largest Leslie initial biomass estimate under a scenario of concentrated fleet distribution. Only if the fleet were distributed evenly across all sites would there be any likelihood of remaining below the 20% threshold of the largest Leslie initial biomass estimate for each fished site. Short of requiring the fleet to distribute its effort evenly across all sites, which is not included in this alternative, that outcome is highly unlikely.

Alternative 4 would set a maximum TAC in any season or area based on estimates of initial biomass and set a target exploitation rate (18-20%) for that area, but would do so only if the statistical models used to evaluate localized depletions (using CPUE data from the fishery) identify depletions in specific areas. Instead of adopting a precautionary approach to preventing localized depletions, this alternative would permit conservative action only after a specific problem has been demonstrated by methods and models with the trawl industry vociferously has opposed, leading to likely regulatory gridlock. Moreover, Alternative 4 is unworkable because it requires an ideal world with perfect information:

The utility of alternative 4, however may be somewhat compromised by annual variability in the distribution and site-specific abundance of Atka mackerel stocks. Estimates of the catch possible at any given site would be dependent on past stock and fishery assessments. The predictive value of those past data will depend on the amount of

annual variation; that is, as variation in stock distribution and abundance increases, past data become less effective at predicting safe levels of fishing.

(pp. 28-29).

In addition to those inadequacies, we have three broad areas of concern regarding the shortcomings of the preferred alternatives.

1. **Avoiding Localized Depletions or Other Adverse Modifications of Critical habitat.**

Under Alternatives 3 and 4, there would be an A/B season split of the fishery as well as a critical habitat split of the TAC (40% inside CH, 60% outside CH) in order to achieve an overall 50% reduction in the percentage of the TAC caught within critical habitat from the roughly 80% average today -- but only for Districts 541 and 542.

There is no analysis to show that a 50% reduction in total fishery removals from critical habitat is adequate to avoid localized depletion or other adverse modification of critical habitat. In reality fishery participants are not spread out evenly, so a 50% reduction does not insure that localized depletions likely will not occur. Nor does a 50% reduction ensure that an adequate level of prey will be available to halt the sea lion decline, much less to promote the recovery of sea lions as required by law.

Under either Alternative 3 or 4, District 541 would not have an inside/outside critical habitat component, only a 50-50 division of the TAC into an A and B season. Although NMFS states that the industry-preferred simple A/B seasonal split of the TAC is not adequate to avoid localized depletions, District 541 is the apparent exception.

The only rationale for not setting an inside/outside apportionment of the 541 portion of the TAC is that the Seguam Pass rookery (the largest in the central Aleutians) has a 20 nm no-trawl zone during the pollock A season. Originally established for January 1-April 15, the 20 nm buffer around Seguam and 5 other eastern Aleutian rookeries subsequently was revised so that it reverts back to 10 nm at the conclusion of the pollock A season. Therefore, the Atka mackerel fishery could still be operating in the A season when the 20 nm no-trawl buffer is no longer in effect. In the B season, there would only be a 10 nm no-trawl zone in place, therefore the B season portion of the TAC could be taken entirely from within critical habitat. Thus, the existing no-trawl zone does not justify treating District 541 any differently from the other districts.

2. **Spreading fisheries in time and area.**

The allocation of the TAC by biomass distribution across three broad subareas (Districts 541, 542 and 543) is based on triennial survey data which may not reflect actual distribution in subsequent years. In any case, the problem of locally-intense pulse fishing is not addressed adequately by broad spatial allocation alone.

The proposed A/B seasonal 50-50 split of the TAC is not sufficient to prevent locally-high extraction rates and/or localized depletions in the fishery. NMFS' own data shows that, even in instances where the fleet's effort is presumed to be evenly distributed across all fishery sites, the catch would exceed 20% of the largest Leslie initial biomass estimate at most sites in Districts 542 and 543.

Moreover, neither Alternative adequately addresses the need to reduce fishing in the late fall and winter months, recognized as a crucial time for sea lions.

3. Reducing the Quota.

The EA does not propose to reduce the Atka mackerel quota under any of the proposed scenarios, even though the preferred Alternatives 3 or 4 would result in substantial displacement of the fishery to a relatively small area outside the critical habitat boundaries in Districts 542 and 543. Merely allocating substantial portions of the Atka mackerel TAC outside of critical habitat, without reductions in the current high TAC levels, likely will result in transferring the problems to these other locales. The Aleutian shelf area <200 meters in depth, where most Atka mackerel are found, is very narrow. Total area available outside critical habitat is about 31% of the shelf area in a few discreet locations. Moving from east to west, known areas of Atka mackerel abundance include: south of Atka Island (subarea 541), Petrel Bank (542), Tahoma Reef (543), between Buldir and Kiska Islands (543), and Stalemate Bank (543). The fishery currently fishes in some of these areas, but not extensively.

By concentrating the fishery in these few areas at current TAC levels, localized depletions are almost certain to occur. What effects such heavy localized fishing may have on sea lions, other marine predators, genetic diversity of the fish stock, fish habitat, and bycatch of other species are unknown at this time, but precaution urges a more conservative approach. A reduction in the TAC to levels which can be considered sustainable within a smaller area of the shelf is necessary to avoid depleting those local fish populations and/or causing other damage (e.g., to seabed habitat) from intensive bottom trawling in those areas. Removals in these outlying areas should be proportional to known estimates of biomass in the area and should not exceed some threshold % of the biomass -- e.g. 20% -- in order to prevent the same problems from recurring in those areas.

The issue of displaced fishery effort and quota reductions is particularly important given the record-high TAC levels of the 1990s and the rapidly declining biomass of the stock in the most recent trawl survey. Even though the TAC has been reduced approximately 40% from the record level of 1996, the 1998 TAC is still nearly three times the 24,000 mt average catch per year prior to the 1990s. Of great concern is the corresponding drop in survey biomass for the Atka mackerel stock during this period of record-level TACs. Even with the lower F rate corresponding to a TAC of 64,300 mt for 1998, the stock is project to continue to decline below the B40% spawner biomass threshold (Lowe and Fritz 1997). At this reduced level of spawner biomass, the stock is vulnerable to overfishing, even measured by the single-species context. In an ecosystem context, the large decline in Atka mackerel biomass can only exacerbate the problem of prey availability for Steller sea lions and other Atka mackerel predators in the region.

THE NEED TO EXCLUDE HIGH-VOLUME TRAWL FISHING FROM CRITICAL HABITAT IN THE ALEUTIAN ISLANDS

Broad time/area management measures are inadequate to address the concentration of fishery removals in sensitive areas. The existing no-trawl zones and broad time/area apportionments of this fishery have not constrained or reduced the total amount of the Atka mackerel removed from critical habitat in the Aleutian Islands.

Excluding high-volume trawl fishing from sea lion critical habitat is the most effective means of likely preventing localized depletions and otherwise avoiding adverse modification of these foraging areas essential to the survival and recovery of sea lions. Such an exclusion also would reflect a special emphasis on protecting winter foraging habitats adjacent to haulouts, where as much as 2/3rds of the population has been counted in non-breeding seasons.

The merits of extending the no-trawl zones to encompass all designated critical habitat affected by this fishery (e.g., from 10 to 20 nm around rookeries, and to at least 20 nm around haulouts listed as critical habitat) include:

- * Catches of primary sea lion prey (pollock, Atka mackerel, Pacific cod) in designated critical habitat areas have soared under U.S. management from 1977-1997, and removals have become concentrated in the first quarter of the year, particularly in the Aleutian Islands. Existing time-area management of this fishery has not constrained, much less reduced, fishery removals from these critical areas at crucial times of the year.
- * Existing no-trawl exclusion zones of 10 nm around rookeries in western Alaska (extending to 20 nm around 6 EAI rookeries during the Bering Sea pollock "A" season) provide some limited "buffers" for foraging habitat frequented by nursing females on rookeries in summer months. However, the existing rookery "buffers" have not stemmed the rising tide of Atka mackerel catches in critical habitat during the 1990s.
- * The importance of protecting sea lion winter foraging habitat goes hand-in-hand with protecting aquatic zones adjacent to haulout sites, since haulouts are where as much as 2/3rds of the animals have been counted in the non-breeding season (NMFS 1993). Existing rookery buffers do nothing to protect feeding areas of adults and juveniles near to winter haulout sites even though NMFS has identified winter as a crucial time of year, when sea lions are expected to be more vulnerable to nutritional stress (Fritz and Ferraro 1997).
- * The radio telemetry data suggests that juvenile foraging ranges are broadly encompassed within existing critical habitat, and juveniles are thought to be the most at-risk segment of the population in terms of foraging ability and finding adequate prey. Mothers with pups also appear to stay closer to shore than non-nursing animals, and their nutritional needs are

believed to be much greater in order to sustain a young-of-the-year pup and carry a fetus to term the next spring.

* Since Steller sea lions are broadly distributed in winter and can move extensively between haulout sites depending on weather and prey availability, eliminating high-volume trawling in critical habitat provides the simplest, most efficient way to provide reasonable protective coverage across all seasons around all the land-based sites listed as critical habitat in western Alaska.

Therefore, we urge NMFS and the North Pacific Council to exclude high-volume trawling from sea lion critical habitat in the Aleutian Islands by making all of this critical habitat a no-trawl zone. This should be coupled with measures which spread the catch seasonally so as to avoid pulse fishing in the crucial winter months, apportion the catch proportional to biomass distribution across subareas 541, 542 and 543, and reduce the TAC to avoid creating similar or additional problems in new areas and reduce the risk of overfishing this individual species.

CONCLUSION

The Endangered Species requires that NMFS and the North Pacific Council act based on the best scientific information available. 16 U.S.C. § 1536(a)(2). The law is clear that this requirement, combined with the statutory directive to "insure" that the fishery "is not likely to" jeopardize the continued existence of sea lions or adversely modify their critical habitat, requires NMFS to address the likely effects of the fishery on sea lions and their critical habitat even though uncertainties may exist. The Endangered Species Act is intended "to give the benefit of the doubt to the species," and to "place the burden on the action agency to demonstrate ... that its action will not violate Section 7(a)(2)." H.R. Conf. Rep. No. 697, 96th Cong., 1st Sess. 12 (1979).

In April 1998 Greenpeace, American Oceans Campaign, and the Sierra Club filed against NMFS for its failure to consider the full range of impacts from the groundfish fisheries in a comprehensive EIS and its failure to address the likely effects of the fisheries on Steller sea lions as required under the Endangered Species Act. Greenpeace, et al. v. NMFS, et al., No. 98-0492-C (W.D. Wash.). The claims in that lawsuit are the result of many years of neglect from NMFS toward the environmental impact of its actions, the likely jeopardy to sea lions from these actions, and the likely adverse modification of critical habitat caused by the concentration of high-volume trawl fisheries in that critical habitat.

The Atka mackerel fishery in the Aleutian Islands exemplifies many of the concerns which are reflected in the pending case. NMFS has presented convincing evidence of localized depletions from concentrated fishing in Steller sea lion critical habitat in the Aleutians. It is incumbent upon NMFS and the North Pacific Council to follow the law by insuring that the fishery is not likely to jeopardize the continued existence of this species or adversely modify its critical habitat. Based on the best available scientific information, meeting the mandates of the

Endangered Species Act and other laws in this fishery should include the exclusion of trawl fishing for Atka mackerel from sea lion critical habitat, the allocation of the catch in space and time so as to avoid pulse fishing, particularly during sensitive times of the year for sea lions and mackerel, and a reduction in the TAC.

Thank you for your consideration.

Sincerely,



Susan J. Sabella
Director, Oceans Campaign
Greenpeace USA

SOURCES:

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N.P.F.M.C.

June 2, 1998

Rick Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Avenue
Anchorage, Alaska 99501

Re: EA/RIR/Initial Regulatory Flexibility Analysis for an Amendment to the Bering Sea/Aleutian Islands Fishery Management Plan to Reapportion Total Allowable Catch of Atka Mackerel and Reduce Fishery Effects on Steller Sea Lions

Dear Chairman Lauber,

The Alaska Marine Conservation Council (AMCC) has been active in pursuing solutions in the problem of Steller Sea Lion-fishery interactions. We submitted a proposal to the North Pacific Fishery Management Council (NPFMC) in December of 1997 to mitigate impacts to sea lions from the Atka mackerel fishery as a way to address the issue of localized depletion. We participated in the Atka mackerel workshop sponsored by NMFS in March of 1998.

Given now the endangered status of the western population of sea lions due the drastic decline in their numbers since the 1960's, the need to minimize human impediments to sea lion recovery is vital to avoid their extinction within the next 100 years. Scientists and others recognize prey availability as an important factor in the sea lions' decline. While the initial and sustained decline are likely tied to a myriad of influences acting synergistically, the only ones we can influence are those of our own behavior. At this time it is imperative to evaluate how we are conducting our fisheries in order to minimize any potential adverse impact to sea lion recovery. AMCC has actively engaged in seeking solutions in order for the Atka mackerel fishery to continue without lowering quotas. We are seeking a viable way to reconstruct the fishery in space and time which does not impede sea lion recovery.

Our comments address the contents of the EA/RIR and offer suggestions that can facilitate the resolution of the current dilemma faced by fishery managers regarding the Atka mackerel fishery and the Endangered Species Act (ESA).

We agree with National Marine Fisheries Service (NMFS) in the EA/RIR that there are two questions that must be addressed regarding impacts to sea lions from the Atka mackerel fishery. These are: "1) Does the fishery result in significant localized depletion of Atka mackerel that could reduce foraging success of Steller sea lions? and 2) How much of a known important prey can be removed from Steller sea lion critical habitat before the removal constitutes adverse modification to that critical habitat?" (p.2, EA/RIR)

Recommendations:

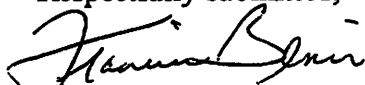
According to the EA/RIR, AMCC's proposal for a redistribution of the fishery by dividing the quota into thirds to be fished sequentially from east to west across the regulatory areas is likely inadequate to satisfy the mandates of the ESA regarding critical habitat. We remain open to an expansion of this proposal that would serve to address the fishery's overlap in critical habitat. **AMCC supports an alternative that addresses both elements of localized depletions and critical habitat.** We understand the imperative of definitive action to mitigate fishery impacts to Steller sea lions. Therefore, we see Alternative 3 as a viable one which incorporates an A:B season split and an incremental approach in shifting fishery effort from inside to outside critical habitat to a target split. We strongly emphasize that such increments in this shift must be both significant and coupled with a definite plan to arrive at the target split within a reasonable time-period. Alternative 4 does not provide adequate protection to critical habitat in area 541 beyond pollock A season. Since the no-trawl zone reverts to a 10nm area from 20nm at the end of the A season, we cannot support this alternative without some modification.

The importance of timing of the fishery to both Atka mackerel and Steller sea lions is not overlooked in the EA/RIR, and warrants further emphasis. We concur with the document's statement on page 23: "To allow a sufficient no-fishing interval between the A and B season (i.e. disperse the fishery over time), to avoid the peak of the Atka mackerel spawning period, and to avoid the winter period critical to sea lions, the B season might be best conducted from 1 September to 1 November."

AMCC is concerned too about potential increases in bycatch as the fishery shifts to outside critical habitat. This situation demands careful monitoring and evaluation as the fishery changes. The incremental shift with an endpoint in mind is one way to allow fishermen to learn new fishing grounds in a way that minimizes any increases in bycatch and habitat disruption. AMCC also supports the implementation of the Vessel Monitoring System (VMS) to ensure a reasonable level of enforceability as the fishery shifts from inside to outside sea lion critical habitat.

As stated in previous AMCC testimony before the NPFMC, failure to act decisively now to minimize the potential for the Atka mackerel fishery to impose localized depletions in and near critical habitat may well be tantamount to having no fishery at all. The mandates of the ESA must be satisfied. NMFS analysis has shown that localized depletions are occurring. While most analyses have their limitations, the NMFS analysis is satisfactory to provide the evidence of localized depletions. This analysis has undergone rigorous scrutiny and the evidence still points to the need to act. We cannot eliminate all uncertainty in fisheries management decisions; indeed, we regularly act in the face of many uncertainties every time a TAC is set. While it is likely we will reckon with a level of uncertainty for some time to come, we can no longer stride forward wearing the blinders of single species management. There is an intricate web of life in the ocean realm. We have the technology that allows us to partake abundantly of ocean riches. Let us demonstrate wisdom in our actions as we do so.

Respectfully submitted,



Francine Bennis
Project Coordinator

June 4, 1998

TO: National Marine Fisheries Service &
North Pacific Fishery Management Council

FROM: James E. Kirkley
John Hoenig

SUBJECT: Review Comments by National Marine Fisheries Service
Of Hoenig and Kirkley Review of "Do Trawl Fisheries Off
Alaska Create Localized Depletions of Atka Mackerel
(*Pleurogrammus monopterygius*)?"

In the EA for Atka Mackerel, the National Marine Fisheries Service commented on our review of the NMFS report "Do Trawl Fisheries Off Alaska Create Localized Depletions of Atka Mackerel (*Pleurogrammus monopterygius*)?" Groundfish Forum requested we respond to these comments. After reviewing NMFS's comments on our reviews, we felt compelled to respond. Our primary concern, however, is to focus attention on improving the ability of researchers to assess the possibility of localized depletion. In the case of fisheries and increased emphasis on ecosystem management rather than simply fisheries management, the possibility of localized depletion will be of major concern to resource managers.

Nevertheless, there were several comments made by the NMFS reviewer that warrant a response. The NMFS reviewer repeatedly attempted to convey the notion that our review was superficial and mostly indicative of theoretical problems (e.g., page 86 of reviewer's comments "Clearly, it is not a perfect analysis - real data rarely meet all the requirements of statistical models perfectly."). The NMFS reviewer offers similar statements throughout the review.

At the same time that NMFS reviewer suggests that statistical analyses are often imperfect, the reviewer admits problems with the Fritz analysis. It should be of considerable concern to NMFS and the Council that the reviewer has no apparent concern about the correctness of the statistical analysis. In fact, the comments by the reviewer almost suggest an anti-statistics or anti-quantitative mentality. Alternatively, it almost seems that the reviewer is attempting to play on the anti-statistic mentality of society (i.e., how to lie with statistics, you can reach any conclusion by the appropriate statistical analysis).

Given that the real emphasis of our review was to help the agency and Council better assess localized depletion, we suggest several courses of action. Initially, it would be worthwhile to start with the Smith work and focus on some other potential problems, particularly nth order autocorrelation. More important, however, is the need to determine whether or not the method used by Fritz is appropriate for Atka mackerel. Another question is whether or not CPUE or LPUE can or should be used as an index or indicator of abundance of Atka mackerel; CPUE is not typically used as an indicator of abundance for pelagics which school, and there is an increasing body of

literature which suggests that CPUE or LPUE are not adequate indicators of abundance for many types of fisheries. A remaining issue is the time period of analysis and not the fact that the time periods and associated data were all that were available. Alternatively, the question "Over what period of time must fishing occur in order to be able to assess localized depletion of Atka mackerel?" must be answered.

We thank you for the opportunity to respond to the comments raised by the NMFS reviewer and sincerely hope that our additional comments will be useful to the process.

Thank You.

Comments to EA: Hoenig and Kirkley

We find the comments made in the EA addressing the points made by Hoenig and Kirkley, Sullivan, and Smith to be strange. How can an agency so dependent upon statistics, so tied to rigorous science, so familiar with math, and so involved in stock assessment and similar work requiring extensive quantitative analysis so easily dismiss the comments raised by three reviewers ?

When we did our initial review for Groundfish Forum, our major concern was to offer comments which might enhance the analysis of localized depletion. It was not our intent to discredit the researcher or the agency. Moreover, the issue of localized depletion will become increasingly important for resource management as managers move away from fisheries management and towards ecosystem management. Reliable and appropriate analytical procedures to assess localized depletion will become necessary.

We were concerned, however, that the agency did not do the best they could. Comments offered by the EA (8.5.4, p. 86) are rather demeaning to all applied statisticians and analysts: "Again, with any analyses, the data likely violate the assumptions of the statistical model to some degree."; and "One can always point out defects in a statistical analysis simply because they represent simplistic models of a complex real world." The important question is whether these "violations" have a significant effect on the conclusions, and there is no indication that such is the case. These statements convey the notion that since we can never have the perfect model, we can use whatever we would like. That suggestion is simply incorrect and unacceptable.

The EA states there is no indication that the violations have a significant effect on the conclusions. There is no indication because nothing was done to examine the ramifications of the violations. It should be a bit embarrassing for the agency to ignore the basics. Working from J. Neter, W. Wasserman, and M. Kitner (1990) (3rd edition) "Applied Linear Statistical Models;" Boston: Irwin Publishers, we find well established basic procedures for linear models. Start with exploratory data analysis, develop one or more tentative regression models, determine if there is one or more of the regression models suitable for the data at hand, if so we revise or develop new models. We then identify the most suitable model, and then, and only then, we make inferences on the basis of a regression model. Even the NMFS reviewer Smith indicated that the OLS estimates were biased, inconsistent, and inefficient; that should be of concern relative to drawing conclusions about localized depletion.

When conducting a regression analysis, there are a lot of standard steps or procedures. Failure to follow standard protocol should not be so easily as done in the EA comments section regarding the reviews. Critical concerns are bias, statistical significance, and minimum variance or efficiency.

Comment 8.5.2 of the EA suggests that we gave a highly technical description of the potential defects of the analysis, but failed to indicate how severe the possible defects might be. Contrary to the EA claims, our description of heteroscedasticity and other statistical problems was not highly technical and restricted to only theoretical problems. We agree, however, that we did not indicate

the possible severity of heteroscedasticity and other problems. We could not analyze all the models and results; we were not asked to do that. Testing for heteroscedasticity is a common procedure in all regression analyses. As we stated, however, heteroscedasticity typically does not pose a problem for time series data. Contrary to the claims made in the EA, heteroscedasticity is not simply the case of a greater spread of points around one part of the regression line than around another part of the line. More formally, heteroscedasticity is the case for which the error or residual variance is not constant over all observations or cases. The covariance between the residual or error and one of the right-hand side variables is not zero; if this is the case, the parameters are not minimum variance and tests based on the normal distribution may lead to erroneous conclusions. We may also reject significance of a coefficient when, in fact, the coefficient is statistically significant. A concern is what is happening to the residual variance as cumulative catch changes.

The analysis by Fritz aggregates catch and effort over various periods of time; note this aggregation is not equivalent to data pooling as noted by Fritz and the EA. On page 77 of the EA (section 8.3.6), it is stated that the pooling of data was an attempt to minimize the standard error about the regression line, while at the same time keep enough data points to estimate a reliable regression line and use the most appropriate measure of effort and effect. This appears to be an unusual approach to analysis of data. The researcher apparently aggregated data over time periods to explicitly minimize the residual error about the conditional expectation (i.e., the regression line)—this was quite arbitrary and not typically done by researchers (most researchers would standardize relative to a given period of time (e.g., one week)—this could be a major point of contention and the problem is identified by all reviewers including Smith

The EA focuses comments on something different than said by Sullivan or Hoenig and Kirkley.

Hoenig and Kirkley were not so much concerned about the use of catch per hour but more about the length of time forming the basic aggregate (e.g., catch per hour over a day vs. catch per hour over a 1.7 day period vs. catch per hour over a 5 day period). It is this level of data aggregation which appears to be inconsistent and without a reasonable basis.

Concluding on the EA's points (8.5.2, p. 86) "real data rarely meet all the requirements of statistical models perfectly." Yes, that is a correct assessment. Unfortunately, it is not a basis for ignoring standard and well-accepted procedures for estimating relationships by regression. The testing for heteroscedasticity and other problems are not indicative of the "perfect analysis." They are evidence, however, that the analyst has done a credible job.

On to the concept of serial or autocorrelation (8.5.3, p. 86), the EA states that the essence of this comment is that the catch at time t is likely to be related to the catch at time $t+1$. We will extend a courtesy to the authors of the EA and assume he/she made a mistake in their definition or is slightly confused. Yes, autocorrelation implies that the value of variable at one point in time is related to the value of the same variable at some other point in time. In regression analysis, we formally define serial or autocorrelation as the case in which the value of the error or disturbance term in one period is related to the value of the error or disturbance term in another period. While serial correlation includes the case in which the error at time t is related to the error at time $t+1$, the more common case in when the error at time t is related to the error of previous periods (e.g., $t-1, t-2, \dots, t-n$).

Yes, the concept of binning or arbitrarily aggregating over different units of time (e.g., aggregation of two days, aggregation of one week, etc.) can mitigate or mask the influence of autocorrelation.

The construction or aggregation over data to remove the influence of autocorrelation is not an accepted statistical procedure. There are too many options regularly available for dealing with serial correlation. We also point out that Smith only tested for first-order serial correlation.

Nth order autocorrelation is quite common and may characterize the estimated model, particularly given that the aggregation of the data may be forcing the estimated relationships. A simple examination of the autocorrelation function of the residuals would indicate the possibility of nth order autocorrelation.

The EA states (8.5.4, p. 86) "that is, they are suggesting that the analysis conducted does not meet the assumptions of a parametric statistical model (based on a normal distribution), and therefore is inappropriate." The point of our comment is that Fritz did not even consider whether or not the assumptions for OLSQ were satisfied. If the agency does not provide the results of analysis of the assumptions, it is impossible to judge the appropriateness of the model. The NMFS reviewer, Smith, however, did consider the problem caused by an endogenous variable appearing on both sides of the equation and at least examined for 1st order autocorrelation. Smith also concluded that the approach of Fritz leads to biased and inconsistent estimates when cumulative catch includes one half of current catch. Smith found a negative relationship between CPUE and cumulative catch, but noted that the estimates of biomass were not precise; we had this same conclusion. Smith, like we, also suggested that further analysis of more disaggregated data would be preferred.

Given that Hoenig and Kirkley and Smith and Sullivan all find similar statistical problems and brought them to the attention of NMFS, there is nothing more than can be done if NMFS desires to ignore the limitations of the Fritz analysis. There is no sense in discussing issues with a recording machine with one and only one message.

A very alarming set of comments by the EA dealt with our section (8.5.5, p. 86) "Regression diagnostics should be run." The EA did not even correctly respond to the issues Hoenig and Kirkley raised. The EA discusses an issue on linear vs. nonlinear models which came before the diagnostic discussion. In fact, the EA does not discuss the issue of regression diagnostics, at all.

We were concerned about outliers which may be driving the results (e.g., abnormally low value for last observation). If Atka mackerel boats do not target or only minimally target Atka mackerel during the last time period, we would have a very low CPUE which would likely give a significant and negative relationship between CPUE and cumulative catch (however measured). Alternatively, if there is any temporal pattern relative to targeting Atka mackerel, it is possible to make erroneous conclusions based on CPUE. It is common practice to conduct a wide array of standard regression diagnostics when developing a regression model. We found no evidence of any of the standard diagnostics, especially those for outliers (e.g., studentized residuals, leverage values, DFBETAS, etc.). Alternatively, outliers or very large values of CPUE at the beginning of the data set could be determining the statistical relationship. Is it possible for CPUE to be extremely high at the beginning of the harvest season or time period for reasons other than resource abundance. It is also possible that various aggregation schemes (time periods over which effort and catch are aggregated) could

obscure any outliers. Fritz or Smith did not, however, provide any analyses of outliers or other standard diagnostics.

There appears to be some confusion in the EA regarding linear vs. nonlinear models. Our comments really focused on linear vs. nonlinear estimation and not a linear vs. nonlinear form of the model. With a nonlinear estimation, the initial standing stock can be directly estimated as opposed to having its value determined by solution. It is likely, however, that a nonlinear estimation would fail to converge given the limited number of observations. Please note, the form of the equation is identical to the linear model; we are just using a nonlinear routine to estimate catchability separately from the initial standing stock.

Section 8.5.6 (p. 86) states: "The confidence limits for estimates of initial biomass are not the best indicator of a significant decline. The question of significant decline in CPUE is addressed by standard statistical evaluation of the slope of the line, not confidence limits on the x-intercept". Unless we missed something, we were not under the impression we were examining the confidence limits on cumulative catch. We were examining the confidence limits on the estimates of the initial standing stock. Given the inconclusiveness of the results (as determined by all three reviewers), we cannot assume or accept the estimates of the slope coefficients as reliable. We have large confidence intervals for some estimates of the initial standing stock which suggest no localized depletion.

If the researchers do not care about the estimates of the initial standing stock, why did they bother to present the estimates and the corresponding confidence intervals? The EA states that normal regression techniques were applied and are valid. No, they are not valid; you cannot regress Y on a function of Y and have efficient, unbiased, and consistent estimates. There is no relationship between the confidence intervals for the survey biomass estimates and the confidence intervals obtained by Fritz. What if the slope of the regression, while negative, is .000000001 or .1, but statistically significant. What can we infer about depletion. Alternatively, when we have very large confidence intervals for an estimate, we have very low precision and cannot make accurate conclusions about depletion.

Regarding confidence intervals and the slope coefficients: In Smith's initial two-stage estimation, we have 14 out of 26 regression which were not significant at the five percent level (the five percent level was the criteria used by the EA (8.3.1, p. 76). Table 8.2 of Smith indicates that 11 of 26 regressions were not significant. We also find that the slope coefficients associated with the coefficients determined to be significant at the 10% level of significance include several positive values—it appears that fishing is good for the resource.

Smith took the time to conduct a Monte Carlo analysis, and it was a very good analysis. Smith notes that the results confirmed normality of the OLS coefficients. That is fine and exactly what should have been done by Fritz. There remains some other aspects to the Monte Carlo analysis. Smith notes that the results for the biomass estimates were inconclusive. Smith's conclusion suggests some problems for concluding localized depletion. There is also the problem that we have no idea about the significance of the regressions obtained with the Monte Carlo analysis.

Given the overall ramifications of the results of Fritz, it would be appropriate to conduct a simple

sensitivity analysis in which the initial and last observations were changed by 1, 2, and 5% in value and iteratively deleted. We would then have an idea about the sensitivity of the OLS results and estimates of slopes to small changes in CPUE. If we find that small changes (e.g., a one percent increase in CPUE in the last observation) gives us an insignificant slope, we would know that the results are very sensitive to the initial and ending values of the observations. This is exactly why a full set of regression diagnostics should have been done.

The EA never offered comments about the stability of the coefficients. Again, in time series analysis, it is common practice to examine the stability of the regression coefficients. Without a priori information about possible periods in which the slopes may change, cusum and cusum-squared values could be obtained to provide an indication of possible instability of the coefficients. Simply, we want to know whether or not the value of q (the slope coefficient) has changed over time; cusum and cusum-squared values provide some possible evidence of changing structure.

Summary of comments on the EA

In the Fritz analysis, there were simply too many short-cuts or arbitrary analytical decisions made:

- (1) no reporting of basic regression statistics such as Durbin's-h or the Ljung-Box or even the significance of the overall regression;
- (2) no regression diagnostics to detect the present of outliers or influential values were conducted—these are standard procedures used to examine regression models;
- (3) the researcher apparently aggregated data over time periods to explicitly minimize the residual error about the conditional expectation (i.e., the regression line)—this was quite arbitrary and not typically done by researchers (most researchers would standardize relative to a given period of time (e.g., one week)—this could be a major point of contention, but one must have access to all the statistical results corresponding to each aggregation to know whether or not there are problems;
- (4) we have no theoretical or practical knowledge to indicate over what length of time the Atka mackerel fishery must take place in order to determine whether or not the analysis is even appropriate for determining localized depletion;
- (5) we have no adequate theoretical or empirical basis to know whether or not commercial CPUE or LPUE provide a valid indication of abundance for a pelagic species such as Atka mackerel;
- (6) the researcher completely ignored any testing of structural stability or the possibility of coefficients changing over time within a specified time period of analysis;
- (7) we still remain troubled about the multiple species issue and whether or not the most appropriate data were used—if the fishery involves multi species, CPUE of one species may not indicate much of anything unless the one species constitutes a clear majority of the catch for each data point;
- (8) Two different reviews reached the same conclusion regarding the inclusion of one-half of current

catch on both sides of the equation; both reviews indicated that OLS produced biased, inefficient, and inconsistent estimates; the EA casually dismisses the problem as probably not serious as used in the analyses; the EA states that Fritz needed cumulative catch, which includes current catch, as the independent variable—the inclusion of one-half of current catch means that Fritz did not have a true independent variable on the right-hand-side; no individual well versed in regression would ever attempt to use ordinary least squares (OLS) to estimate an equation with a dependent or endogenous variable on both sides of the equation; other approaches using instrument variables as done by Smith are preferred; the EA states that haul number could have been used and the results would almost certainly be apparent; the EA also states that haul number might not be as good an indicator of the previous effect of the fishery because of the observed variation in CPUE—which way is it—is the haul a good or bad indicator—cannot have it both ways; it is very alarming that the EA does not believe the inclusion of an endogenous variable poses an important problem—especially given the comments by the NMFS reviewer Smith who clearly states that the original approach of Fritz leads to biased and inconsistent estimates.