#### **MEMORANDUM**

TO:

Council, SSC and AP Members

FROM:

Clarence Pautzke

**Executive Director** 

DATE:

November 28, 2001

SUBJECT:

Seabird Avoidance Measures

ESTIMATED TIME 6 HOURS

#### **ACTION REQUIRED**

Final action on amendment package, including additional options from October.

#### BACKGROUND

#### Revisions to Regulations for Avoidance Measures, Seabird EA/RIR/IRFA, November 2001.

Biological opinions issued by the U.S. Fish & Wildlife Service (USFWS) in 1997 and 1999 require that NMFS investigate the effectiveness of seabird avoidance measures currently used in Alaska's hook-and-line groundfish fishery. In April 1999 the Council took final action on recommended changes to the existing seabird measures. NMFS later decided to await the availability of final research results from a Washington Sea Grant Program (WSGP) study before proceeding with rulemaking to revise the seabird avoidance measures.

At the October 2001 meeting, the Council received the report from Mr. Ed Melvin, WSGP, on his collaborative two-year research program (1999-2000) entitled "Solutions to seabird bycatch in Alaska's longline fishery." The WSGP study recommends the following regulatory measures for all Alaska longline vessels: 1) deploy paired streamer lines during the setting of gear, and 2) eliminate the direct discharge of residual bait and offal from the stern of the vessel while setting gear. Material and performance standards for streamer lines are specified. Other recommendations are made for gear, methods, and operations which should not be allowed as seabird avoidance measures.

The Council then took action to release the associated EA/RIR/IRFA for public review with final action in December. The Council requested the following additional information and options be included, to the extent possible, prior to release:

- 1. Add a section discussing monitoring and enforcement issues with particular reference to performance standards, the role of observers, and ability to modify confidentiality restrictions to allow for industry use of peer pressure;
- Expand the description of vessels to include gear type, crew size and setting speed by vessel size;
- 3. Expand the economic discussion to include the cost of rigging small vessels to deploy 2 streamer lines;
- 4. Add the following options to Alternative 4:
  - a. Allow single streamer lines on vessels based on gear type or vessel size, or area, with specific reference to 35 to 60 feet vessels, broken down into increments of 5 feet (i.e., 35, 40, 45, etc);
  - b. Allow for modification of the performance standard based on gear type and/or vessel size;
- 5. Require a seabird avoidance plan aboard every vessel in the groundfish and IFQ fisheries; and

6. Vessels 32' or less fishing halibut in IPHC Area 4E would be exempted from seabird avoidance regulations. Vessels fishing in the internal waters of Southeast and Prince William Sound would also be exempted.

The draft-EA/RIR/IRFA includes four alternatives:

- Alternative 1: Status quo: No change in the current Federal requirements for seabird avoidance measures.
- Alternative 2: Revisions to existing regulations, based on the Council's final action in April 1999.
- Alternative 3: Revisions to existing regulations, based on recommendations from a two-year scientific research study conducted by the WSGP on the effectiveness of seabird avoidance measures used in hook-and-line fisheries off Alaska.
- Alternative 4: Minor modifications to WSGP recommendations for regulatory changes.

#### Applicability of Alternatives

The current seabird avoidance regulations apply to operators of Federally-permitted vessels fishing for groundfish with hook-and-line gear in the GOA and the BSAI, and Federally-permitted vessels fishing for groundfish with hook-and-line gear in waters of the State of Alaska that are shoreward of the GOA and the BSAI, and to operators of vessels fishing for Pacific halibut in U.S. Convention waters off Alaska. Since the inception of requirements for seabird avoidance measures off Alaska, NMFS has intended for all hook-and-line vessel operators at risk of incidentally taking short-tailed albatross and/or other seabird species to use these measures, regardless of geographic area fished (i.e. EEZ, state waters, inside waters) or target fishery (i.e. groundfish, halibut, IFQ, CDQ). As new information becomes available the applicability of the requirements could be revised as appropriate.

To more closely reflect the respective fishery management authorities and policies of federal and state governments, regulations implementing any of the alternatives would apply to operators of vessels fishing for:

- 1. Pacific halibut in the IFQ and CDQ management programs (0 to 200 nm),
- 2. IFQ sablefish in EEZ waters (3 to 200 nm) and waters of the State of Alaska (0 to 3 nm), except waters of Prince William Sound and areas in which sablefish fishing is managed under a State of Alaska limited entry program (Clarence Strait, Chatham Strait), and
- 3. Groundfish (except IFQ sablefish) with hook-and-line gear in the U.S. EEZ waters off Alaska (3-200 nm).

The IFQ and CDQ federal management programs have a consistent and comprehensive history of application of federal regulations in state waters. The federal management of the groundfish resource off Alaska has a long history of cooperation with the State of Alaska. The Council, USFWS, and NMFS could pursue adoption of seabird avoidance regulations by the State of Alaska for hook-and-line fisheries for groundfish in State waters. At its March 2002 meeting, the Alaska Board of Fisheries (Board) will consider a Board-generated proposal that would change state groundfish regulations to parallel federal regulations governing seabird avoidance measure requirements for operators in hook-and-line fisheries.

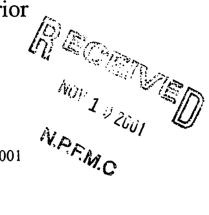
Under any of the alternatives, existing regulations would be revised to clarify that seabird avoidance regulations apply as originally intended to all operators of vessels of a specified length that are fishing in U.S. Convention waters off Alaska for Pacific halibut, whether under the auspices of the IFQ program or the more recently developed CDQ program. At the time the seabird avoidance measures were required in the Pacific halibut fishery, the fixed gear halibut CDQ allocations were managed as part of the IFQ program and implementing regulations were found at Part 679 Subpart D (§ 679.40). In 1999, regulations governing halibut CDQ fishing were revised to clarify which elements of the halibut IFQ regulations applied to the halibut CDQ fishery. These regulations are found at Part 679 Subpart C (§ 679.30) and inadvertently did not include reference to the seabird avoidance gear and methods requirements.



SAE

## United States Department of the Interior

FISH AND WILDLIFE SERVICE 1011 E. Tudor Rd. Anchorage, Alaska 99503-6199



November 13, 2001

Mr. David Benton, Chairman North Pacific Fishery Management Council 605 West 4<sup>th</sup> Avenue, Suite 306 Anchorage, Alaska 99501

Dear Mr. Benton:

As the Fish and Wildlife Service and National Marine Fisheries Service continue to work with fishermen to craft reasonable solutions to the seabird bycatch problem, I wanted to reiterate the Fish and Wildlife Service's position that performance standards be a part of those solutions. Besides the issue of the applicability of the Washington Sea Grant Program's research to smaller longline boats, the issue discussed most frequently at the Seattle meeting was performance standards and enforcement. A recent bycatch incident strongly highlights the need to incorporate reasonable streamer line performance standards into regulation.

On October 5, 2001, an unidentified albatross was killed, along with 30-35 other seabirds (the captain counted up to 55 scabirds), in a single set on longline gear north of the Pribilof Islands. This bird is being classified as an unidentified albatross because the observer was not able to observe any key identifying characteristics before it came off the hook. However, the location of the incident coupled with the observer's observations of only short-tailed albatrosses around the boat in the days preceding the incident, suggest that it could have been a short-tail. Ironically, the albatross was taken on a vessel flying paired streamer lines, but during the debrief of the observer, it was evident that the streamer lines were not being used in an effective manner. The observer's notes indicate that the streamer lines were tied off at the stern, only about 15 ft above the water. In addition, the drag float was only 40-50 yards behind the boat, and the streamers were very short, perhaps as short as 2-2.5 ft. The observer reported that seabirds were flying under the streamers.

We have no reason to question the veracity of this observer's observations and to me they clearly reflect the need for performance standards. It was our observation at the October Council meeting that the freezer longliners and larger IFQ vessels would be able to adopt the performance standards as outlined in the WSGP report. These performance standards may need to be modified for smaller boats or those using snap gear, and progress is being made in defining those modified standards.

Fishermen also expressed concern about unwarranted affidavits filed by observers, and enforcement of performance standards. We are sensitive to those concerns and believe they can

best be addressed through 1) observer education, and 2) the careful and common sense review by NMFS Enforcement and NOAA General Counsel of any affidavits filed by observers. It is our intent that only egregious violators be prosecuted.

We anticipate including the WSGP's performance standards for freezer longliners and larger IFQ vessels as part of the incidental take statements in our forthcoming biological opinions, as well as some modified standards for smaller vessels.

Sincerely,

Regional Director

cc: Greg Balogh, FWS Kim Rivera, NMFS

Jim Balsiger, NMFS

From :

PHONE No. : 051998

Nov. 13 2001 4:16PM P02

Alaska Hishing Muchines/Dave Kubiak/KODIAK

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November 10, 2001

Dave Kubiak F/V Mythos PO Box 2084 Kodiak, AK 99615

N.P.F.M.C

Mr. Stosh Anderson;

I am not available to attend your public meeting regarding seabird avoidance measures, and so I thought perhaps you would be able to take my comments in written form and advise me where else I might make my observations available.

I have been a small boat longliner since about 1980 and have fished for halibut and codfish on four different vessels, all under 45 feet. I have used both snap and stuck gear and currently use stuck gear. I deploy a toryline for sea bird avoidance while fishing and have done so for the past several years. This past season I used a toryline supplied free to fishermen from an Oregon group and It is nicely rigged and works well.

Let me make the following experienced observations about using these torylines for seabird avoidance:

- Even the simplest torylines (without dangling lines) scare birds away from the groundline. With just a 50 fathom 3/8 poly line for a toryline, I have never observed a bird to hover or settle on groundline with that line overhead. Birds avoid the toryline completely and within a short time abandon following our boat.
- As simple as they seem, torylines are tricky to use. If the vessel does not alter course after the last buoy is thrown over at the end of a string of gear, the towed buoy at the end of the toryline will sometimes catch on the buoy set up and pull the set, sometimes breaking the anchorline or ripping the eye out of one or more of the buoys. When recommended weight is added to the trailed toryline buoy, more fouling occurs. Unfouling the toryline from the buoyline is often troublesome and sometimes, when the weather is rough, dangerous.
- My current vessel is 14 feet in breadth, and I have difficulty keeping pairs of torylines from becoming entangled. Turns made preliminary to setting must be calculated so the single toryline will not enshark the first buoy setups, double torylines not only foul themselves, they are double trouble for fouling buoys/flagpoles as gear is first being set, or ending. Since the single toryline works perfectly well, requiring two is superfluous.
- Vessels using snap gear must reverse when they end a string they are setting, this requires an extra crewman (who is normally needed to help handle buoys

Alaska Fishing Machines/Dave Kuhiak/KODIAK

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and anchors) in order to haul back the toryline to prevent it from being pulled into the propeller. Double torylines mean double this crew requirement.

- For whatever reason, with or without torylines, I have never seen a bird get hooked by gear I was setting, even with the old fashioned "J" hooks. I imagine that dry stuck groundline of various composition might float long enough with or without toryline to catch a bird. We always thoroughly wet our tubs of gear before setting to prevent floating, and we snap on weights between tubs.
- Simple, trouble free solutions are the best for seabird avoidance by longliners.
   The single toryline works well for stuck gear when some precautions are followed. Complex solutions will result in avoidance by fisherman, rules or no rules.

If I may be of further assistance in this matter please contact me.

Sincerely,

Dave Kubiak F/V Mythos (Kodlak Audubon Society Member, too)

#### Mr. David Benton,

On the issue of bird streamers on board longline vessels we need to remember that too much is not necessarily a good thing. I have LL since 1975 and understand well the issues. I have many years on the inside fisheries in southeast and many years in the gulf (27yrs). The southeast waters on the inside is quite limited to almost all seagulls and to require any vessel to deploy a bird device is these waters is quite a mute point. As we head to the outside waters sure the device needs to be deployed but to deploy more than one is a bit overboard and that is certainly what will happen eventually to a crewman having to deal with more than one and on our small vessels 60ft and under. The practical place for deploying the tori line will be some were typically high above the main deck. The life of one crewperson is worth far more than any bird I know of. Please take safety issues in to consideration. Limit the deployment of the tori line to one.

N. D.F.M.C

Thanks for your time.

Bill Connor.

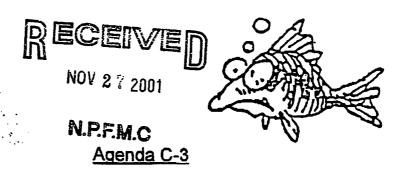
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North
Pacific
Longline
Association



November 26, 2001

Mr. David Benton, Chairman North Pacific Fishery Management Council 605 West 4<sup>th</sup> Avenue, Suite 306 Anchorage, AK

**RE: Seabird Avoidance** 

The North Pacific Longline Association supports the Recommendations for Regulatory Action for vessels of 30.5 meters or more made at page 36 of the Washington Sea Grant Program (WSGP) study, "Solutions to Seabird Bycatch in Alaska's Demersal Longline Fisheries." These include the requirement that if both paired streamer lines cannot be deployed before the first baited hook, at least one must be deployed, and that the second must be deployed within 90 seconds of the first baited hook entering the water; streamer line performance standards; materials standards; and limitation of directed discharge while setting. These recommendations should be incorporated into revised seabird avoidance regulations.

When the longline industry proposed the regulations now in place we recognized and stated that they were our first attempt at seabird avoidance, and that they would be revised as experience and research dictate. We have now completed a two year cooperative study on seabird avoidance, the most comprehensive such effort ever attempted. The study recommendations derive from analysis of the resulting data, the best scientific evidence now available on seabird avoidance in the longline fisheries off Alaska. It is significant that the U.S. Fish and Wildlife Service, the consulting agency on endangered short-tailed albatrosses, has stated in writing that it will include the WSGP's performance standards for freezer-longliners and larger IFQ vessels as part of the incidental take statement in its forthcoming biological opinion. It appears that we have little choice but to adopt the same standards in our regulations.

It is the opinion of our membership that the WSGP standards are reasonable and achievable by our fishermen – please see attached letter from Alaska Frontier Company with written testimony from its captains. We recognize that the goal is to reduce seabird bycatch, and that the issue is so critical that we must be prepared to assume certain burdens to do so.

This is not to say that we do not have concerns with the new program. Chief among these is the possibility of overzealous monitoring by observers. It is the opinion of our membership that some observers have an "attitude," and that they will go to great lengths to find fault with our operations. In particular we are concerned that ice, heavy seas, fouled streamers and other unanticipated or unavoidable difficulties (in addition to wind, which is accommodated by the recommendations) may hinder deployment and performance of streamer lines. We hope the Council will speak out on these matters, and will recommend that if there is a question regarding performance under the new standards, very thorough documentation of all surrounding circumstances be prepared by the observer program and the vessel. Above all, observers should be instructed to notify the captain immediately if they see any problem in streamer line deployment. Only in this way can problems be addressed and seabird bycatch avoided.

Again, our advice is that the WSGP Recommendations for Regulatory Action for vessels of 30.5 meters or more be adopted as seabird avoidance regulations. Vessels of all sizes and longline gear types that operate in outside waters must make concerted efforts to minimize seabird bycatch – we are all in this together.

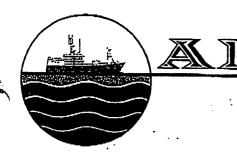
Thank you for your attention.

Sincerely,

Thorn Smith

Smith

**Attachments** 



### ALASKA FRONTIER COMPANY

133 4th Avenue North • Edmonds, WA 98020 (425) 775-3424 • Fax: (425) 778-2322

November 19, 2001

Mr. David Benton North Pacific Fishery Management Council 605 West 4<sup>th</sup> Avenue, Suite 306 Anchorage, AK 99501-2252

Dear Mr. Benton:

As requested by Mr. Thorn Smith of the North Pacific Longline Association, I am writing to you to express our views on the proposed Performance Standards in upcoming regulatory actions.

During the summer, the NPLA hosted a series of meetings to discuss bird deterrence measures with vessel Captains, owners and operations managers. Based on findings and recommendations of the 2 year study by Ed Melvin and the Washington Sea Grant Program, a proposal to fully deploy two streamer lines from 90 seconds of the first hook entering the water was tabled. At the time, I discussed with my Captains the feasibility of this proposal and if it would present any real problems with fishing operations. All three Captains stated they did not believe any serious problems would be encountered. I told them I would revisit this with them later into the season to learn if any issues arose from these measures. I have recently contacted the vessels to see if they have possibly changed their minds on this and they have stated that they have not.

We feel these measures are attainable and necessary, from our operations perspective. I cannot comment accurately on other vessels possible complications with this, but based on what we have seen, we believe this can be accomplished without too much difficulty. The importance of deploying the deterrence measures before baited hooks enter the water cannot be overstated. There would significant exposure to feeding birds without any deterrence measures in place, increasing the incidence of bird bycatch. We, therefore, support the Performance Standards as proposed.

Regards,

Mike Bayle

Operations Director

#### Mike Bayle

To: : Subject:

Mike Bayle FW: DPR.MISC



----Original Message----

From: FRONTIER EXPLORER [mailto:WBF5288@globeemail.com]

Sent: Sunday, November 18, 2001 4:21 AM

To: mike@alaskafrontier.com; bill@alaskafrontier.com;

Bill Atkinson@email.msn.com; ken@alaskafrontier.com; downfamily@msn.com;

kirstcn@alaskafrontier.com; kris@alaskafrontier.com;

mbayle@mindspring.com; yuko@alaskafrontier.com

Subject: DPR, MISC

MIKE,

TO ANSWER YOUR Q ABOUT BIRD DETERENTS: WE HAVE HAD NO PROBLEMS OPERATING UNDER THE NEW RECOMENDATIONS, NO PROBLEMS AS FAR AS GETTING IT INTO THE WATER IN THE ALLOTTED TIME.

Received: from WBF5288 at Globe Wireless; Sun, 18 Nov 2001 12:20 UTC

Message-id: 1456248325212

#### Mike Bayle

From: FN Frontier Spirit [spirit@ssmail.net]

Sent: Saturday, November 17, 2001 6:27 PM

Yuko; Mike (Office); kris; Mike Bayle (Home); Kirsten Peterson; Ken Down; Ken at office; Bill To:

Atkinson

Subject: SP0203-41

Rgr on the bird stuff, I had read the proposed regs that Ed submitted, and it all looked fine, as far as this vessel deployment of bird bags we let one side go as soon as the gear bags and flag go over and the second one by the time the anchor goes over so the bags are out long before the first hook goes out. MG



P.O. Box 1\$64 Petersburgi Alaska 99833

Phone (907) 772-4835
Fax (907) 772-9385

November 28, 2001

Mr. David Benton, Chairman NPFMC 605 West 4th Avenue, Suite 306 Anchorage, AK 99501-2252

Re: Comments on C-3 Seabird Avoidance Measures EA/RIR/IRFA

Dear Chairman Benton,

Prowler Fisheries, Inc. recommends the NPFMC move ahead with final action on the regulatory amendment to revise seabird avoidance measures to reduce the incidental catch of seabirds. Prowler Fisheries, Inc. operates three freezer-longliners in the BSAI/GOA and supports the adoption of Alternative 4 (which is Alternative 3 with revisions in some portions) subject to the following additions and changes:

1.) Performance Standards: Recommend modification of performance standards by adding the word "approximately" before certain standards. The purpose is to maintain an enforceable intent in order to prosecute major violations but without the degree of exactness contained in the proposed standards, as currently drafted.

The proposed standards would put all longliners in violation at some point even if generally in compliance with the intent of the regulations. A vessel could technically be in violation by simply by changing speed, making a turn, changing weather conditions etc. and thereby having a streamer line go momentarily slack. A vessel would also be in violation if the second streamer line was set in 91 seconds as opposed to the required 90 seconds. Additionally, the exactness of the standards exceeds enforcement's ability to measure those same standards. The proposed standards, such as distance airborne and off the groundline, will necessitate enforcement to make a subjective estimate of a vessel's compliance to a very exact standard.

The purpose of the performance standards is to ensure correct use of the seabird avoidance devices. The question seems to be whether correct use is best achieved by regulation or education. It would seem that education will be a necessary portion of the program regardless of what goes into regulation. Public outreach is a component of bycatch reduction programs throughout the world such as Australia, Japan, New Zealand, and CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources). In New Zealand, there is a fishery advisory officer that works one-on-one with vessel skippers on effective use of mitigation measures.

Frozen at Sea Longline Caught Fish

The performance standards could be included in regulation but only as guidelines. However, this may not prove to be sufficient for enforcement to issue a violation of any type whether major or minor nature.

In Appendix 11 of the WSGP paper (Washington Sea Grant Program: Ed Melvin report), there is a summation of regulations in effect for reducing seabird bycatch in longline fisheries around the world. In this appendix, there are very few performance standards and none with the specificity as proposed regulations in the EA. For example, the CCAMLR regulations state, "The streamer line is to be suspended at the stern from a point approximately 4.5 m above the water...".

Similarly, we recommend that the word "approximately" should be added to the following standards in the EA:

## Alternative 3: 1.) Regulatory Recommendations: A.) Gear:

- a.) ".....fully deployed within approximately 90 seconds." (re: deployment of paired streamer lines.").
- b.) "....streamers are in the air for a minimum of approximately 131.2 ft (40 m) aft of the stern for vessels under 100 ft (30.5 m) and approximately 196.9 ft (60 m) aft of the stern for vessels 100 ft (30.5 m) or over." (re: performance standards).

#### Alternative 4: Performance Standards:

- a.) Buoy Bag Line Standard: "....deployed within approximately 2 m of either side of the groundline."
- b.) Single Streamer Standard: "...in the air for a minimum of approximately 40 m aft of the stern and within approximately 2 m of either side of the groundline."
- c.) Paired Streamer Standard: "....in the air for a minimum of approximately 40 m aft of the stern and within approximately 5 m of either side of the groundline."
- d.) Snap Gear Performance Standard: "...in the air for approximately 20 m aft of the stern and within approximately 2 m of either side of the groundline."
- 2.) Intent: Recommend addition of Council intent language for clarification purposes concerning enforcement of regulations with particular reference to the performance standards. The Council could help clarify the intent of the performance standards for enforcement, observers, and longliners. The Council has previously clarified enforcement intent on the action taken with RI/RIU.

3.) Line Shooters: Request a change in the recommendation in regards to line shooters which is found in Alternative 3, Section IV. This section is entitled "Recommendations of Methods Not to Use for Seabird Bycatch Reduction" in which Item E states not to consider the "Use of a line shooter as a seabird reduction device." A line shooter is designed to set lines at a speed slightly faster than the vessel's speed during setting. The baited groundline enters the water slack rather than stretched out behind the stern of the vessel.

An other study, conducted in Norway, found that line shooters are a seabird bycatch reduction device. Lokkeborg (2000) compared line shooters, lining tubes, and paired streamer lines. Lokkeborg states that "Seabird bycatch was reduced by 59% for lines set with the line shooter [as compared to no deterrents]".

In the Bering Sea, the F/V Bering Prowler uses a line shooter (and a single streamer line) and is currently well below the fleet average in seabird bycatch (source: FIS: Fisheries Information Services).

Year	Fleet Average (birds/1000 hooks)	F/V Bering Prowler
2000	0.090	0.007
2001 (JanJune)	0.041	0.01]

The WSGP study concluded that line shooters actually increased seabird bycatch. The WSGP study of line shooters was limited due to time constraints and the large number of bird devices that were to be tested. As a result, the testing of the line shooter may not be representative of all applications. The line shooter was used only in the first year of the study on a single-screw vessel that set from the second deck level. There was difficulty in getting the gear to sink which was attributed to the prop wash turbulence.

Prowler Fisheries, Inc. experience with the use of a line shooter is more consistent with Lokkeborg than the WSGP study. Therefore, similar to the recommendation in the revised draft EA concerning lining tubes, Prowler Fisheries requests that line shooters be treated similarly as a seabird bycatch reduction device but not to be used as a sole deterrent. The recommendation in that section would then read, "E. Use of a line shooter as a sole deterrent method."

Otherwise, based on the recommendations as presently written in the EA, the Council could well expect to see a future proposal from a well-meaning but misinformed bird conservation group that would request banning the use of line shooters based on the recommendation in the EA. This would be unfortunate and counterproductive for both seabirds and the vessels that are successfully using line shooters.

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4.) Promotion and Implementation of New Innovations in Seabird Avoidance: The regulations being proposed are a result of the two year WSGP study under an Exempted Fisheries Permit. The WSGP study and the EA both recommend encouraging "...continued development of seabird bycatch avoidance measures by the Alaskan fleet" and "...encourage the development of designs and technologies that eliminate the need to fly streamer lines."

These are noteworthy objectives. The problem is in implementation. The only existing methods for testing new innovations and developments (and subsequently revising future regulations) are:

- a.) Exempted Fisheries Permit (EFP): An EFP is required for any fishing that would be in violation of existing regulations (such as testing new bird avoidance devices) and is not considered part of an exempt educational activity. An EFP requires a Federal Register notice as well as both Council and NMFS approval. This can be a six months to two year process for approval (personal communication Russ Nelson, AFSC).
- b.) Exempted Educational Activity Authorization (EEA): An EEA is required for fishing that would be in violation of existing regulations but it is part of an activity conducted by an educational institution for educational purposes. Fish obtained under an EEA are prohibited from being sold. Therefore an EEA is not appropriate for a fishing vessel to test new bird avoidance methods while engaged in commercial fishing operations.
- c.) Scientific Research Permit (SRP): A SRP is required for all NMFS research conducted from NOAA vessels and NMFS chartered vessels conducting research that would be in accordance with existing fishing regulations. An SRP cannot be used on a commercial vessel during the course of normal fishing operations.

The dilemma is how to encourage innovation and development of new ideas within the current framework. The only available avenue to the commercial fleet is an EFP. By its lengthy nature (Federal Register, NMFS approval, Council approval), the EFP process discourages commercial fishermen who wish to experiment with new ideas or innovations. The present process seems to suggest that the only method to revise the regulations is an other large scale research project similar to the WSGP study.

In order to address this dilemma, Prowler Fisheries Inc., requests the Council consider the following or other alternative solutions:

a.) Use of Existing Charters: Consistent with the EA recommendation to encourage innovation and continued development of seabird avoidance measures, we ask that the Council consider the addition of a recommendation to use existing longline charters (surveys, gear impact studies, etc.) to test new proposed measures (if any). This would only apply where practicable and as long as the testing does not interfere with the original

purpose of the charter. The intent is to utilize existing longline charters that already have permits, and have biologists onboard.

b.) New Experimental Permit: Recommend the consideration of a new limited experimental permit from NMFS or the Council for the commercial fleet to encourage continued development seabird avoidance measures during the course of normal commercial fishing operations. It is envisioned that this permit would not be as lengthy or arduous a process to obtain as an Exempted Fisheries Permit.

Thank you for your considerations of these comments,

John Winther

Prowler Fisheries, Inc.

Joh Wenth

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The Kodiak Chapter of the National Audubon Society supports proactive measures by the NPFMC to reduce seabird mortality in the hook-and-line fisheries. We have reviewed the Environmental Assessment (EA) and wish to comment specifically on the alternatives to the action. Kodiak Audubon has about 110 members in our local chapter.

We do not support Alternative #1. Alternative 1, which is no action, can not be viewed as anything but a purely academic alternative. The Washington Sea Grant Program (WSGP) study proved through scientific investigation that the staggering number of scabirds killed each year in the Alaska hook-and-line fishery is preventable when avoidance gear is used.

We do not support Alternative #2. Our main concern with Alternative #2 is that it does not consider results from the WSGP study. There is no mention of paired streamer lines in Alternative #2, yet the WSGP study found that paired streamer lines reduced seabird bycatch from 88-100 % while causing no consequence to catch rates. Additionally, Alternative #2 specifies that weights must be added to the groundline, yet the WSGP study found weighting gear had variable effect on seabird bycatch, 37 % for sablefish fishery and 76% for the Pacific cod fishery. In light of recent findings from the WSGP study suggesting further investigation is needed to determine optimum weighing regimes for groundlines for seabird avoidance, Alternative #2 seems insufficient to fully meet the goals of the proposed action.

Alternative #3, based on the WSGP study, is an excellent regulatory measure for large vessels in the hook-and-line fishery. However, after input from local Kodiak fisherman we feel the alternative may be unduly restrictive and pose unnecessary logistic hurdles to the small boats fishing in Alaska's nearshore waters. Kodiak Audubon supports this conservative alternative over Alternatives #1 and #2, but we also strongly support Alternative #4.

Kodiak Audubon strongly supports Alternative #4, as it takes into account the WSGP recommendations while making modifications to suit smaller vessels. We agree with the Science and Statistical Committee (EA, p. 9) suggestions that new information equivalent to the WSGP study be collected to determine the most appropriate methods for bycatch reduction on vessels less than 45 ft. LOA. Alternative #4 mandates that single streamers be used on all vessels between 26 ft. – 45 ft. LOA. While the WSGP study found albatross attack rates to be 5x higher in single streamer deployments than paired streamer deployments, we believe this finding may not hold true for smaller vessels fishing nearshore. Alternative #4 would mandate paired streamer lines for vessels greater than 45 ft LOA, as recommended by the WSGP study.

For the reasons stated above, Kodiak Audubon strongly supports Alternatives #4 and also supports Alternative #3. We request that the NPFMC take our views into account, and we thank you for your consideration.

RECEIVED

NOV 2 8 2001

Alisa Abookire

Kodiak Audubon Conservation Chair P.O. Box 1756, Kodiak, AK 99615

November 28, 2001

N.P.F.M.C

RECEIVED

N.P.F.M.C

Nov. 28, 2001

Michael J. Mayo F/V Coral Lee 2800 Sawmill Creek Rd. Sitka. Ak 99835 907-747-3413 msmayo@ptialaska.net

NPFMC 605 West 4<sup>th</sup> Ave Suite 306 Anchorage, Ak 99501-2252

Re: Seabird Avoidance Measures

Dear Council Members,

I hope it is not too late to suggest a different avoidance technique. I have been successful in avoiding albatross and other seabirds since 1982, which, is when we encountered the seriousness of this problem. I have been longlining since 1976.

While we are setting the gear, we throw black cod heads off to the side. This usually results in 100% of the birds off to the side of the vessel and not in the wake trying to eat the bait while setting the gear.

To build a better mousetrap. Birds, like mice adapt to their environment. They are not dumb animals. Only animals not as smart as us. The streamer lines may work for this year, maybe next. But the birds will adapt, self-preservation being what it is. Why not be more benign and let them eat. Or, at least, allow methods to work that have been working for 20 years. Please excuse my tardiness on this issue. I did go to the seabird avoidance workshop, during the Fish Expo, 3 years ago. I explained my views. I also showed pictures of us setting gear with 100% of the birds (approximately 150 to 250 birds) off to the side and not bothering with the baited hooks. Please feel free to call me if you have any questions. Personal obligations, (children and jury duty) will keep me in Sitka.

Also, a question, does one have to do anything to avoid seabirds if none are around? Sometimes you get to the grounds and set before any birds show up. In some areas the birds sometimes don't show up. What then? Advertise your presence?

Sincerely yours// Mayor Michael J. Mayo

## REVISED DRAFT SEABIRD EA/RIR/IRFA

A Regulatory Amendment to Revise Regulations for Seabird Avoidance Measures in the Hook-and-line Fisheries off Alaska To Reduce the Incidental Catch of the Short-tailed Albatross

And Other Seabird Species

A presentation to the North Pacific Fishery Management Council

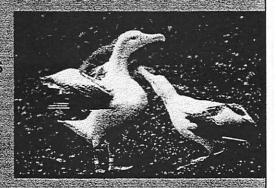
December 2001, Agenda Item C-3

Kim Rivera Protected Resources Division NMFS, Alaska Region

# PURPOSE: Revise seabird regulations based on WSGP research program

#### WWENY2

- Requirement of USFWS Biological Opinion
- Improve effectiveness of seabird avoidance measures



## **PROPOSED ALTERNATIVES**

- 1: Status quo
- · 2: Council's 1999 final action
- 3: WSGP recommendations
- 4: Modifications from WSGP

(see Table 1)

## **Applicability of All Alternatives**

- For groundfish, in EEZ only (3-200 nm)
- For IFQ & CDQ halibut, in US Convention waters off Alaska (0-200 nm)
- IFQ sablefish, EEZ & state waters (0-200 nm), with exceptions
- BOF considering changing state regulations in March 2002

#### SSC's RECOMMENDATIONS

- Less stringent measures in 'inside' waters of southeast Alaska
  - Revised Alt. 4 (Table 1a)
- Additional study on need for bycatch reduction on small vessels; how best to achieve
  - Coordination with ADF&G, USFWS, NMFS, IPHC, industry—e.g. longline research surveys
  - Also Scientific Research Permits (SRP) &
     Exempted Fishing Permits (EFP) (50 CFR 600.745)
  - (Section 4.1.4, p59)
- Impacts on 'other albatrosses' may be CS-
  - Revised tables (section 4.2 p65, section 5.1 p69)

### **COUNCIL'S INITIAL ACTION**

**Revise EA to:** 

- Discuss monitoring & enforcement issues
- · Expand description of vessels
- Cost of rigging small vessels for streamer lines
- Require seabird avoidance plan onboard
- Add option to Alt. 4 that would allow for single streamer lines & modified performance standards on specified vessels
- Add option to Alt. 4 that would exempt vessels
   42 ft fishing halibut in 4E from seabird measures; other areas exempt also

- Expand description of vessels
  - Gear type (snap, auto-bait, hand-bait)
  - Crew size
  - Setting speed
  - See Section 3.2, Tables 9, 13b, 15b, 16a, and 16b
- Cost of rigging small vessels for streamer lines
  - See Section 6.3.5 (p91)
- Require seabird avoidance plan onboard
  - Added to Alternative 4
  - Heighten awareness of skipper & crew
  - Types of measures used,
  - Where seabird gear & spare is stored,
  - Designated crew responsible for deploying seabird gear,
  - Signed by skipper & read by all crew
  - See Section 4.1.4 (p63)

- Discuss monitoring & enforcement issues
  - With particular reference to performance standards
  - Role of observers
  - Ability to release observer data for use by industry
  - Sections 3.4.4 (p37) & 4.1.4 (p62)
  - Observer monitoring of set
  - Observer Cadre & outreach
  - Enforcement procedures & policies
  - Development of Summary Settlement Schedule

### OTHER ADDITIONS TO ALT. 4:

- · Avoidance measures must be onboard
- Available for inspection, upon request
- Spare replacement bird line must be onboard

## **Alt 3: Regulatory Recommendations**

- · Paired streamer lines
  - Performance standard
  - Materials standard
  - Weather exception for safety
- Prohibit directed discharge of residual bait or offal from stern while setting

## **STREAMER LINES (ALT.3)**

- PERFORMANCE STANDARD
  - Streamers aloft 40m aft of stern for vessels <100ft
  - Streamers aloft 60m aft of stern for vessels >100ft
  - Both streamers deployed within 90 s of 1st hook
- MATERIALS STANDARD
  - Line 300ft long
  - Brightly colored streamers every 5m
  - Streamers hang within 1/4m of water
- WEATHER EXCEPTION
  - If wind speeds >30kts (near gale or Beaufort 7), then 1 line OK
  - If wind speeds >45kts (storm or Beaufort 9), then safety of crew supersedes deployment of lines

## **COUNCIL'S INITIAL ACTION**

Revise EA to:

- Discuss monitoring & enforcement issues
- Expand description of vessels
- Cost of rigging small vessels for streamer lines
- Require seabird avoidance plan onboard
- Add option to Alt. 4 that would allow for single streamer lines & modified performance standards on specified vessels
- Add option to Alt. 4 that would exempt vessels
   <32 ft fishing halibut in 4E from seabird measures; other areas exempt also</li>

## ALT. 4—LESS STRINGENT MEASURES FOR SMALL VESSELS (see Table 1a)

- · Area fished:
  - 'Inside' = Prince William Sound (Area 649),
     Southeast Inside District (Area 659), Cook
     Inlet
- Vessel length:
  - -<26ft exempt; 26-45ft; 45-100ft; ≥100ft</p>
- Vessel type:
  - "skiff"
- Gear type:
  - Snap gear

Tab	ole 1a.			
Location/Gear .		Vessel Type		
	< 26 ft LOA	≥26 to 45 ft LOA (without superstructure) <sup>4</sup>	>26 to 45 ft LOA (with superstructure)	> 45 ft to 100 ft LOA
Inside <sup>1</sup>	Exempt	Buoy w/ Perf. Std.	Single Streamer	Single Streamer
	1%	19%		14%
EE <b>Z</b> ²	Exempt	Buoy w/Perf. Std. + Other Device	Single Streamer + Other Device	Paired Streamers
	3%	29%		34%
EEZ/Snap Gear <sup>3</sup>	Exempt	Buoy w/Perf. Std. + Other Device	Single Streamer w/Mod. Perf. Std. + Other Device	Single Streamer w/Mod. Perf. Std. + Other Device
	3%	72%	,	25%

#### ALT. 4 PERFORMANCE STANDARDS

- BUOY BAG LINE
  - Single streamer line with no streamers attached
  - 10 to 40 m length
  - Within 2m of either side of main groundline (over the groundline)
- SINGLE STREAMER (only <100ft vessels, as specified)</li>
  - Same as Alt. 3--40 m aloft; 90 m length
  - Within 2m of either side of main groundline (over the groundline)
- PAIRED STREAMER
  - Same as Alt. 3-40m or 60m aloft; 90 m length
  - Deployed from stern on either side of groundline
  - For side-setters: One line over groundline, other to either side
- SNAP GEAR
  - Single streamer line (45 m length)
  - Deployed aloft 20 m aft of stern

#### **ALT. 4---OTHER DEVICES**

- Why?
  - Additional protection when single lines used
- Weights added to groundline
- Buoy bag line
- Strategic offal discharge
- · Streamer line

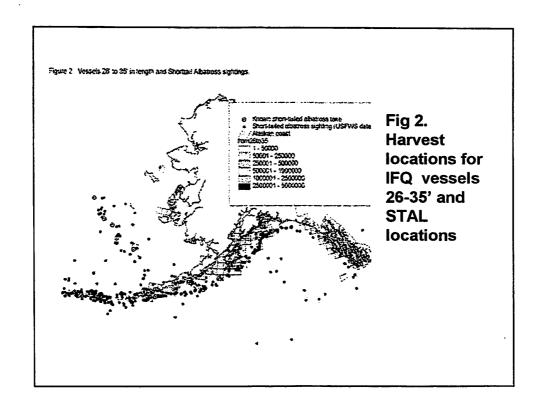


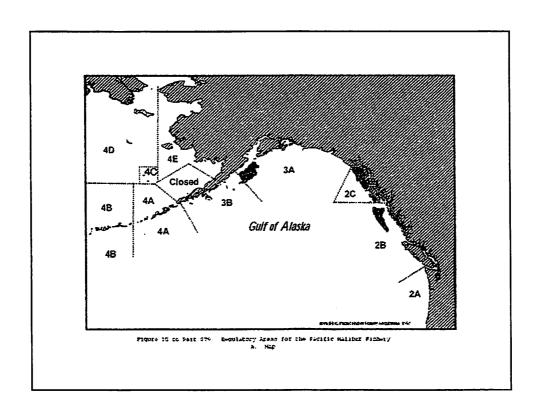
# Revised Alt 4: Modifications from WSGP

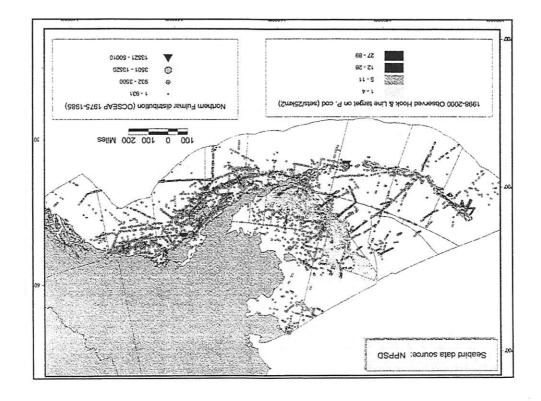
- Vessels < 26' exempt (same as Alt 1)</li>
- Sink baited hooks (same as Alt 1)
- Prohibit directed discharge of residual bait or offal from stern while setting (same as Alt 3)
- Remove embedded hooks (same as Alt 2)
- Line requirement dependent on vessel size, gear, area
- Performance & material standards required
- Avoidance measures must be onboard
- Available for inspection, upon request
- · Spare replacement bird line must be onboard
- Option for exemption of <32ft vessels in certain areas</li>

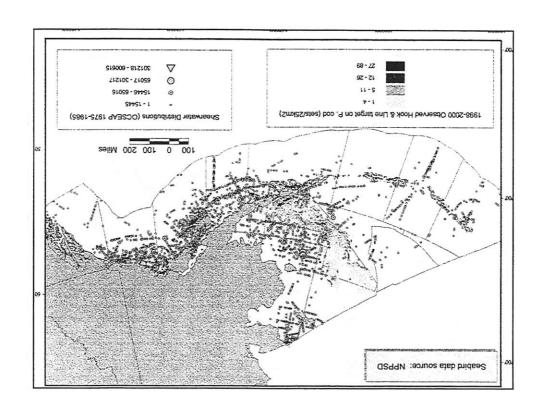
### **ALT. 4 OPTION---EXEMPTION**

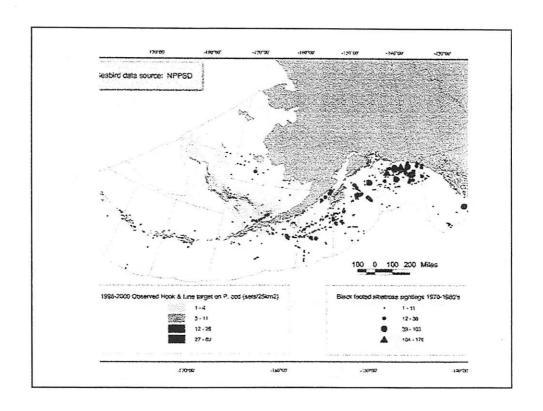
- Vessels <32 ft fishing for halibut in 4E</li>
- Also apply to vessels <32 ft fishing in:</li>
  - Prince William Sound
  - Southeast Inside District
  - Cook Inlet

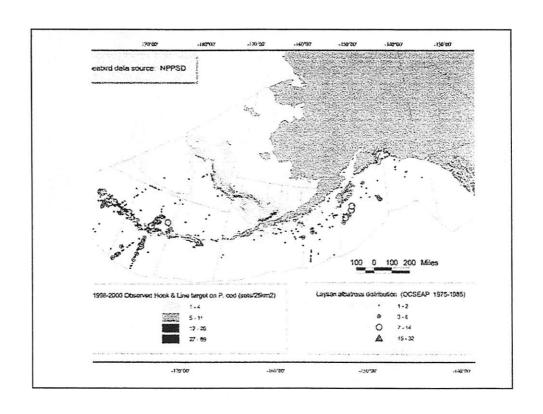








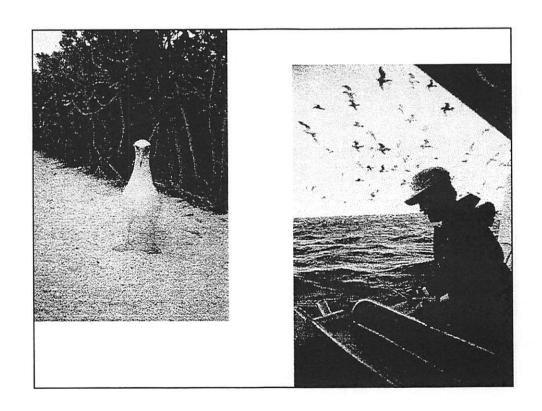




## **USFWS ESA BiOp Summaries**

- 'No jeopardy'
- · Must use seabird avoidance
- · Must evaluate measures
- · Must revise if warranted
- ITS is 4 birds/2 yrs, gf and 2 birds/ 2 yrs, halibut
- Fishers protected if fishing under ITS
- If ITS is exceeded, fishery could close
- Next BiOp will include performance standards





#### · Discuss monitoring & enforcement issues

- With particular reference to performance standards
- Role of observers
- Ability to release observer data for use by industry
- Sections 3.4.4 (p37) & 4.1.4 (p62)
- Observer monitoring of set
- Observer Cadre & outreach
- Enforcement procedures & policies
- Development of Summary Settlement Schedule
- WSGP, Ed Melvin
- USFWS, Greg Balogh/Tony DeGange
- NMFS Groundfish Observer Program, Shannon Fitzgerald
- NMFS Enforcement

#### Alaska Longline Fishermen's Associations 403 Lincoln, Ste. 237 Sitka, AK 99835

December 1, 2001

Dear Members of the Council,

On behalf of the Alaska Longline Fishermen's Association (ALFA), I would like to submit the following comments on the Seabird Avoidance Measures being finalized by the Council at this meeting.

ALFA members recognize the importance of preventing incidental hooking of seabirds, particularly endangered species such as short-tailed albatross. We have willingly worked with Fish and Wildlife to craft regulations that prevent such problems while allowing the fleet to operate safely and efficiently. We will continue to do so, but believe the Council is currently extending regulations to smaller vessels that are untested and potentially unworkable. In particular, I am referring to requirements that vessels over 45 feet deploy two streamer lines, and the establishment of performance standards as requirements, rather than guidelines on thesse vessels. ALFA considers these two regulations unworkable for reasons described below.

Many of the halibut vessels in the 26-60 feet category are little more than large skiffs or at best, small troller/longliners. These vessels set slowly and deployed gear close to the water, resulting in significantly less time with bait on the surface than is the case on larger vessels. The small vessels also tend to have a narrow beam, and little or no superstructure from which to deploy streamers. While one streamer line may be workable, two would certainly tangle and be hooked by the gear, posing a safety problem and possibly resulting in gear loss. We would like to remind the Council that the studies conducted to determine appropriate measures were all conducted on boats over 60 feet, despite frequent requests from members of the small boat fleet for tests on vessels more characteristic of Alaska's halibut fleet. Consequently the proposed measures are appropriate for the pacific cod and schooner fleet, but are untested and potentially both unworkable for the smaller boat fleet. For these reasons, ALFA requests that the Council require vessels under 60 feet to deploy a single streamer line in conjunction with one other measure—e.g., weighted gear. If 60 feet is too lenient, then members would accept 55 feet as the upper limit. Members believe this adjustment to the proposed regulations could be made without jeopardizing seabird populations.

Additionally, ALFA requests that the performance standards for deployment of streamer lines be guidelines, rather than requirements for vessels under 60 feet for reasons similar to those described above. The WSGP report proposed different performance standards for vessels greater than 100 feet and vessels 60 to 100 feet based on testing. As noted above, there has been no testing of the performance standard on vessels less than 60 feet. The smaller vessels may not be capable of safely pulling a streamer line out of the water for the proposed 130 feet. Establishing the performance standard as guidelines for these vessels, will allow time for the testing and modification of these devices.

In closing, ALFA requests that the Council bear in mind the diversity of Alaska's longline fleet. This diversity effects both the likelihood of vessels hooking seabirds, with smaller vessels far less likely to pose a threat, and the ability of vessels to deploy avoidance devices. ALFA members maintain that the accommodations for small vessels requested above can be accomplished without jeopardizing in any way the continued recovery of short-tailed albatross, or the continued abundance of North Pacific seabird populations.

Thank you for the opportunity to comment.

Sincerely,

Terry Perensovich (ALFA Board)

November 29, 2001

Mr. David Benton, Chairman North Pacific Fishery Management Council 605 West 4<sup>th</sup> Avenue, Suite 306 Anchorage, AK 99501

Dear Mr. Benton,

This letter is to provide further enforcement input to the proposed seabird avoidance measures. NMFS Office for Law Enforcement shares the same two concerns with the fishing industry; fairness and consistency. We all recognize the need to have regulations which are beneficial to the resource, easy to understand, and are acceptable to the industry. I was impressed by the amount of research that was conducted by the Washington Sea Grant Program and the associated coordination with the U.S. Fish & Wildlife Service, NMFS Protected Resources, and the fishing industry to test various avoidance measures. I support the objective of these proposed measures being required by regulation. Without these measures in regulation, they are not enforceable.

One concern I have heard is about observers writing affidavits documenting what may be considered minor violations of the avoidance requirements. I would like to reiterate what I discussed with the AP at the October meeting about this. Observer affidavits are only a starting point to an enforcement action; observers do not write tickets. Once our special agents receive an affidavit, they investigate the alleged offense by further interviewing the observer and interviewing the vessel operator and crew members and taking into account any mitigating circumstances.

Another concern is consistency. I am proposing that Protected Resources, NOAA General Counsel, U.S. Fish & Wildlife Service, and I work on a Summary Settlement Schedule for these measures. This would allow NMFS agents and the Coast Guard to handle any cases in a consistent manner. The range of penalties may range from warnings to cases being referred to General Counsel. For example, taking an extra minute or so to set the second streamer line may be a warning, whereas failure to set the lines at all may be a case referred to General Counsel for a substantial penalty. There are probably degrees of non-compliance between these two extremes which may result in various levels of fines, dependent upon the severity of the infraction.



Through training of the observers, outreach to the industry, establishing a reasonable summary settlement penalty schedule, and careful monitoring and oversight of documented violations, I believe the proposed seabird avoidance measures can be adequately enforced without placing an undue burden on the fishing vessels.

Sincerely,

Jeff Passer

Special Agent in Charge

NOAA/NMFS Office for Law Enforcement

Alaska Enforcement Division

Derry Merrigan C-3, 2/0,

## Recommendations on Seabird Avoidance Measures

Adopt AP motion with the following changes and considerations:

- 1.) Performance Standards as Guidelines: The proposed standards will put longliners in violation even if the vessels are able to operate generally in compliance with the intent of the regulations. The 90 second rule, the wind sea-state rule, the airborne streamer rule (60m, 40m, 20m respectively) and the distance off the groundline rule are all goals for vessels to achieve. There will not be complete compliance but rather variance in performance around these goals. Variance around a goal is a violation. These standards are better suited as guidelines than as regulations.
- 2.) Council Intent on Enforcement of Performance Standards: Whether as guidelines or regulations, Council intent as to enforcement needs to be clear and incorporated into the motion. EA, p.63 states, "... it is likely that minor variations from the objective performance standards may not warrant an enforcement action. More blatant, intentional, modifications, or omissions could justify an enforcement action." Recommend enforcement and observers work cooperatively with vessel operators by using education and warnings prior to citations.
- 3.) New Innovation: The EA recommends encouraging the fleet in the development of designs and technologies that eliminate the need to use streamer lines. Current permit process inhibits such innovation from the fleet.
- **4.) Reporting Form:** AP motion, p. 7. Change last paragraph to "The Council recommends industry develop a seabird avoidance incident reporting form for industry use when there is question or dispute on compliance with performance standards."

#### **ESA Considerations**

- The proposed regulations are not RPAs. There is not a jeopardy finding for these fisheries in regards to the short-tailed albatross (STA). Currently, there is an incidental take permit in place for both fisheries (halibut and groundfish). A Biological Opinion was issued in 1989 and amended in 1995, 1997, and 1999.
- Alaskan fisheries did not cause the species to be endangered nor are these fisheries likely to cause jeopardy. The PSEIS states that "Preliminary information from a population model indicates that the STA population could have a realized a 0.2% higher survival rate if incidental take in the fisheries had not occurred from 1980 to 1989."
- The STA population is 1500 and increasing at a rate of 7-8% annually. Egg and chick counts are also increasing.
- The longline fleet has been successful in reducing bycatch rates. From 1998 to 2001, the overall seabird bycatch rate has been reduced -74% in the freezer longline fleet under the existing regulations and guidelines (Table 17, EA).

The Council should make amendments to the action if appropriate. Given the above considerations, if the Council chose to amend Alternative 4 in regard to performance standards, it seems highly unlikely that this would be sufficient to put the Biological Opinion and Incidental Take Statement in question. The proposed action would still be considerably more stringent than existing regulations which have resulted in a -74% reduction in bycatch rate. The proposed increased gear requirements and mandated use by vessel type is a large jump from the present regulations. With those requirements, it is not evident that performance standards in regulation are a necessary portion of the package.

### <u>Draft: Council Intent on Seabird Regulations and Performance</u> <u>Standards</u> (reference p. 63 of the EA)

The intent of the performance standards is to ensure correct use of the seabird avoidance devices. The Council recognizes that it is likely that variation from the objective performance standards will occur in the normal course of fishing operations. The Council also recognizes that many of the objective performance standards will be measured subjectively by enforcement personnel and observers.

The Council recommends that enforcement personnel and observers work cooperatively with vessel operators to ensure compliance with the performance standards by using education and warnings (to the extent practicable) prior to issuing a citation or an affidavit attesting to non-compliance of performance standards.

The Council recommends that enforcement and observers take the following into consideration in evaluation of compliance with performance standards:

- Given the context and setting, it is likely that minor variations from the objective performance standards may not warrant an enforcement action.
- More blatant, intentional, and egregious violations could justify an enforcement action.

These considerations are to apply to the 90 second rule, the wind-sea state condition rule, the performance standards for airborne streamer distance, and distance off the groundline.

THORN SMITH C-3 12/01

# SEABIRD AVOIDANCE GEAR PERFORMANCE STANDARDS INCIDENT REPORTING FORM

Da. '

SECTION 1 - GENER	AL INFORMATION				pg. i
VESSEL N	AME:		DATE:		
ADF&G #:			TIME:		
FFP#:			CRUISE #:		
LOCATION	<b>l:</b>				
(LAT. X LO	NG.)				
NAME OF I	MASTER:				
MASTER N	IOTIFIED?:	YES	NO		
SECTION 2 - ELEMEN	NTS OF PERFORMANCE	STANDARI	INCIDENT		
	F INCIDENT:				
	Material Standard (spec	:ify):			
	Deployment of First Line	9		•	
	Deployment of Second I	Line			
	Length of Streamer Line	Deployment	in Air	ft.	
	Other (specify):				
SECTION 3 - CONDITI	IONS				<del></del>
	ITIONS / WAVE HEIGHT	<del></del> -			
WIND:	MONO? WAVE HEIGHT	•			
	Speed:				
	Direction:				
NAVIGATIO	N INFORMATION:				
	Vessel Course:				
	Vessel Speed:				•
WEATHER	(mark all that apply):				
	Clear				
	Rain				İ
	Snow / Sleet				
	Ice				i
	Freezing Spray				
· —	Fog				
	Other (specify):				
TIME:	Daylight	Twilig	ght	Night	
VISIBILITY:	Good	Fair		Poor	
AIR TEMPER	RATURE:				

(Additional Comments - Description of Incident on back of form)

## SEABIRD AVOIDANCE GEAR PERFORMANCE STANDARDS INCIDENT REPORTING FORM

pg. 2

SECTION 4 - ADDITIONAL COMMENTS - DESCRIPTION OF INCIDENT	
(Describe how incident occurred, details of incident, and recommendations for corrective measures)	
	•
SECTION 5 - ADDITIONAL COMMENTS - CORRECTIVE ACTION TAKEN	
VEVIIVI V ADDITIONAL COMMENTO CORRECTIVE ACTION TAXEN	
(Describe the corrective actions taken by vessel and crew in response to incident)	