

UPDATE ON FISHERY MANAGEMENT PLAN DEVELOPMENT

Situation: The Highly Migratory Species Plan Development Team (HMSPDT) continues to make progress in developing the highly migratory species (HMS) fishery management plan. A report summarizing their most recent work is included herein (Exhibit G.1.a). The HMSPDT last met in September 2000, and will hold its next meeting November 14-16, 2000 in La Jolla, California.

Numerous public comment letters were received and are included herein (Exhibit G.1.b). Form-letters made up the bulk of this correspondence, when multiple copies of the same letter were received, a single copy of the letter is included with a notation describing the total amount received. This correspondence focuses solely on the subject of pelagic longline gear, and includes two lengthy analytical papers and many brief letters. The majority of the comments are in opposition to the use of pelagic longline gear in the West Coast HMS fishery. As of October 16, 2000, the Council received approximately 1,083 letters that oppose the use pelagic longline gear and 1 in support of this proposal; this is in addition to the approximately 3,000 opposition letters (the bulk of which were also form-letters) received prior to the September 2000 Council meeting.

Council Action: None.

Reference Materials:

1. Exhibit G.1.a, HMSPDT Report.
2. Exhibit G.1.b, Public Comment.

PFMC
10/17/00

Meeting Summary
Highly Migratory Species Plan Development Team
Pacific Fishery Management Council
La Jolla, CA
September 26-28, 2000

Team members present:

David Au, NMFS, La Jolla, CA
Norm Bartoo, NMFS, La Jolla, CA
Steve Crooke, CDFG, Long Beach, CA
Sam Herrick, NMFS, La Jolla, CA
Jean McCrae, ODFW, Newport, OR
Michele Robinson, WDFW, Montesano, WA
Susan Smith, NMFS, La Jolla, CA
Dale Squires, NMFS, La Jolla, CA

Also attending:

Svein Fougner, NMFS, Long Beach, CA
Michelle Zetwo, NMFS Enforcement
LCDR Dave Hoover, Coast Guard, Seattle, WA
Ray Conser, NMFS, La Jolla, CA
Chris Boggs, NMFS, Honolulu, HI
Larry Six, NMFS consultant, Portland, OR
Al Coan, NMFS, La Jolla, CA
Donna Dealy, NMFS, La Jolla, CA
John Hunter, NMFS, La Jolla, CA

Members of the public attending one or more days:

Steve Joner, Makah Tribe, Neah Bay, WA
Charles Peterson, Makah Tribe, Neah Bay, WA
Bob Osborn, United Anglers of Southern California
Chuck Janisse, FISH
Liz Lauck, Wildlife Conservation Society
Andy Oliver, World Wildlife Fund
Russell Nelson, The Billfish Foundation, Ft. Lauderdale, FL
John La Grange, American Fisherman's Research Foundation
Scott Eckert, Hubbs Sea World Research Institute, San Diego, CA
Rich Hamilton, Marlin Club of San Diego, RFA, Billfish Foundation, United Anglers,
IGFA
Michael Domeier, PIER, Oceanside, CA
Peter Flournoy, HMSAS, AFRF
Wayne Heikkila, WFOA/AFRF
Heidi Dewar, PIER
Tim Athens, fisherman
Patricia Rojo Diaz, Mexican National Fishery Institute (INP)
Tom Raftican, United Anglers of Southern California

Approval of Agenda

The agenda for Wednesday was revised to allow the Team to spend most of that day compiling sections of

the FMP, and to identify issues and options. The agenda item on data issues was abbreviated, and discussion of the species list and regulations were deferred until the November Team meeting.

Review of Process to Date

Participants reported on the recent meetings of the Council, HMS Advisory Subpanel, IATTC and MHLG.

Progress Reports and Presentations

1. Stock Status and Management Control Rules

David Au distributed updated preliminary drafts of 2 documents for Team review: "Stock Status and Estimates of Biological Reference Points for Highly Migratory Species" and "Management Control Rules for Highly Migratory Species." (The first document will become FMP section 3.3, Status of Management Unit Stocks, and the second document will become section 3.2, Overfishing Criteria.). Control rules specify how a fishery will be managed when overfishing is occurring or when a stock is determined to be overfished. Overfishing occurs when fishing mortality (F) exceeds the maximum fishing mortality threshold (MFMT). A stock is overfished when the biomass falls below a specified threshold (minimum stock size threshold or MSST). The Team is proposing to use control rules consistent with those adopted by the Western Pacific Fishery Management Council.

There was considerable discussion about the applicability of overfishing rules to highly migratory species. In most cases, unilateral U.S. action to control harvest cannot prevent overfishing of the stocks, since a small fraction of the total harvest is taken by U.S. fishers. In the Atlantic FMP, for stocks that are managed by ICCAT, the overfishing rules take the form of policy recommendations from the U.S. to ICCAT. In the Western Pacific, similar language is being considered. The Team proposes that for tunas, billfishes, mako shark and blue shark, the control rules be in the form of a policy recommendation to international forums. For the thresher shark species, the control rules may call for Council/NMFS action, since these species have more "local" distributions. The Team will evaluate the need for conservation measures for domestic fisheries for thresher sharks. It was noted that the control rule for sharks as proposed would be more conservative because the MSST is based on the estimate of natural mortality. The Council could also set a conservative optimum yield level for thresher sharks as a precautionary measure. Other measures such as time/area closures may be appropriate. David Au and Susan Smith will report back to the Team on control rules for thresher sharks.

Table 2 of the draft control rules document includes estimates of sustainable catch levels for the Pacific Council area., which are based on the regional catch fraction for each stock multiplied by the MSY estimate or the maximum recent annual total catch level. Concerns were raised about establishing local area harvest limits. The stocks are generally thought to be healthy at this time. Setting regional limits goes beyond the requirements and may unnecessarily restrict U.S. fishing opportunity. The Western Pacific Council is opposed to setting limits, and there is no evidence that the local fisheries in the Western Pacific have an impact on the stocks or catches.

Commenters also recommended that Table 2 include estimates of sport catch and that landings data be expanded to include catches (including transshipments).

2. Monitoring Index for Species Not in the Management Unit

Susan Smith presented a draft proposal for a system for periodically monitoring non-management unit fish species taken in HMS fisheries. Each species would be rated according to 12 factors divided into 4 categories: 1) biological/ecological characteristics, 2) abundance and distributional characteristics, 3) fisheries characteristics, and 4) economic characteristics. In general, a low rating represents the lowest fishing impact/economic value and the highest stock resiliency; a high rating indicates the highest fishery impact and lowest resiliency. A significant shift in the index triggers a closer examination of the possible

causes of the change. Each year the index would be recalculated and reported in the annual SAFE report.

There was mixed sentiment regarding this proposal. Both supportive and critical comments were offered. Supporters liked the idea of a simple, inexpensive way of monitoring the status of associated species which also could serve as a tool to set research priorities. Criticisms included:

- the summing of individual category ratings to get a total index is misleading and inappropriate. It may be best to leave the information disaggregated. (Response: the intent is to retain the disaggregated information; agree to not use the term "index.")
- this could create a substantial work load each year for the Team. (Response: will not be difficult to update the matrix.)
- the use of somewhat subjective ratings, instead of using actual information when it is available (e.g., age at maturity, price) degrades the information provided. (Response: requiring exact information means that there will be no information at all in many instances.)
- if this index were used to trigger a management action, then each number would have to be justified. The ratings would need to be less subjective or qualitative. (Response: it's easier to defend broad categories than exact numbers; there is no intent to trigger management actions but rather a more in-depth review of any species which exhibits substantial change in one or more factors.)

The Team decided to proceed with completion of the monitoring matrix, but the term "index" would not be used. The FMP will contain a brief, generic reference to the monitoring matrix in section 3.4.

3. Workshop on MSY and Overfishing Definitions

Chris Boggs reported on the recent workshop in Florida. There was no clarification or consensus on any MSY estimation method that might be useful in this process. The workshop did not address HMS fisheries specifically.

4. CPUE Indices for Swordfish and Shark

Chuck Janisse stated that there needs to be a way of separating swordfish trips from shark trips in the CPUE analysis for thresher shark. David Au explained that separation is not possible with the existing data.

5. Shared Stocks

The Team reviewed a document prepared by Dave Holts briefly describing the distribution of stocks in the management unit. It was agreed that this summary would be a useful addition to section 3.1.1. Michele Robinson and Susan Smith will review this document to make sure it is consistent with descriptions included in the EFH sections.

6. Performance Standards

Andy Oliver recommended that the Team include an option in the FMP that would establish performance standards to reduce and minimize bycatch.

7. Sea Turtle Stamps

Representatives of the driftnet fishery have raised the idea of establishing a stamp program to raise funds

for sea turtle programs. There is some concern about the legality of such a program under federal law. Svein Fougner agreed to ask NOAA General Counsel about it. The industry will also pursue the option of a state program.

Bycatch

There was little progress to report on this issue.

Data Issues

Brief status reports were provided on economic data collection surveys, PacFIN and RecFIN. Dale Squires reported that additional programming help is available to help assemble recreational data for the FMP. Al Coan distributed a document describing the Interim Scientific Committee, a multi-lateral scientific group in the north Pacific. This document will be used for FMP section 1.5.9.

Species (Data Collection)

This item was deferred to the next meeting.

Regulations

This item was deferred to the next meeting.

Compilation of FMP Sections

Copies of all FMP sections drafted to date were distributed and assembled. Team members are to review each section and provide comments to the authors by October 16. Authors are to revise their sections and provide updated electronic copies to Larry Six by October 27. Larry Six will compile the sections and have copies made for the November 14-16 Team meeting. All descriptive sections should be completed for the November meeting, to the extent possible.

Issues and Options (FMP Chapters 6 and 7)

The Team compiled a list of issues for which options have been identified to date:

- Species in the management unit
 - 5 options (with a preferred option)
- Gear authorized
 - 1. Status quo
 - 2. Longline (various options; see longline section below)
- Shark finning
 - 1. Fins only (WP FMP)
 - 2. Fins with carcass
 - a. Team option (bag fins and attach to carcass)
 - b. Subpanel option (max. 4 fins x #carcasses)
 - 3. Status quo (no finning)

- Consistency of state regulations
 1. Subpanel recommendations
- Logbooks
 1. Status quo
 2. Uniform federal logbooks for each gear (including charter)
 3. Electronic logs
- Licenses/permits (including vessel registry)
 1. Gear-specific permits (not limited entry)
- Limited Entry
 1. Status quo
 2. Open access
 3. Limited entry by gear (address after FMP implementation)
- Bag limits
 1. Status quo
 2. Request states adopt new limits
 3. Federal bag limits
- Prohibited species
 1. Status quo
 2. White shark, basking shark, megamouth shark prohibited coastwide (Pacific salmon, Pacific halibut and Dungeness crab continue to be prohibited)

Additional issues were identified as follows. Team and Subpanel members and other interested persons should bring lists of issues and options to the November Team meeting.

- Bycatch (and observers)
- Vessel monitoring system
- Striped marlin
- Fishing opportunities for recreational and commercial
- EFH protection
- Shark conservation
- Recreational catch and release
- Protected species conservation
- Alternatives when MSYs and data are unavailable

The Team also developed a preliminary list of research and data needs:

1. Recreational economic data
2. Recreational catch and effort data
3. U.S./Canada albacore data sharing
4. U.S./Mexico data sharing and collaborative research on HMS and straddling stocks

5. Biological data
6. Stock assessment data
7. Marlin migration information

Longline Analysis

The Team discussed the Dupuy/Janisse longline proposal presented at the July Team meeting, as modified by the addendum presented at the September Subpanel meeting. The proposal as modified would limit boat size, limit participation to 20 boats the first year and establish eligibility criteria. The proposal would require inclusion of a federal limited entry program in the FMP. Eligibility for permits is limited to owners of California and Oregon driftnet permits; the legality or propriety of limiting participation to this group was questioned. Other groups may be interested in participating, including longliners currently fishing outside the EEZ and landing on the west coast and former participants in the experimental shark fishery. Chuck Janisse explained that the idea is to convert some driftnet effort to a longline fishery, without increasing effort, and to reduce impacts on protected species.

The Team discussed an alternative approach which would use the exempted (experimental) fishing permit process to collect needed information on a longline fishery in the EEZ, prior to a decision to authorize (or not authorize) the fishery.

Commercial fisherman Tim Athens presented a proposal for a longline fishery targeting mako and thresher sharks using heavy stainless steel gear and large hooks. The gear would fish near the surface in the daytime inside 50 miles. This would be a limited entry fishery with time/area closures. This is a completely different longline fishery than the one targeting swordfish and tuna, and is not intended to replace that fishery.

Longline fishery options include the following:

1. Status quo (different regulations in each state) (could consider setting regulations consistent with the Western Pacific under this option)
2. Dupuy/Janisse proposal for a swordfish/tuna longline fishery in the EEZ
3. Hamilton proposal for a limited swordfish/tuna longline fishery outside the EEZ with restrictions
4. Athens proposal for a directed shark longline fishery inside 50 miles (distinct from other options)
5. Experimental fishery for swordfish/tuna in the EEZ (without impacting the fishery outside the EEZ)

The Team developed the following list of sub-options which could be applied to any longline fishery in the EEZ:

- observer requirements
- logbooks
- VMS
- limited entry (# participants, eligibility requirements, transferability, etc.)
- duration
- fishing capacity
- outside EEZ issues
- time/area closures

The Team concluded that there is insufficient information available to evaluate a swordfish/tuna longline fishery in the EEZ and that an experimental fishery offers a way to collect the desired information. There may be sufficient information to evaluate a directed shark longline fishery, but the Team has not assessed the quantity and quality of this information. The shark fishery proposal needs to be evaluated and considered separately from the other proposals. There is no intent to impact the existing longline fishery

outside the EEZ. The consistency of west coast longline measures with Western Pacific measures is a separate issue which will be addressed. The Team will present longline options to the Council in a general way. Michele Robinson will draft a Team statement on the longline issue for the November Council meeting and send it to the Team for review.

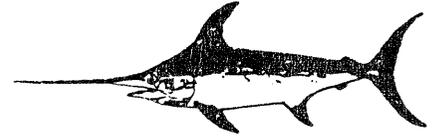
Schedule

The Team meeting schedule is revised as follows:

November 14-16, 2000	La Jolla
February 5-9, 2001	La Jolla
March 12-16	La Jolla

Ocean Pacific Seafood

18212 Rosita St.
Tarzana, CA 91356
(818) 343-9927
Fax (818) 881-5003



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PFMC

September 25, 2000

Jim Lone, Chair
Pacific Fishery Management Council
2130 SW Fifth Ave., Suite 224
Portland, OR 97201

Dear Jim,

The package of public comment letters received by the Council last month, that relate to my proposal for the institution of a more structured west coast pelagic longline fishery for HMS than currently exists, included a letter from Bill Shedd, President of AFTCO Mfg. Co., dated July 12, 2000 (see Attachments A, B, & C). In his letter, Mr. Shedd referenced a report authored by Greg Walls, which is cited to have been the basis for a unanimous decision by the California Fish & Game Commission in 1992 to deny a proposal to conduct an experimental pelagic longline fishery off California at that time. Mr. Shedd asserts that the "findings of fact" and the "reasons for denial of experimental longline permits" are valid today, and have grown stronger in the 8 years since the Commission ruled to deny an experimental pelagic longline permit.

Aware that the Council has directed the HMS FMP development team to analyze the inclusion of a pelagic longline fishery as part of the HMS FMP's regulatory structure, and that the plan team is scheduled to begin considerations for an analytical framework, and the identification of data needs and information at its September 28 meeting, it occurred to me that the above referenced "Walls Report" needed a fresh review because of the historic position that it has played regarding this fishery.

For my own information, as well as to contribute to the plan team's analysis of this issue, I asked an acquaintance, Dr. Frank Hester, a former NMFS biologist and director of the Honolulu Lab, to review Mr. Shedd's letter, findings of fact, and the Wall Report. For the Council's information and review, I attach a copy of Dr. Hester's review, as well as some informal comments he made regarding this issue. I will also distribute copies of Dr. Hester's review and comments to the plan team. Regardless of the fact, as stated by Dr. Hester, that his review is a quick look at the issues and conclusions contained in the Wall Report, I believe it will provide the Council with a fuller understanding of the issues, and help focus the plan team's identification of detailed alternatives, and the selection of a preferred alternative.

Best Regards,

A handwritten signature in black ink, appearing to read "Pete Dupuy". The signature is written in a cursive, somewhat stylized script.

Pete Dupuy

Review the Summaries on Pelagic Longlining from the October 2, 1992 CF&G Commission Hearing on a Proposal for an Experimental Longline Fishery off California, and collateral material, as they relate to the July 14, 2000 Dupuy/Janisse longline proposal.

Prepared by Frank Hester, Ph.D. (Marine Biology)
September 16, 2000

I. Material Reviewed:

1. Wall, G. 1992. Report on proposed use of longline gear to take swordfish and tuna in California. (Apparently) An unpublished and unreviewed report prepared for the Commission by the Department. 34 p. (Attachment A)
2. Anon. Undated ms but evidently prepared for the subject hearing 1992, and appended to 2 (supra). Findings of Fact. 3 typewritten pages. (Attachment B)
3. United Anglers of S. Calif. Undated ms, but evidently prepared for the subject hearing in 1992. Reasons for denial of experimental longline permits. 3 typewritten pages. (Attachment C)

II. Reviews:

1. The Wall Report:

The Report was prepared for the information of the California Fish & Game Commission. As such, the time available was undoubtedly short, and there probably was no time to seek outside review. The literature of that date was quite limited as to geographic region, as longline fishing has not been conducted to any degree in the US EEZ off California. Therefore, many of the conclusions in this report are necessarily drawn from longline fisheries in other areas.

The Walls Report is in two sections: Section A is a review of regional longline fisheries. This review is necessarily limited for the reason given above. Section B is a summary of issues relevant to the proposal then under consideration.

A. Regional Longline Fisheries:

The first section (3.1) of the Walls report is titled "Longline History in California," but in reality includes several fishing reports from areas well outside the area of interest. Evidently the original reports were not consulted as the summaries given mostly do not report the actual areas fished or the numbers of hooks set and species caught. The only reports truly relevant to the Dupuy/Janisse proposal are the 1968 NMFS trip off S. California and the 1987 F/V Tiffany Vance experiment. I could not find the citations to these cruise reports in the bibliography, presumably they exist, and might be worth

consulting as the summary information provided in Wall is incomplete as to details such as numbers of sets, areas and catches.

The other longline fishing data in the waters off California were not directed at tuna and swordfish, and therefore are likely irrelevant to the proposal. The complete data including unobserved sets from logbooks might be worth reviewing, but the gear type and fishing strategy was undoubtedly not the same as would be used in the Dupuy/Janisse proposal. The only facts that do emerge from the available data are that blue sharks are commonly caught, and that no marlin (black, blue or striped) were taken. Catch rates for swordfish by F/V Tiffany Vance seem to have been about one percent, which is not bad. The 1968 NMFS cruise off California did not produce commercially viable catches.

The remainder of the section on Regional Histories is of little relevance to the Dupuy/Janisse (or the past) proposals. This is because they deal with topical fisheries where conditions and species complexes are quite different. The value of these comparisons to assessing the Dupuy/Janisse proposal, as reported, is questionable.

B. Summary of Issues:

The Wall Report identifies 8 Issues, all of which are relevant to the Dupuy/Janisse proposal. They are:

i) Marlin by-catch:

This is the major political issue for the recreational fishing interests; and undoubtedly the main reason longline fishing has not been allowed by California. However, from the little data available this is a chimera. No marlin of any species have been taken in the few longline sets so far conducted in the area of concern. This does not mean that they will not be taken, but it is indicative that the take is likely to be very low. The only way I can think of to resolve the issue is to fish and see if catches are high enough to be a concern. In any case, during the course of this fishery, it would be nice if any marlin taken dead could be utilized by one of the food banks rather than be wasted as regulatory discards. Marlin by-catch in general, is a management issue that needs to be addressed as an international management matter. Clearly the fish are at least an eastern Pacific stock that will continue to be taken by other nations.

ii) Shark by-catch:

This is a real issue for concern. However, the concern is one of public perception and utilization, rather than depletion, as the main species likely to be taken will be blue sharks. The information given by Wall lumps sharks together as though they all share the same biological parameters. Blue sharks have a much higher reproductive potential, and can sustain a higher fishing mortality rate than most species that are cited as, "... have a slow reproductive rates, and are susceptible to overfishing: they cannot withstand high fishery pressures and even incidental take may harm their population structure and abundance

levels... ” The solution to this problem lies in utilizing the by-catch, if possible. It may be biologically permissible to discard all the catch, but if dead sharks are discarded, and catches rates are high, this is likely to be politically unacceptable. The true catch rates cannot be determined in advance, and data need to be developed. It may prove out that the discard rates will be low enough to be acceptable.

iii) Swordfish resource:

Swordfish, like marlin, are a highseas resource, and the California catches come from a stock that is fished by many nations. Management is not something that can be done by California. The concerns raised by Wall over the take of small fish come mainly from fisheries in tropical waters where young fish are more common. Whether or not small fish occur subsurface off California, and will be taken, will be answered only by fishing. No size data are given by Wall. Some information is available and should be reviewed.

iv) By-catch of other species:

The information provided in Wall suggests by-catch of other species will be low. The marine mammal and turtle by-catch in Wall came from a different fishery than the Dupuy/Janisse proposal (and all were released alive). What will be interesting to determine is how the by-catch from tuna/swordfish longline fishing compares with that from large-mesh driftnets. Again this can only be determined by fishing.

v) Economic impact:

Wall (indirectly) makes the point that longline fishing is the only effective way to take large pelagic tunas. The Dupuy/Janisse proposal aims at developing a fishery that would take large bluefin tuna and swordfish, which sound attractive and might prove economically viable. Therefore, it is not clear to me why Wall then (even though bluefin were not specifically mentioned) suggested that the proposed fishery then, or now, would result in, “... no net benefit to the state.” He seems to base this conclusion on the proposition that the fishery would have a major effect on the abundance of marlin off California. However, marlin catches seem to be more closely related to sea temperature mediated availability, rather than true abundance. Additionally, the only data he presents indicate no marlin were taken by longline gear in California waters.

It might be useful to review the Squire and Au (1988) paper that relates Japanese longline fishing off southern Baja California with a reduction in recreational catches to see if the conclusions still appear valid, and if the conclusions are relevant to the California fishery. I was puzzled by Wall’s inclusion of the unsupported statement that longline fishing off California as proposed will decrease the Pacific swordfish stock and therefore, “...discourage recreational anglers to spend less money to participate in the recreational fishery (B. Shedd, pers. comm.)” These economic concerns are conjectural, and so far, unsupported by data. But as I stated at the start, these recreational issues are a political chimera that are difficult to quantify without data.

A more serious concern is the statement that the Department of Fish & Game lacks the resources to monitor an experimental fishery. This was a statement from 1992, and may not be relevant for the Dupuy/Janisse proposal; how the PFMC would monitor the fishery is.

vi) Conflict with other commercial fisheries:

I don't have the proposal available that was the reason for the 1992 hearing. The Dupuy/Janisse proposal appears to address the issue in a practical way. I imagine that if the PFMC agrees to allow the fishery it will do so after the usual series of public hearings and the final areas would be decided in that manner, so as to minimize conflicts.

vii) Potential outcomes if permit not granted:

The "cons" given in Wall do not seem to be relevant any longer. The important question seems to be can the PFMP develop a FMP that allows California to forbid landings of fish from the EEZ in California? I don't have that answer.

viii) Observers:

The Wall Report is no longer relevant on this issue, but this is a major issue for most fisheries, and has to be considered in the case of the Dupuy/Janisse proposal. The cost of observer coverage is considerable. How that coverage is designed and who pays the cost are major factors in developing this HMS FMP. I am sure this is a matter that will require considerable thought on your part.

2. Findings of Fact:

This document seems to have been prepared by the recreational side as a statement to the Commission for the 1992 hearing. It reduces the Wall report to three issues that are of concern to their interests: Marlin by-catch, Shark by-catch, and the Swordfish resource. They are directed at Augie Felando's proposal, but are still considered (by them) to be relevant to the Dupuy/Janisse proposal. Their concerns over marlin catches are understandable. This is the driving issue in all the longline bashing by the recreational side globally, and I sympathize with them as there is no doubt that pelagic longlining has affected marlin abundance in the Atlantic and Gulf of Mexico, and may have off the west coast of Mexico. I don't know about Hawaii.

Longline fishing is an anathema for the recreational groups. However, in the California situation, the allocation issue seems to be a resolvable issue if catch rates indeed prove to be as low as the few previous fishing experiments indicate. And I am sure they appreciate this, but are determined to oppose longlining under any conditions nevertheless. This is an emotional position, and cannot be resolved by reason at this stage since the data are sparse. The solution, in part, will be found in the results of conducting this fishery, but

this is a Catch-22 as there can be no results if the fishery does not go forward. The prohibited zoning of the Dupuy/Janisse proposal is sensible, but I am sure the southern end is going to be strongly opposed, and this is likely the area where bluefin may be most available. It may be that these fish will be there at a time that marlin are not, but I don't think we know. The best argument at this time is that the available data show that marlin are not going to be a by-catch problem. Whether or not this will prove out is something you will have to demonstrate, and unless the Dupuy/Janisse proposal goes forward, this will not be determined.

The shark by-catch issue is of secondary interest to the recreational side, but has become a major issue to the environmental NGO's and therefore an issue that has been eagerly seized by the recreational side. The fact that blue sharks are able to withstand a fairly high fishing mortality rate needs to be emphasized. The mako shark issue may not arise if you use mono leaders. Of course, the best solution would be to develop a market for blue sharks.

The swordfish management question is less difficult. I do not think many pups will be taken this far north. I could be wrong, but I would suggest a look at the size information from the previous catches to get an idea. The intention of the Dupuy/Janisse proposal is to limit this fishery to former driftnet boats. This would suggest that effort would shift from the one fishery to the other, which should not, perhaps, result in a major net increase in swordfish mortality. If this results in a decrease in marine mammal interactions, this might be justification for making the change. Overall, however, the management issues are international in scope and whatever is done in the US EEZ is not going to change the impact on the resource in the absence of international agreements.

3. Reasons for denial of experimental longline permits:

This document is a summary of the negative points from the Wall Report. As such it is unbalanced and offers little to the debate. I have commented above on two of the pertinent points: Observer coverage, and the question of whether the Dupuy/Janisse proposal would remove effort from the driftnet fishery and move it to the longline fishery. I suggest the economic argument is not valid with regards the Dupuy/Janisse proposal for reasons given above.

Subj: Wall et al
Date: 9/17/00 12:30:53 PM Pacific Daylight Time
From: FHester52
To: LaPazKD

File: Longlin2.ZIP (16982 bytes)
DL Time (28800 bps): < 1 minute

Chuck/Pete:

I have reviewed the material you sent me. I am attaching it as both a Word 6 and an .RFT file. You should be able to open one of them without difficulty, but if there is a problem let me know and I will send it as a text file. I spell checked the thing, but did not proof it extensively so there may be some mistakes. But I don't want to spend too much time for a hamburger.

I don't know what you will want to do with it. If you need a formal report from me with a better review of the literature, I can do that. But that will take some time and cost you. As it is this was a simple while-flying-and-not-watching-the-movie (to the annoyance of my neighbor) job, for which one of you can buy my wife and I dinner sometime.

You are free to use the thing as it is, of course, but I don't know how much good it will do you. The part on the Wall Report can stand alone, and with minor editing you could cut the rest of my verbiage out. As you know, this is a major allocation fight with the recs joining the so-called environmental NGO's. The rec side's aim is clear enough, they want the US EEZ for themselves, and use the bycatch and stock management issues to justify it. The NGO position is more complex. Some are sincerely concerned over the problems of fisheries including HMS, but many are cynical money grubbers looking for issues they can use to get public support and increase membership. In this they find plenty of support from the media and the recs; they have not yet learned that the latter will turn on them next. Even catch-and-release is a form of torture.

As for the project, I suggest the main thrust might be that this experiment is aimed at determining if longline fishing off California may be an alternative to driftnetting and result in less marine mammal interactions. I don't know if you intend to convert the drift net boats all to longlining, or have two fleets, or allow both gears, perhaps at different times and areas, this is not clear to me in reading the proposal. Nor is it from Pete's addendum. You might give this some more thought and perhaps make this an objective for the experiment. Also, the fact that the longline business is quite different from that of ten-years past could be clarified, particularly with regard to the new interest in bluefin.

A few other points for clarification that will probably have to be considered at some point:

1. What is your position on observer coverage for these boats?
2. How do you feel about including attempting to develop a market for blue sharks as part of the experiment? This is really the only major legitimate concern there is for the right-minded NGO's, and if you can address it, you might gain their support. As you know there is a good market for blue sharks in Mexico and as an export. But whether or not this would be practical for you is what needs to be explored. You could probably get some money from NMFS to do some work, if you wanted to mess around with it.

Frank



MFG. CO., INC. 17351 MURPHY AVENUE • IRVINE, CALIFORNIA 92614

AMERICAN FISHING TACKLE COMPANY

(949) 660-8757 • FAX (949) 660-7067

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October 2, 1992 Ca. Fish & Game Commission Hearing –Pelagic Longline Hearing

PFMC

The old issue of developing an experimental pelagic longline fishery off the California coast is once again being raised. It is surprising that the development of a “new” longline fishery would receive a serious hearing at this time in light of the many economic, environmental, and management problems this gear is known to have recently caused on the East Coast, Gulf Coast, and in Hawaii.

The last major effort to develop a longline fishery in California was almost 8 years ago. On behalf of UASC, our company AFTCO MFG Co Inc., organized and presented the arguments against longlines at that hearing. We became involved in this issue because allowing longlines would certainly jeopardize the jobs of our employees here at AFTCO. Most all those same arguments are not only valid today but are even stronger, because as time has passed the problems and conflicts caused by longlines have become even more evident. Much can be learned by the conclusions drawn at the Commission hearing 8 years ago.

On 10-2-92 the California Fish & Game Commission voted unanimously to reject the request presented by August Felando on behalf of the California commercial fishing industry for experimental gear permits to use longlines to harvest tuna, swordfish and shark for commercial purposes. The hearing contained an exhaustive amount of information regarding the pros and cons of longline fisheries through out the world. At the center of that information was the Walls report produced by Greg Walls, biologist for the California Department of Fish & Game.

The California Fish & Game Commission after reviewing all the information unanimously voted to prevent the establishment of a tuna, swordfish and shark longline fishery off the California coast out to 200 miles. Reasons for denial are summarized in the enclosed copy of the “Findings of Fact” sent to us here at AFTCO by then Commissioner Al Taucher approximately two weeks after the hearing. Al was strongly opposed to allowing a long line fishery to develop off California and he lead the debate within the Commission that lead to denial at the 10-2-92 hearing. He sent me a copy of the “Findings of Fact” and told me he planned to have the Fish & Game Commission adopt it as the basis for their decision at the 10-2-92 hearing. The three page document summarizes the three main concerns that the Commission had with long lines. Those were 1) Marlin –by-catch, 2) Shark-by-catch, 3) The swordfish resource.

In addition to the above document developed by Commissioner Al Taucher, also enclosed is a document entitled “Reasons For Denial Of Experimental Longline Permits.” These arguments presented at the 10-2-92 hearing are still valid today and in the last 8 years the case against longlines has only grown stronger.

Sincerely,

Bill Shedd
President

**REPORT ON
THE PROPOSED USE OF LONGLINE GEAR
TO TAKE SWORDFISH AND TUNA IN CALIFORNIA**

**Greg Walls
California Department of Fish and Game**

September 1992

ATTACHMENT A

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SECTION 1.0

EXECUTIVE SUMMARY

A group of commercial fishermen has requested experimental gear permits for the use of drift longlines to take tuna and swordfish. This paper is designed to provide the California Fish and Game Commission with the information necessary to evaluate this request.

The longline has proven to be an efficient gear for the harvest of swordfish and tuna throughout the world. Recent improvements in the gear, setting strategies, and the increasing demand for high quality swordfish and tuna make the use of this type of gear attractive.

However, the shark by-catch associated with the use of longline gear is likely to be as great or greater than the swordfish catch. This has proven to be the case in longline fisheries throughout the world. Many scientists feel that sharks cannot withstand high fishing pressures because sharks are slow to mature and do not have many young.

In addition, swordfish landings in California have been in decline for the past five years. Population estimates for Pacific swordfish stocks are not conclusive, but there are indications that the stocks may be fully utilized at present (Skillman 1989). Other studies suggest that the swordfish stocks are fine (Sakagawa 1989) and could withstand additional fishing.

Finally, the recreational fishery for striped marlin is lucrative and has a long history. In California, striped marlin have been reserved for exclusive sport angler utilization since 1937. The 1988 Atlantic Billfish Fishery Management Plan concluded that the greatest benefit to the nation results from reserving marlin for recreational anglers only. Longlining for swordfish and tuna is not likely to reduce striped marlin stocks given their broad distribution and limited involvement in waters off California. However, any commercial catch of striped marlin may reduce the access of sport anglers to this resource.

SECTION 2.0

INTRODUCTION

This report begins with the histories of longline use in California, Hawaii, the Gulf of Mexico, Mexico, and the U.S. east coast. Also discussed in the report are various issues regarding longline use, along with arguments in favor of (labeled "pro longline") and counter to (labeled "con longline") the proposed experimental longline fishery for swordfish and tuna.

Longline gear consists of a monofilament main line, with multiple leaders attached. Swordfish longlines are typically 25 to 50 miles long, with 25 hooks per mile. The hooks are attached to the mainline by droppers or leaders (also known as branch lines) made of monofilament and baited with squid and a light stick. The droppers are attached when the gear is set and removed when the gear is retrieved. Floats provide buoyancy and regulate fishing depth. The gear is set close to the surface and at night.

Tuna longlines are set during daylight hours and are allowed to fish deep below the thermocline (that portion of the water column where the temperature of the water changes more rapidly with depth than the portions of the water column above and below that area; the thermocline separates the upper, warmer zone from the lower, colder zone). Mackerel is the primary bait and light sticks are not used.

A radio beacon marks one end of the mainline while the other is attached to the boat via the line setter and main spool. The depth at which the hooks are fished is controlled by the length of the dropper and the distance between floats. The greater the space between floats, the more the mainline will sag, and the deeper the hooks will sink.

Longline Regional Histories

SECTION 3.1

LOGLINE HISTORY IN CALIFORNIA

- 1955: California Department of Fish and Game (CDFG) research cruise to Central America to fish longline gear for tuna. The catch was 67.2% shark and billfish. Tuna comprised 17% of the catch.
- 1956: CDFG cruise to Central America. The catch was 62% shark and billfish, and 20% was tuna.
- 1968: NMFS used longline gear in southern California and Baja California, Mexico. Gear was used at night and baited with squid.

In California, 11 sets (3,856 hooks) yielded: 2 swordfish, 0 marlin, 1,530 blue sharks, and 2 mako sharks.

In Baja California, Mexico, 44 sets (29,171 hooks) yielded: 193 swordfish, 1 marlin, 8,642 blue sharks, 16 thresher sharks, 472 hammer head sharks, 19 mako sharks, 3 white tip sharks, 3 black tip sharks, 1,557 assorted sharks, 112 dolphinfish, 2 rays, 2 yellowtail, 2 opah, 2 turtles, and 2 seals.

Blue shark was the most common species taken. Night longlining did not generally take striped marlin.

- 1975: Japanese tuna longliners fished within 200 miles of the west coast. All 49,000 hooks were set in August and December. The recorded catch, based on logs, was 470 albacore, 30 big eye tuna, and 7 swordfish. (No incidental catches were listed.) (Pacific Billfish Fishery Management Plan (FMP) 1981.)
- 1979: Experimental longlining for blue sharks. F/V *JJ* caught blue sharks from 1979 to 1982. Sharks were processed at sea to prevent urea in blood from turning to ammonia and spoiling the meat. Anomalous warm water in 1982 and 1983 displaced blue sharks. F/V *JJ* did not renew its efforts even when the blue sharks returned after 1983. The market demand for blue sharks is not well established.

- 1981: NMFS longlined for albacore 700-900 miles west of San Diego. Laurs et al. (1981) describe part of the by-catch (14 sets with 350 hooks per set): 240 albacore, 1 mako shark, 1 lancetfish, 1 pomfret, 4 stingrays, and 1 opah. Longlines were set at 300-450 feet, and the thermocline was found to be at 300 feet and deeper.
- 1987: Experimental longlining for swordfish north of Pt. Arguello (Santa Barbara County). F/V *TIFFANY VANCE* longlined for 19 days in two locations: 40 miles offshore just north of Pt. Arguello and 100 miles west of Monterey.
- The 400 to 600 hooks per set on 20 to 38 miles of gear yielded: 2,360 blue sharks (95.4% of catch), 78 pelagic stingrays (3.2%), 32 swordfish (1.3%), and 4 big eye thresher sharks (0.1%).
- 1988-91: Experimental longline shark fishery.
- April to November 1988: 10 boats participated.
Catch was 62% blue shark, 29% bonito shark, 8% pelagic ray, 0.1% sea lions, and the rest included sea turtles, giant seabass and hammerhead sharks.
- Blue sharks were often killed for their fins.
(51% returned alive, 30% dead, 19% questionable).
- April to November 1989: 9 boats participated.
Catch was 62.1% blue shark, 28.9% mako shark, 8.7% pelagic ray, 0.1% sea lions, the rest included hammer head sharks and other species.
- May to September 1990: 6 boats participated.
No observer data.
- May to January 1991: 9 boats participated.
No observer data.
- 1992: The experimental longline shark fishery was not reauthorized.

SECTION 3.2

LONGLINING IN HAWAII

Longlining has a long history in Hawaii. The first longline set was made in 1917. Unwritten rules existed between longliners and fishermen using other gear types, such as handline and troll gear. Longliners knew local customs and stayed away from everybody else and conflicts were minimal.

The longline fishery expanded rapidly from 1989-90, with 23 longliners from the U.S. east coast, 60 from the Gulf of Mexico, 18 from the U.S. west coast, and 62 local boats longlining for tuna and swordfish in Hawaii in 1991. In this regard, the newcomers did not know the local customs and proceeded to fish close to shore and in areas utilized by traditional or artisan fishermen. This led to misunderstandings so the Western Pacific Fishery Management Council stepped in and instituted a moratorium on new boat entries to keep more boats from entering the fishery until the full impacts are understood. The moratorium is to remain in effect until 1994.

Swordfish is a very lucrative fishery in Hawaii, but did not gain prominence until 1988. Previously, swordfish landings were a by-catch of the tuna fishery. Restrictions and area closures for tuna and swordfish along the East coast and Gulf of Mexico prompted boats to move from those areas and target swordfish in Hawaii. Longlining for swordfish began in 1988 in Hawaii with 50,000 pounds landed. In 1989, 650,000 pounds were landed; in 1990, 3.5 million pounds were landed; and in 1991, 8.7 million pounds were landed.

In 1991, 140 vessels were active. They made 1,666 trips and set 12.2 million hooks. A total of 66,000 swordfish was caught in addition to 39,500 bigeye tuna, 38,000 dolphinfish, 36,611 marlin (50% striped marlin, 25% blue marlin and 25% other marlin) and 71,000 sharks (only 2,289 sharks were kept) (Dollar 1992). Marlin can be sold commercially in Hawaii; thus, fishermen have an incentive to catch marlin.

Landings in 1992 are down approximately 30% because longlining is no longer permitted within 50 miles of the islands. This action was taken because monk seals, an endangered species, were found with hook injuries. In addition, the action reduces gear conflicts. The closure has forced smaller boats, which lack sophisticated navigation equipment and the ability to fish for up to a month at a time, to leave the fishery (R. Dollar, pers. comm.).

Whole, large (300-400 grams) squid is used for bait. Gear is 20-50 miles long and contains 400-1,800 hooks per set. The soak time is 8 to 16 hours. Light sticks are fixed to each leader. Cost per boat per day to set gear ranged from \$1,000 to \$1,700. Boats travel 500-1,000 miles from ports in Hawaii to the swordfish fishing grounds (Dollar 1992).

Ten boats were observed during the 1990-91 season. One orca interaction (a killer whale ate all of catch, but left heads on hooks) was observed. One humpback whale was released alive. Two turtles were released alive, one was released dead. Sixteen albatross were drowned, 6 were released alive. Most of the catch (34%) was made up of sharks (64% blues, 3% thresher, and 2% mako), 26% of the catch was swordfish and 17% was tuna.

SECTION 3.3

LONGLINING IN MEXICO

The Japanese have used longlines for tuna and billfish off and on in Mexican waters since 1956. Shark longlining began with six boats in 1987. A chronology of longlining events off Mexico follows:

- 1956: Japanese drift longline fishery begins off Mexico.
- 1976: 200-mile Exclusive Economic Zone (EEZ) declared by Mexico.
- 1977: Mexico attempted to enforce its EEZ (commercial longlining stopped).
- 1980: Permits issued for longline joint ventures.
- 1984: Permits withheld.
- 1985: Permits reissued.
- 1986: Six Korean and six Japanese longliners operated from Ensenada for swordfish.
- 1987: 14 swordfish and marlin longliners plus six shark longliners were permitted to fish, but they were told to stay offshore.

Jim Squire of NMFS has worked extensively with the Japanese longline logs and has demonstrated that commercial longlines and recreational marlin anglers fish the same stocks of marlin. When the commercial longliners are kept from fishing marlin (in a directed fishery) the recreational catch per effort increases (Squire and Au 1988).

SECTION 3.4

LONGLINING IN THE GULF OF MEXICO

Longlining for swordfish is an established fishery in the Gulf of Mexico. The Japanese longlined for tuna and billfish from the 1960s to 1982 in the Gulf of Mexico. Swordfish is usually fished at night and the marlin catch is relatively low, but most boats fish for tuna as well since swordfish are scarce at times. Longlining for yellowfin tuna is a daylight fishery and the marlin by-catch is substantial. In the summer, when the weather is warm, 60% of the marlin captured by longline gear die (E. Swingle, pers. comm.).

The yellowfin tuna longline fishery began in the 1980s. The marlin by-catch increased dramatically as the fishery expanded. In 1986 and 1988, 250 longliners were targeting yellowfin tuna. In 1987, 625 swordfish longline permits were issued. From 1987 to 1989, the swordfish catch increased while the yellowfin tuna catch decreased.

Longline marlin by-catch is calculated based on an estimate of 0.98 billfish per set. Assuming 250 longliners each making 100 sets per year (a conservative estimate), the annual incidental billfish (marlin and sailfish) take is estimated to be 24,500 billfish per year. (1988 Atlantic Billfish FMP)

Observer data from the 1979 Japanese longline fishery in the Gulf of Mexico for swordfish reported 12 turtles and no marine mammals in 199 sets (451,902 hooks) [1988 Atlantic Billfish (FMP)].

SECTION 3.5

LONGLINING ON THE EAST COAST

Longlining is an established fishery on the east coast. Swordfish have been harvested by longline in New England and eastern Canada since the 1960s. The Japanese longlined in the Atlantic from 1956 to 1976.

Harpoon gear took 6.2 million pounds of swordfish in 1962. When longline gear was introduced in 1963, the total catch rose to 17.6 million pounds. The catch stabilized at 9.9 to 11 million pounds until 1970. From 1974 to 1983 harpooners averaged 9% of the catch and longliners landed most of the remainder (drift gill nets landed a portion beginning in 1980). In 1986 the catch on the east coast was 8.5 million pounds, rose to 10.6 million pounds in 1989, and fell to 7.5 million pounds in 1991.

In 1975, the swordfish longline fishery spread to the Straits of Florida; by 1980, 200 boats fished swordfish on Florida's east coast. The Caribbean swordfish longline fishery began in 1983-1984.

While it is difficult to generalize given the wide distribution of swordfish and the different fishing practices, several trends are apparent in the swordfish longline fishery. If the gear is set at night and is not very long in length (less than 10 miles), billfish are not captured at all (S. Berkeley pers. comm.). Most gear is longer than this (greater than 10 miles but less 40 miles) and marlin is a by-catch species. Tuna longline fishing, which occurs during the day, tends to have higher marlin by-catch rates. The shark by-catch is large and more sharks are caught than swordfish. Mako and thresher sharks are kept while other species are discarded (Berkeley 1988).

Total billfish by-catch for the Atlantic is not known; however, using an estimate of 0.86 billfish per longline set and assuming 500 active longliners each utilizing 100 sets per year, yields an estimate of 43,000 billfish captured each year by the Atlantic longline swordfish fleet (1988 Atlantic Billfish FMP).

Observation data: (Atlantic Billfish FMP)

1974-78: One domestic swordfish longline boat reported
13 sailfish, 42 white marlin, 3 blue marlin and
3,837 swordfish landed.

1979: A total of 295 observed Japanese longline swordfish sets (663,551 hooks) yielded 17 turtles and 5 marine mammals.

During the 1978-79 season, observers saw 7.5 million hooks set by the Japanese longline fleet and 5,300 billfish were caught (40% were released alive).

1985: Japanese longliners caught 6 turtles and no marine mammals.

1986: Japanese longliners captured 5 turtles and 2 marine mammals.

A total of 21 trips were observed aboard domestic swordfish longliners from 1985-1987; 137 billfish, 1,074 swordfish, 1,396 tuna, and 472 sharks were landed in 160 sets (78,654 hooks, 3,894 miles of gear).

The 1985 Environmental Impact Report (EIR) for swordfish attributed the increasing catch rate of small swordfish during 1980-1985 to longline gear, which tends to extend the fishing season and targets fish in warm waters where younger fish live. Competition between longliners and drift gill netters for space resulted in gear entanglement and gear loss.

Issues

SECTION 4.1

ISSUE: MARLIN BY-CATCH

1) SOUTHERN CALIFORNIA IS NOT A PRODUCTIVE AREA FOR STRIPED MARLIN:

PRO LONGLINE - a) Incidental take of striped marlin by longline gear will not affect stocks since the species ranges throughout the Pacific (Squire and Au 1989).

CON LONGLINE - a) Striped marlin have been designated as being harvestable only by sport anglers since 1937.

b) Since relatively few striped marlin are in California waters, any take of striped marlin by commercial fishers will reduce the likelihood of capture by sport anglers. Squire and Au (1989) demonstrated that directed Japanese longlining for billfish in Mexico reduced the catch rate of striped marlin by sport anglers in Mexico.

c) Since 1969 recreational anglers have averaged 3,201 reported angler days and a catch of 750-800 striped marlin per year (NMFS Billfish Newsletter 1992).

d) Recreational anglers in Hawaii are concerned about sustaining sport catch rates with the recent increase in longline activity (NMFS Billfish Newsletter 1992).

2) LONGLINE GEAR CAN BE MANIPULATED SO THAT MARLIN BY-CATCH CAN BE REDUCED:

PRO LONGLINE - a) Dr. Chris Boggs has demonstrated that longline gear in Hawaii can be manipulated to target certain species. The take of striped marlin can be avoided or minimized by:

1) Fishing at night on the surface for swordfish.

- 2) Fishing deep beneath the thermocline for tuna. Deep fishing can be accomplished by line shooters, long float lines, or zig-zag sets which put long droops in the set.
 - 3) Setting and retrieving gear quickly, to minimize time gear is in shallow waters and likely to be taken by marlin. (pers. comm.)
 - 4) Using larger baits (squid) and light sticks, since squid is less preferable to marlin than mackerel (pers. comm.)
 - 5) Putting hooks in during daylight and pulling at night to reduce trolling for marlin. Few long sets as opposed to many short sets also reduces the amount of time the gear is on the surface and available to marlin. (pers comm.)
- b) Striped marlin catch by Japanese longliners declined because marlin are less vulnerable to deep longlines than shallow gear (Nakamo and Bayliff 1991; Suzuki 1977).

- CON LONGLINE -
- a) Striped marlin may prefer warm waters, but Bedford and Holts (1989) demonstrated that striped marlin spend time in and below the thermocline (where the temperature is cooler).
 - b) Marlin will chase the gear when it is being set and when it is being retrieved. Marlin swim at an average speed of 0.75 to 1.54 knots and are capable of swimming faster (some have been clocked at above 3 knots for over an hour). They can grab the bait given the typical haul back and set speeds (generally less than 1 knot).
 - c) Striped marlin feed on squid in other parts of the world. Squid may not be a foolproof deterrent to a marlin biting a longline hook.

- d) It is difficult to set gear at a specific depth. The current is one problem, and Boggs indicates that predicted depth does not always correlate with actual depth. Boggs (1992) used time depth recorders to ascertain depth.
- e) Boggs' theories have not been tested in California.
- f) Longline fisheries on the east coast of the U.S., in the Gulf of Mexico, the Caribbean, Hawaii, and in areas exploited by Japan have all recorded marlin by-catches.
- g) Line shooters cost \$6,000.00. Also, other methods for deploying longlines at greater depths are time consuming and laborious (pers. comm.); therefore, they may not be employed.

3) LONGLINERS CAN AVOID MARLIN MIGRATION ROUTES:

PRO LONGLINE - a) From 1965-75 Japanese longline logs (Squire and Susuki 1989) demonstrated that the areas with greatest catch per unit of effort occurred off Baja California, Mexico. No spawning took place off California; southern California waters are not a major migration route and longline gear will not interfere with migration.

CON LONGLINE - a) Tagging studies (Squires and Suzuki 1989) demonstrate that striped marlin travel southeast to Baja California and westward to Hawaii; major spawning areas are in the western Pacific. They move poleward during the summer season. Since marlin movements are characterized as diffuse, longline gear may intercept marlin no matter where it is set.

4) STRIPED MARLIN CAN BE RELEASED ALIVE:

PRO LONGLINE - a) Boggs (1992) used sonic tags on marlin that had been captured by longlines and released. Marlin survived if the line was cut near the hook. Marlin can survive 5-9 hours after being hooked. Two bigeye tuna and 1 marlin were recaptured 3-10 months after being hooked by a longline indicating survival.

- CON LONGLINE - a) In the Gulf of Mexico longline fishery for yellowfin tuna, up to 60% of the marlin species captured were released dead (E. Swingle, pers. comm.).
- b) In observations on 21 domestic longline trips for swordfish and tuna in the Gulf of Mexico, 41% of marlin were released dead and 59% released alive. In 1982-86, foreign longliners released 65% of marlin dead and 35% alive.

5) LONGLINERS WILL MOVE OUT OF AN AREA IF LONGLINE GEAR CATCHES A STRIPED MARLIN:

- PRO LONGLINE - a) July to October (September being peak) is the recreational marlin season in California. Longliners can work around these months.
- b) Marlin anglers concentrate their efforts from Santa Cruz Island to the U.S.-Mexican border, and between San Clemente and San Nicholas Islands. Longliners can fish outside this area and not interfere with sport fishing.
- c) Longliners promise to move out of an area if a striped marlin is captured and not return for a fixed period of time.
- CON LONGLINE - a) To ensure compliance, 100% observer coverage would be required.

SECTION 4.2

ISSUE: SHARK BY-CATCH

1) LONGLINERS ARE NOT TARGETING SHARKS:

- PRO LONGLINE -
- a) Sharks do not pay enough to keep (recent price per pound of mako was 80 cents), and would take up space that could be occupied by more valuable species. Bringing sharks on board would waste time and increase the possibility that valuable tuna and swordfish would become damaged while on the line.
 - b) Gear can be set away from heavy concentrations of sharks. In areas where sharks are common, fewer hooks can be set (to decrease overall catch).
 - c) Shark by-catch is only 1 or 2% (L. Mascola, pers. comm.).
- CON LONGLINE -
- a) Medium sized blue shark fins can be sold dry for \$14.00 a pound. Such prices for fins and mako/thresher flesh, which can average over two dollars a pound, will be incentives for fishermen to retain longlined sharks.
 - b) Even though sharks are not targeted, the shark by-catch is very high in every recorded tuna and swordfish longline fishery. The following examples list ranges of 60-96% shark by-catch.
 - 1) The CDFG longline experiment in 1955 caught 67% sharks and billfish and only 17% tuna. In 1956 longlining caught 62% sharks and billfish and 20% tuna. In 1968 off California, NMFS caught two swordfish on longlines and 1,532 sharks. In Mexico that same year, NMFS caught 193 swordfish, two tuna, and 10,712 sharks.
 - 2) In 1987 F/V *TIFFANY VANCE* fished swordfish by experimental longline permit in California and caught 1.3% swordfish and 95.6% shark.

3) Anderson (1985) states that longlining for swordfish on the east coast resulted in shark by-catches that are 2 to 3 times the swordfish catch for the years 1962-1986.

- c) Longline fisheries off Florida, New England, Hawaii, the Gulf of Mexico, and Mexico all report more shark being caught on longline gear than the targeted swordfish or tuna species.
- d) Some fishermen report that shark by-catch can be as high as 80-90% of the total catch during longlining.
- e) Monofilament longline gear catches more sharks than steel cable longline gear (Berkeley 1998).

2) SHARKS CAN BE RELEASED ALIVE:

- PRO LONGLINE - a) Blue sharks can be released alive by cutting the leader near the hook or using the hook extraction methods developed by Tim Athens for the experimental shark longline fishery.
- b) In the Hawaiian longline fishery, 90% of the blue sharks are released alive (Dollar 1991). ?
o
- c) Sharks caught in trawl gear have higher mortality rates than sharks caught on longline gear (Anderson and Teshima 1990).
- CON LONGLINE - a) Anderson and Teshima (1990) report mortality of discarded blue sharks in the east coast longline fishery was 25%. Other shark species had mortalities as high as 45%. The 1991 Atlantic Shark FMP states that over 50% of mako sharks hooked on longline gear die.
- b) In Florida 66% of sharks captured by swordfish longline gear died (Berkeley 1988).

3) STATUS OF SHARK RESOURCES:

- PRO LONGLINE - a) Shark populations are not well understood. While sharks may have slow reproductive rates, adults and newborns have low natural mortality.

- b) Blue sharks are distributed Pacific-wide and worldwide (Bigelow 1948); longline by-catch will not affect the status of this resource.
- CON LONGLINE -
- a) Sharks have slow reproductive rates, and are susceptible to overfishing; they cannot withstand high fishery pressures and even incidental take may harm their population structure and abundance levels (Stevens 1992; Holden 1977).
 - b) Drift gill net and recreational fisheries already take sharks; a longline fishery would be additive.
 - c) Southern California may be a nursery area for mako sharks (Bedford 1989).
 - d) A high by-catch of blue sharks would result in wastage.

SECTION 4.3

ISSUE: SWORDFISH RESOURCE

1) SWORDFISH STOCKS ARE NOT WELL UNDERSTOOD:

PRO LONGLINE - a) The Legislature finds and declares as follows (Fish and Game Code Section 8585):

- 1) The swordfish resource in both California waters and Pacific-wide is in a healthy condition.
- 2) A limited entry swordfish fishery should be established to allow increased access to the swordfish resource (effective until 1995; originates with drift gill net law).

b) Longline fisheries have considerable potential for increased catches of swordfish. Worldwide demand for swordfish will increase at least 5% in the future, yet because of restrictive policies in California, U.S. fishers are unlikely to take advantage of the demand (Sakagawa 1989).

c) The estimated sustainable catch of swordfish Pacific-wide is 40 million pounds (Sakagawa 1989). Current catch is 20-50 million pounds.

d) The decline of swordfish landings in California over the past five years is due to changes in the fishery. U.S. fishers are catching fish in Mexican waters and landing those fish in Mexico. Previously, they caught fish in Mexico and landed them in California (L. Mascola, pers. comm.).

CON LONGLINE - a) The swordfish fishery in the Pacific seems to be at maximum sustainable yield (18,000 tons), but more data are needed. Swordfish may be approaching that condition (overharvested) in the Pacific (Skillman 1989).

- b) Skillman, Bartoo, Coan and others consider the swordfish in the Pacific to be one stock, based on Japanese longline data. Nishizaki and Shimizu (1991), using the same data, conclude that as many as 4 stocks may exist in the Pacific. If multiple stocks exist and the stock structure is complex, the risk of overexploitation increases dramatically.
- c) Swordfish stocks on the east coast are currently considered overexploited.
 - 1) Dollar (1991) found that the majority of swordfish taken on 5 of 10 observed longline trips were "rats" (fish weighing less than 23 kg). These fish were usually released regardless of whether they were dead or alive; most were dead.
- d) Swordfish landings have declined over the past five years in California from over 5.2 million pounds in 1985 to below 1.6 million pounds in 1991.

2) THE EFFECTS OF LONGLINE GEAR ON SWORDFISH:

- PRO LONGLINE - a) Longline gear is used throughout the U.S. and the world and is the dominant gear for taking swordfish in all areas except off California. Longline gear may be more efficient than harpooning for swordfish; it has replaced other gears because it is more effective at producing a steady supply of swordfish.
- CON LONGLINE - a) Longline gear is not size specific (Hooker 1976, Berkeley 1981). Little can be done to prevent juvenile fish from being hooked; larger hooks make no difference (Berkeley 1981). Harpoons target big fish, while longlines catch more smaller fish (Atlantic Billfish EIR 1985).
- b) The mean weight of swordfish in the Spanish longline fishery in the Atlantic declined from 88 kg in 1975 to 58 kg in 1985. Mean weight of swordfish in the U.S. longline fishery fell from 69 kg in 1978 to 39 kg in 1987 (Berkeley 1989).

- c) Shark predation occurs on longline gear. In the eastern Pacific, 14.5% of all tuna and billfish captured by the Japanese longline fishery were shark damaged (based on scientific longline cruises in 1967-68; Taniuchi 1990).
- d) Longline gear has a relatively low catch per unit of effort (Hooker 1976).

SECTION 4.4

ISSUE: BY-CATCH OF OTHER SPECIES

- PRO LONGLINE - a) The experimental longline fishery for shark in California captured few species aside from shark (CDFG observer data indicates that 91-92% of the catch was shark for the 1988 and 1989 longline shark fishery respectively). The five sea lions and two turtles that were observed were released alive. An experimental longline fishery for swordfish and tuna may have a similar low by-catch of marine mammals and birds.
- b) Birds are taken far less frequently by longline gear than by other types of fishing gear.
- CON LONGLINE - a) Longline gear impacts marine mammals.
- 1) Five California sea lions and two turtles were captured by the shark longline fishery in two years of limited observer coverage (10% of trips were observed).
 - 2) Northern Hawaiian Islands are closed to longline gear because monk seals, which are considered endangered, were hooked by longline gear.
- b) Logs from the 1991 Hawaiian longline fishery recorded: 60 turtles were released alive, injured or dead; seven whales/porpoise were released alive, injured or dead; 121 birds were released alive, injured or dead. These data are from 199 sets with 65 vessels reporting interactions.

SECTION 4.5

ISSUE: ECONOMIC IMPACT OF THE EXPERIMENTAL LONGLINE FISHERY

1) A LONGLINE FISHERY WILL MEET DEMAND FOR A QUALITY PRODUCT AND IS ECONOMICALLY BENEFICIAL TO THE STATE:

- PRO LONGLINE - a) The demand for fresh tuna has climbed dramatically since 1984. Longline gear and blast freezing (-70°C) can meet this demand.
- 1) Longline gear catches fish of better quality; fish are less bruised than with seine or other net gear. Longlined fish tend to be bigger than purse seined fish (Suzuki 1988, Lokkeborg and Bjordal 1992). Longlining is more fuel efficient than trawl gear (Nygaard 1988).
 - 2) From 1987 to 1991, longline products in Hawaii quadrupled in value. Fish taken by seiners for canning are typically sold at lower prices per pound than longlined fish, which are frozen and sold as "fresh fish" in Japan.
- b) Longlining allows for higher quality, lower quantity product, which is better for the resource.
- d) There is less chance of ghost fishing if gear is lost than with lost gill nets or traps.
- CON LONGLINE - a) While economic benefits are likely to accrue to the commercial fishing industry, there is likely to be no net benefit to the state.
- 1) Longline use (directed fishery) in Mexico reduced marlin recreational catch in Mexico (Squire and Au 1988).
 - 2) Marlin sport angler interest is directly related to the quality of the experience. Fewer fish reduces the quality and the likelihood of fishing. Each marlin angler spends \$334 per day, excluding vessel costs (Herrick 1984). This value and number of anglers may be underestimated since this report is outdated (B. Shedd, pers. comm.).

- 3) Billfish are commercially worth \$1.00 per pound on the Atlantic seaboard. Recreationally-caught marlin are worth \$22.00 per pound (Atlantic Billfish FMP 1988). The value of a dead striped marlin to sport anglers in southern California could exceed \$7,000 if you consider that most striped marlin are released alive (B. Shedd, pers. comm.).
 - 4) A decrease in the swordfish stock will discourage recreational anglers from spending the money to participate in the recreational fishery (B. Shedd, pers. comm.).
- b) The recreational fishery for striped marlin off the U.S. west coast is "very important" (Status of Living Marine Resources, NMFS 1991).
 - c) The CDFG does not have the economic resources to monitor the experimental fishery effectively.
 - d) From economic and social considerations, it is concluded that the greatest overall benefit to the nation will result from reserving billfishes for the recreational fishery (Atlantic Billfish FMP 1988).

2) THE LONGLINE FISHERY WILL PROVIDE OPPORTUNITIES FOR THE ECONOMICALLY DEPRESSED LOCAL FISHING INDUSTRY:

- PRO LONGLINE -
- a) The traditional San Pedro wetfish fleet is in financial trouble. Only two canneries are operable; United Food Processors (UFP) recently filed bankruptcy papers. Many fishers are experiencing financial hardship, and feel the longline fishery would:
 - 1) Keep the UFP cannery afloat by attracting capital and converting the cannery into a freezer/distribution center for tuna/swordfish (L. Mascola, pers comm).
 - 2) Such action would create many jobs (drivers, packers, handlers, etc.).

- b) An experimental gear permit to use longline gear north of Pt. Arguello was issued in 1987 to Dr. Mascola (F/V *Southern Queen*), but he was unable to obtain financing. Now he has financing, but he cannot get the permit. Such action is not conducive to a business' need to plan for the future.
- c) The Pacific-wide catch of swordfish is dominated by the Japanese. California fishermen are currently taking only 3% to 10% of the catch.
- d) The world market for swordfish is strong so prices should remain high. If market grows at 5% over 3 years, it will require approximately 1,000 mt additional swordfish per year to what was landed in 1986 (Sakagawa 1989). Pacific ocean stocks are in sufficiently good condition (Bartoo and Coan 1989) to contribute to such an increase.

CON LONGLINE - a) A longline fishery is unlikely to solve the financial problems of a large number of fishermen since access to the fishery would be limited. The current poor financial condition of the wetfish fleet and the displaced gill net fleet can not be addressed by this fishery.

SECTION 4.6

ISSUE: CONFLICT WITH OTHER COMMERCIAL FISHERIES

1) CONFLICTS WITH OTHER GEAR WILL BE MINIMAL AND CAN BE RESOLVED:

- PRO LONGLINE -
- a) Those fishermen applying for the permit are well established, knowledgeable fishermen aware of the written and unwritten codes of the various fisheries. No conflict with other fisheries is likely to occur.
 - 1) The Mascola family has been in the business since 1870. F/V GALLANT is a seiner of long stature as is F/V MAURITANIA, F/V ST. GEORGE II, F/V GOLDEN SABLE, and the F/V SOUTHERN QUEEN.
 - b) Fish and Game Code Section 8606 states: "The Commission shall encourage the development of new types of commercial gear".
 - c) Preliminary data in Hawaii finds no correlation between longline fishery and declining catch of other gears, although more study is needed and results are preliminary (Boggs 1991).
 - d) Japan and Taiwan have harpoon, drift net, and longline fleets that seem to exploit the resource simultaneously without overt detriment to each other.
 - e) Purse seine effect on longline fishery for yellowfin tuna is greater than the effect of the longline fishery on the purse seiners. (Nakano and Bayliff 1992). Purse seiners take smaller fish than longline gear.
- CON LONGLINE -
- a) Longliners have come into direct conflict with artisan fishermen in Hawaii. This has led to a moratorium on the entry of new vessels until 1994.
 - b) The swordfish fishery in California has had conflicts between harpoon and drift gill net fishermen in the past. Longliners could add to this conflict because they will be one more user of a resource (swordfish) that has *experienced declining landings in recent years*

- c) Fish and Game Code Section 8606 also states that the Commission shall "minimize user group and resource allocation conflicts" and ensure the "proper utilization and protection of marine resources". Recreational marlin anglers have been allocated the striped marlin resource. Longlines will likely result in user group conflicts with recreational marlin fishers.

SECTION 4.7

ISSUE: POTENTIAL OUTCOMES IF THE PERMIT IS NOT GRANTED

- PRO LONGLINE - a) If the permit is not granted, boats not licensed in California could fish outside of State waters and fish for what they like in any manner they please. Without an FMP, CDFG or any other organization is powerless to manage these resources. Marlin could be caught in federal waters (3-200 miles) off California and landed in Mexico, Oregon, or Washington. Granting permits to these five boats will cause fewer problems than denying them and watching helplessly as non-California licensed fishers harvest outside state waters. Examples include:
- 1) Poaching occurs in the Carribbean swordfish fishery and small nations have difficulty enforcing restrictions (Caribbean Fisheries Inst. 1986).
 - 2) Hawaii and Gulf states could not regulate shark and billfish fisheries without a regional plan.
- b) Without a regional plan it will be difficult to manage these far ranging species. Boats can do what they like outside state territorial waters (to some extent) (M. Justine, NMFS-NER, pers. comm.).
- c) It is unfair to regulate California fishers when non-California fishers are unregulated.
- d) California swordfish catch is small (3% to 10% of Pacific-wide take). The state will lose an opportunity to participate in federal or international management of this resource if the fishery is minor or nonexistent.

- CON LONGLINE -
- a) An FMP for the management of billfish and pelagic sharks was drafted by the Pacific Fishery Management Council in 1981. It was not implemented because the harvest of these species was minimal compared to the overall harvest of many nations and a plan as such would not address the needs of resource management unless all nations cooperated. It was also realized that most of the billfish and shark harvest on the U.S. Pacific coast occurred in California and should thus be left up to California management. The decision not to fully implement an FMP in 1981 is relatively valid today in terms of swordfish, other billfish, and sharks.
 - b) No boats have expressed interest in coming from Oregon or Washington or Mexico to fish for tuna or swordfish.
 - c) Such boats would have to travel long distances without refueling or landing their catch in California (or using California based spotter planes) to avoid CDFG jurisdiction.
 - d) An experimental longline fishery will not prevent any vessel registered outside California from longlining outside State waters. Only a Fishery Management Plan can control fishing along the U.S. west coast and even then only out to 200 miles offshore.

SECTION 4.8

ISSUE: THE USE OF OBSERVERS

- PRO LONGLINE -
- a) With CDFG observers in place, it should be relatively easy to monitor the fishery. Fishermen are willing to pay for the program. If the fishermen cannot avoid acceptable levels of marlin and/or shark take, the experimental permits can be revoked.
 - b) Other fisheries are managed with observers with positive results (Squire and Boggs both stress this point).
 - c) If you do not know the answer or if you do not have the data, experimenting is an approved method of discovering answers.
 - d) Safeguards can be written into the permit rules.

- CON LONGLINE -
- a) The CDFG is relatively poor in economic resources, and does not have the funds to monitor the fishery thoroughly.
 - b) While fishermen are opting to pay for observer costs, problems exist:
 - 1) Fishermen promised to pay for the experimental shark longline program in 1988. They paid all observer expenses for the first year and then split the cost with CDFG for the second year. No observer coverage was provided for the third or fourth years of the experimental shark longline fishery because the fishermen felt the program was too expensive and the data were not changing drastically from year to year.
 - 2) Salary and employment benefits were \$1,991.37 per month per observer in 1988 or \$35,844.61 per two observers for 9 months. Observer coverage was only 10% of the trips.
 - 3) Supervisory expenses have not been covered in the past. Observers need to be trained and data needs to be analyzed.

- c) The estimated cost of an observer program for this experimental fishery (at 100% coverage) is \$47,790 per boat per year.
- d) Dollar and Yomoshita (1991) found that in a sample of 96 longline boats in January 1991, 50% of log data in an observer program was accurate, and the rest was of poor or questionable quality.
- e) Dollar and Yomoshita (1991) found that the boat logs from 78 (8%) of 991 trips reported marine mammal interactions, while 6 out of 10 observers (60%) reported marine mammal interactions.

SECTION 5.0

BIBLIOGRAPHY

- Anderson, E.D. 1990. Estimates of large shark catches in the Western Atlantic and Gulf of Mexico 1960-1986. Elasmobranchs: status of the fisheries. NMFS Technical Report 90: 443-454.
- Anderson, E.D. and Teshima, K. 1990. Workshop on fisheries management. Elasmobranchs: status of the fisheries. NMFS Technical Report 90: 499-504.
- Bartoo, N.W. and Coan, A.L. 1989. Assessment of the Pacific swordfish resource, 137-152 pp.
- Bedford, D.W. and Hagerman, F.B. 1983. Billfish fishery resource of the California current. CalCOFI 24: 70-78.
- Bedford, D.W. 1985. Pelagic shark/swordfish drift gill net fishery management information document.
- Berkeley, S.A.; Irby, E.W.; and Jolley, J.W. 1981. Florida's commercial swordfish fishery: longline gear and methods. Marine Advisory Program.
- Berkeley, S.A. 1989. Trends in Atlantic swordfish fisheries. Planning the future of billfishes part 1, pp. 47-60.
- Bigelow, H.B. and Schroeder, W.C. 1948. Sharks. Sears Foundation for marine research: memoir 1.
- Boggs, C.H. 1992. Time and depth of fish capture measured using hook timers on longline gear. SWFC Bimonthly Reports, May.
- Boggs, C.H. 1991. Preliminary examination of catch rates in Hawaii's troll and handline fisheries over a period of domestic longline fishery expansion. Administrative Report H91-05.
- Carey, F.G. and Robison, B.H. 1981. Daily patterns in the activities of swordfish, Xiphias gladius, observed by acoustic telemetry. Fishery Bulletin 79: 277-292.
- Dollar, R.A. 1992. Annual report of the 1991 western Pacific longline fishery. SWFC Administrative Report H92-11.
- Dollar, R.A. and Yoshimoto, S.S. 1991. The federally mandated longline fishing log collection system in the western Pacific. SWFC Administrative Report H91-12.
- Dollar, R.A. 1991. Summary of swordfish longline observations in Hawaii, July 1990-March 1991. SWFC Administrative Report

- Farber, M.I. 1990. NOAA Technical Memorandum. NMFS-SEFC-270.
Fishery management plan, final environmental impact statement,
regulatory impact review and initial regulatory flexibility
analysis for swordfish. 1985. SAFMC, CAFMC, MAFMC, NEFMC,
GMFMC.
- Fishery management plan, final environmental impact statement,
regulatory impact review and initial regulatory flexibility
analysis for the Atlantic billfish. 1988. SAFMC, CAFMC,
MAFMC, NEFMC, GMFMC.
- Fishery management plan for sharks of the Atlantic Ocean. 1991.
NMFS.
- Fishery management plan for Pacific coast billfish and oceanic
shark fisheries (draft). 1981. Pacific Fisheries
Management Council.
- Hanan, D.A. D.B. Holts, and A.L. Coan. In press. California
drift gill net fishery 1981-82 to 1990-91. CDFG Quarterly.
- Hanan, D.A. 1983. Bluefin tuna in the eastern north Pacific
Ocean. CalCOFI 24: 97-98.
- Herrick, S.F. and D.D. Huppert. 1988. Economic impacts
associated with changes in landings of California entangling
net fisheries 1981-1986. SWFC Administrative Report LJ88-
27.
- Herrick, S.F. 1984. Socio-economic profile of the southern
California billfish angler. SWFC Administrative Report
LJ84-12.
- Holts, D.B. 1988. Review of U.S. west coast commercial shark
fisheries. Marine Fisheries Review 50-1.
- Holts, D.B. and D.W. Bedford. 1990. Activity patterns of
striped marlin in the southern California bight. Planning
the future of billfishes part 2: 81-94.
- Hooker, C. 1976. Swordfish, Xiphias gladius, and the California
Fishery. Report to the legislature.
- Hovgard, H. and F. Riget. 1992. Comparisons of longline and
trawl selectivity in cod survey off west Greenland.
Fisheries research 13: 323-333.
- Laurs, R.M.; R.J. Lynn, R. Nishimoto, and R. Dotson. 1981.
Albacore trolling and longline exploration in eastern north
Pacific waters during mid winter. NOAA technical
Memorandum.
- Log of the F/V JJ. 1980.

- Lokkeborg, S. and A. Bjordal. 1992. Species and size selectivity in longline fishing: a review. Fisheries Research 13: 311-322.
- Mayabe, N. and W.H. Bayliff. 1987. Review of the Japanese longline fishery for tunas and billfishes in the eastern Pacific Ocean. IATTC Bulletin 19-1.
- Nakano, H. and W.H. Bayliff. 1992. Review of the Japanese longline fishery for tunas and billfishes in the eastern Pacific Ocean. IATTC Bulletin 20.
- Nishizaki, O. and M. Shimizu. 1991. Spatial and temporal CPUE trends and stock unit inferred from them for the Pacific swordfish caught by the Japanese tuna longline fishery. Bulletin of Far Seas Fisheries Research Lab 28: 76-77.
- Oliphant, M.S.; P.A. Gregory, B.J. Ingle, and R. Madrid. 1990. California marine fish landings for 1977-1986. Fish Bulletin 173.
- Our Living Oceans. 1991. NOAA Technical Memorandum.
- Pillai, P.P. and M. Honma. 1978. Seasonal and areal distribution of the pelagic sharks taken by the tuna longline in the Indian Ocean. Bulletin of Far Seas Fisheries Research Lab 16: 33-48.
- Proceedings of the 39th annual Gulf and Caribbean Fisheries Institute, Hamilton, Bermuda. 1986.
- Rey, J.C. and Munoz-Chapuli. 1991. Relation between hook depth and fishing efficiency in surface longline gear. Fishery Bulletin, 89(4): 729-732.
- Sakagawa, G. 1989. Trends in fisheries for swordfish in the Pacific Ocean. Planning the future of billfishes part 1: 61-80.
- Sciarrotta, T.C. and Nelson D.N. 1977. Diel behavior of the blue shark, Prionace glauca, near Santa Catalina Island, California. Fishery Bulletin 75. pp 519-528.
- Scientists conduct swordfish longline research cruise. 1991. SWFC Bimonthly Reports-January.
- Skillman, R.A. 1989. Status of Pacific billfish stocks. Planning the future of billfishes part 1: 179-196.
- South Atlantic wreckfish limited entry ITQ system. 1992. NMFS compilation of documents.

- Squire, J.L. and D.W.K. Au. 1990. Striped marlin in the north east Pacific--a case for local depletion and core area management. Planning the future of billfishes part 2:199-214.
- Squire, J.L. and Z. Suzuki. 1990. Migration trends of striped marlin (Tetrapturus audax) in the Pacific Ocean. Planning the future of billfishes part 2: 67-80.
- Status of Pacific Oceanic living marine resources of interest to the USA for 1991. 1991. NMFS Technical Memorandum.
- Status reports on world tuna and billfish stocks. 1981. NMFS.
- Stevens, J.D. 1992. Blue and mako shark by-catch in the Japanese longline fishery off south eastern Australia. Australian Journal of Marine and Freshwater Research 43: 227-236.
- Sunada, J. 1990. Experimental drift longline shark fishery 1990. CDFG Report to legislature.
- Sunada, J. 1991. Swordfish and sharks. CalCOFI 32: 14-15.
- Suzuki, Z.; Y. Warashina, and M. Kishida. 1977. The comparison of catches by regular and deep tuna longline gears in the western and central equatorial Pacific. Bulletin of Far Seas Fisheries Research Lab 15: 51-89.
- Suzuki, Z. 1988. Study of interaction between longline and purse seine fisheries on yellowfin tuna, Thunnus albacares. Bulletin of Far Seas Fisheries Research Lab 25: 73-99.
- Taniuchi, T. 1990. The role of elasmobranchs in Japanese fisheries. Elasmobranchs: Status of the Fisheries, NMFS Technical Report 90.

Received from Al Taucher (CA Fish & Game commission)
After 10-2-92 Longline hearing

Findings of Fact

A. Marlin-by-catch

The number of marlin present in Californian waters is small but of significant importance to the recreational angler. The industry which supports the recreational pursuit for marlin is of considerable importance to the California Economy. A decrease in the likelihood of a recreational angler to catch a marlin has been shown to result in an increasingly greater reduction in the number of anglers actually fishing. Despite evidence that new techniques may reduce by-catch, the evidence when taken as a whole shows that the techniques do not eliminate by-catch because, at best, the techniques if used properly can only be hoped to reduce by-catch - not eliminate it, and because the cost of labor, time and capital outlay is high an disincentive exists that curtails their use. Therefore, we conclude that the new techniques will probably not be an effective means of reducing marlin-by-catch.

The data about marlin migration routes conflict but marlin movements have been shown to be diffuse. Avoidance of migration routes infers a knowledge of the pattern of marlin movement. Because the movement has been shown to be diffuse no pattern therefore could exist. We conclude that longlines cannot avoid marlin migration routes.

The data demonstrates that methods exist which can reduce the mortality rate of marlin which are alive when brought to the boat. However, the data more clearly demonstrates that, at least, a significant portion of those marlin brought to the boat will be dead and that some portion of those released will die. We therefore, conclude that a significant portion of marlin-by-catch will die a result of being caught.

The recreational marlin fishery is well established fishery in California and has been exclusively allocated to the recreational angler since 1937. The industry which supports this activity is well developed and an integral part of the California economy. Longlines would significantly affect the recreational marlin fishery because marlin-by-catch would occur and by-catch results in the death of a significant portion of those caught. The effect of this on the small number of marlin actually in our waters would be to reduce the number of fish available to the traditional users, the recreational angler, of the fishery. A reduction of this type has been shown to negatively and significantly affect the recreational fisherman and the industry and economy he supports.

B. Shark-by-catch

A by-catch of shark cannot be avoided by longlining nor have the applicants suggested otherwise. The data suggests strongly that the reasonably expected by-catch of shark will significantly exceed the catch of targeted species and that the by-catch will exceed at least 60% .

The negative impact of the high by-catch of shark could be mitigated if the sharks could be released harmlessly, but the evidence strongly suggests otherwise. Studies vary greatly but all demonstrate a significant mortality rate of captured sharks. Mortality is measured by the shark being alive at release, but no measure has been developed to ascertain the number of sharks that actually die as a result of being caught by longlines because some percentage will die after release. However, it is safe to infer that a greater number of sharks actually die than is reported. Given that the possible percentage of reported mortality is 66%, we, therefore, conclude that the probability that live release will mitigate against a high by-catch is low.

Shark populations are not well understood but a consensus exists on the fact of their low reproductive rates. A low reproductive rate has been linked to a susceptibility to overfishing for sharks. These facts plus the possibility that the California Bight may be a nursery area for Mako sharks cause us great concern. Catches of makos have declined in recent years. The size in makos caught have decreased. The facts in this state strongly suggest that makos sharks have been overexploited in California. Indeed, longlining for all sharks have been disallowed by this Commission because the shark fishery in this state has been overexploited and the reasons given above support our concern and our decision. The use of drift gill nets and of existing recreational fisherman already utilize this resource to its fullest. We, therefore, conclude that a longline fishery would be additive and unnecessary.

The by-catch of shark would consist of a high percentage of blue shark. The low commercial value of blue shark and the above mentioned mortality rates would result in a great wastage of this fish.

C. The swordfish resource

The express intention of the California Legislature is to allow a limited entry into the swordfish fishery. The legislature further has stated that the current fishery is in a healthy condition. Despite declining landings in the recent years, evidence indicates that the fishery is, at best, at maximum sustainable yield. Current conditions indicate that the legislatures statement of 15 years ago is no longer true, but nevertheless, the question presented is whether longlining should be allowed to enter the resource when a traditional harpoon fishery and a gill net fishery already exists.

Longlining has been shown to be an efficient means of harvesting swordfish; it is the dominant form of taking swordfish throughout the world. However, longlining is not selective in the size of the fish which it takes. Nothing is known which keeps longlining from catching small and juvenile fish. The small and juvenile fish are usually released but most are already dead.

The swordfish industry on the U.S. east coast has experienced

considerable decline which has been attributed to longlining. The New England fishery for swordfish was solely a harpoon fishery from 1910 to 1962 and produced approximately 6 million pounds of fish in its last year. In 1991, 7 million pounds of fish were produced by longlining on the whole east coast and gulf. The relatively small difference between harpoon landings in 1962 for New England and the total landings in 1991 for the whole eastern seaboard speaks strongly of the effects of longlining by itself and forces us to ask why. Longlining produced landings of swordfish as high as 17 million pounds during the past 30 years but this level could not be sustained. The current catch of 7 million pounds requires that two-thirds more fish be landed than when the harpooner was the sole means of production because the size of the average fish landed is down from 69 kg to 39 kg. It is reasonable to infer that at least one cause of the lower size of the average fish landed (irrespective of those actually caught and released) is due to longlining's lack of selectivity and the indiscriminate manner in which it takes its fish.

The correlation between longlining and the poor condition of the East Coast fishery is of particular value in California. We, too, have a traditional harpoon fleet. Furthermore, it is a fleet which shares the resource with gillnetters - a fact which would increase the affects a new entrant would have on the fishery. While it is uncertain, it appears that the East Coast fishery for swordfish was in a healthy condition and at a maximum sustainable yield in pre-1960 years when only harpooners were harvesters of the resource. The decline and negative impact on the east coast fishery seems to be the direct result of overfishing by the longline fleet. Currently, our resource is, at best, at maximum sustainable yield and quite possibly be in a state of over exploitation. Longlining has shown to negatively impact a swordfish resource. The harpoon fleet in New England is for practical purposes non-existent. It appears that the harpooners may have been an excellent method of harvesting that resource. The implications for our resource are clear. We, therefore, conclude that longlining for swordfish would negatively affect a resource which is, at best, utilized to the fullest and that the traditional users of the fishery - the harpoon fleet, would be negatively affected by longlines.

REASONS FOR DENIAL OF EXPERIMENTAL LONGLINE PERMITS
By United Anglers of Southern California (UASC)

United Anglers of Southern California (UASC) requests that you vote to deny the experimental longline permits for tuna, swordfish and sharks on October 2, 1992.

United Anglers is an association of recreational and commercial fishermen, the fishing tackle industry and concerned citizens. Our longline committee includes representatives of all aspects of recreational fishing including the media, fishing clubs, organizations and manufacturers. Our committee directly represents well over 200,000 people in the State and indirectly over 3,000,000 concerned California anglers. Everyone of which is vitally concerned about this issue.

The proponents of the permits argue that an accomodation is possible with traditional users of the resource, that new methods of longline use will solve the problems of by-catch, that an economic benefit will be conferred on the State of California and that no relevant information exists upon which to deny the applications. Every single one of the above assertions is WRONG. The Walls Report of the California Department of Fish and Game has arrived at the exact same conclusion. We urge you to do likewise.

The underlying theme of the points made by the permit applicants are based upon the proposition that analogous data cannot be applied to California and that in the absence of California data, the permits ought be issued. Nothing is further from the truth. The Walls Report is nothing but the application of analogous data to the issue before the Commission. The following represents incontrovertible facts from the Walls Report and the material from which the Report was written.

MARLIN BY-CATCH

The relatively small amount of marlin which reach Southern California support a vibrant recreational economy. Present expenditures in recreational pursuit of marlin and swordfish exceed \$100,000,000 in Southern California. Atlantic studies show that a fall in the number of billfish caught by recreational anglers translates into a much greater proportionate drop in expenditures by the fishermen. Given that the Atlantic study states that the greatest economic benefit to the nation results in the reservation of billfish exclusively for recreational fishing; a drop in the number of fish available would significantly and negatively affect a marlin fishery such as ours. The applicants have argued that new methods would alleviate the marlin by-catch problem and therefore leave recreational fishermen unaffected. This is false. The new methods, line shooters, depth regulators, etc. are not new, nor have they been shown to be effective. Even if the proposed methods work, they must be used. The record shows us that longliners do not comply with these methods in the absence of observation. The Department of Fish and Game cannot afford adequate coverage,

and the minimally acceptable amount of coverage proposed by the Department of Fish and Game to the longliners was rejected by the applicants as too expensive. Given the size of our marlin resource, any incidental by-catch of marlin is economically unacceptable. When combined with the fact that no alleviation of the by-catch is the probable result, it is foolish.

SHARK BY-CATCH

The by-catch of sharks is huge in every longline fishery which has been studied - averaging over 2/3's or higher almost everywhere. The Berkely Report (a comprehensive study done on longlines), clearly demonstrates that 2/3's of the shark catch dies. These facts taken in the context of the low reproductive rate of sharks, that Southern California is a nursery area for makos and of the California studies which show a by-catch of 67%-95%, clearly shows that the negative impact on California's shark fishery would be substantial. Furthermore, the relatively low value of the sharks would translate directly into high wastage. A drift gill net fishery already exists that has high incidental catches of shark. To extend this effect onto the shark fishery would be additive and a further burden on our already declining resource. Evidence of the current decline is documented in the recreational fishery by the decreasing average size of makos and declining CPUE.

SWORDFISH

The effect of longlining on swordfish resources is dramatic. The example of the East Coast is particularly demonstrative where the swordfish population is now in a crisis state. Since 1908 there existed in the northeast a viable swordfish harpoon fishery. In 1962 harpoon gear took 6.2 million pounds. The introduction of longlines in 1963 proved to be a short term bonanza for longline fishermen. It also proved to be a long term disaster for the harpoon fishermen and the swordfish resource itself. Last year the harpoon catch was virtually non-existent and the total swordfish catch by all gear types in the entire Atlantic and Gulf was approximately the same size as the 1963 harpoon catch. The average size of swordfish landed is 50% of what it was thirty years ago. The adult swordfish population is now one third the total of pre-longline times. The gill nets have already produced a decline in the swordfish resource in California mirroring the East Coast pattern of a declining swordfish resource. We cannot afford to repeat the East Coast experience. The gill net in Southern California has already pushed the swordfishing into decline. It should not be shoved further towards dangerous over exploitation.

ECONOMIC IMPACT

No overall economic benefit to the State of California would occur as the result of longlining. The small scale proposed by the applicants would not of itself relieve any of the economic misery of the wetfish fleet and its ancillary businesses. However, the probable negative consequences of longlining on billfishing alone would be enough to negatively

impact the State's economy. Longlines reduce the marlin recreational catch. The Atlantic Billfish Plan boldly states that reservation of billfish for recreational fishing produces the greatest economic benefit. NMFS recognizes the economic importance of the recreational striped marlin fishery of the West Coast. The Walls Report recognizes that longlining will not solve the woes of the California wetfish fleet. Simple, direct expenditures by recreational fishermen exceed \$7,000 per marlin killed. To reduce this type of economic value in exchange for a method of fishing which has proven itself to be economically suicidal would be an economic absurdity. The Southern California recreational marlin community alone contributes well over \$100,000,000 to our Southern California economy.

USER GROUP CONFLICT

Longlining is not an established user group in California waters. Its entry will affect recreational marlin fishermen who have been allocated sole use of the resource. Present conflict exists with harpooners for swordfish, and the drift gill netter. To allow a longline entrant would only add to the problems of conflict within this resource. This is not conjecture, the moratorium on longlining in Hawaii is the direct result of user group conflict. The potential for user group conflict is greater here because of the relatively smaller size of the resource and the allocation of marlin exclusively to recreational fishermen in California, which is not the case in Hawaii. This conflict is evidenced by the multitude of requests received by you to deny the application.

SUMMARY

Analogous data from other fisheries supports the negative impact longlining would have on California fisheries. The resource would be harmed. Traditional users of the resource would be in conflict with the new entrant, and the overall economic benefit of California fisheries to the State of California would be lessened considerably if longlining were allowed. Any one of the reasons given above is sufficient for you to deny the applications. Taken together they are compelling. We urge you to deny the application for experimental longline permits. Common sense and sound evidence demonstrate no benefit will accrue to the people of California by their issuance.

Larry E. Mebust
3632 Walnut Avenue
Long Beach, CA 90807
(562) 426-8400
E-Mail imebust@earthlink.net

RECEIVED

SEP 22 2000

PFMC

Mr. Jim Lone – Chairman
Dr. Donald McIsaac – Executive Director
Pacific Fisheries Management Council
2130 SW Fifth Avenue, Suite 224
Portland, Oregon 97201

September 19, 2000

Subject: Position Paper – HMS Fisheries Management Plan

Gentlemen,

Attached please find my position paper regarding current actions of the HMS plan development team regarding swordfishing. Specifically, I am concerned that the team is considering allowing longline fishing inside the EEZ without a study of future impacts to the fisheries involved. Apparently the team intends a “study as we go” process. If longline fishing is authorized within the EEZ, the fishery will totally collapse by the time the “science” is available. A management plan is long overdue but should not be implemented without definitive science regarding the health of the near shore stocks.

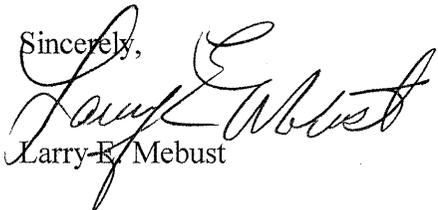
Study First, Then Take Action!

At the start of the plan development project, most of the Team members had no idea that harpoon swordfishing was even a gear-type in California. Thus, I thought it appropriate to provide them the history, development and current state of the fishery. Further, I am concerned that two few of the team members actually understand the damage that longline fishing has done in other parts of our country and the world.

Can the shared California-Mexico near shore swordfish stocks withstand the pressure applied by a minimum of 40 Million additional baited hooks in the water over the next 10 seasons? I don't believe so, but no serious manager of marine resources in his right mind would sign up to such a deal without a scientific study, yet that is precisely what is being proposed.

Please read my paper and distribute it to all Council and HMS team members for action. I will be happy to answer any questions posed by or not answered within the document.

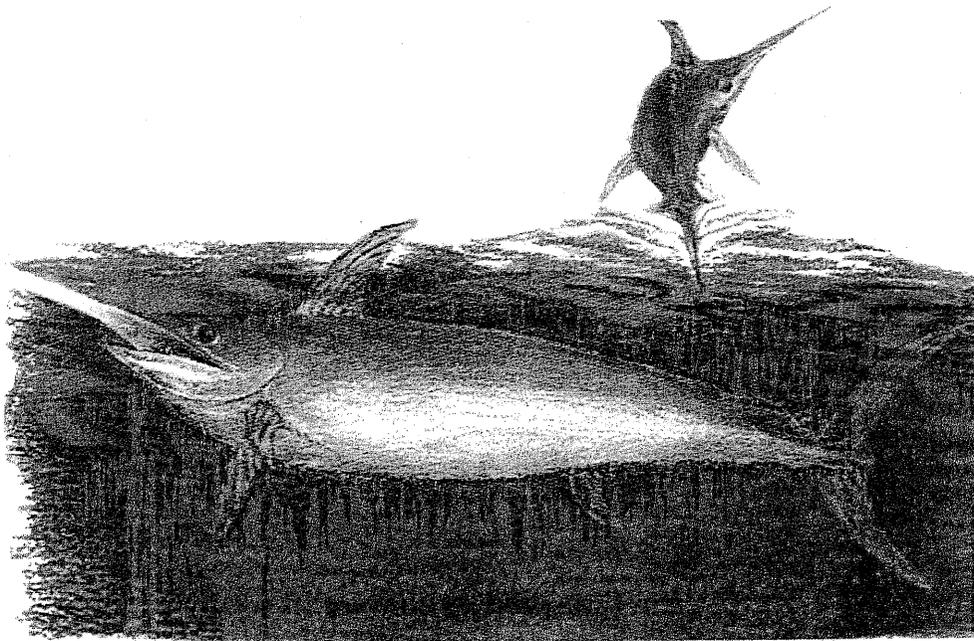
Sincerely,


Larry E. Mebust

HARPOON SWORDFISHING IN THE BIGHT OF CALIFORNIA

PREPARED FOR:

PACIFIC FISHERIES MANAGEMENT COUNCIL
IN REFERENCE TO THE



HIGHLY MIGRATORY SPECIES
FISHERY MANAGEMENT PLAN

Harpoon Swordfishing In the Bight of California

A POSITION PAPER

Researched and written by:

LARRY E. MEBUST

SPOTTER PLANE PILOT AND HARPOON FISHERMAN/BOAT OWNER

Fax & Phone (562) 426-8400

E-Mail imebust@earthlink.net

September 19, 2000

Cover art by Jeffery Earle from Harry Earle's book – **SILENT OCEAN**

This paper is a discussion of the history and future of Harpoon Swordfishing in Southern California. It covers how the fishery operates and how it has been affected by the introduction of new technology and by other fishing methods. Also included is a discussion of the unlimited fishing pressure applied by the Mexican near shore Swordfish fleet.

More importantly, the paper compares the current state of Swordfishing in California and Mexico with the collapse of the Swordfish industry in Chile. The parallels are too frightening to ignore when discussing the future of this fishery.

The conclusions offer some disturbing news. The recommendations offer stringent but necessary management tools for consideration.

HARPOONS...

THE ORIGINAL ROD AND REEL!

“Harpoon Swordfishermen today, as in the past, use their eyes to find the fish. It follows that they see every kind of life that swims on or just below the surface while they fish.

It also follows that when they see very little life swimming around their boat they know something is very definitely wrong. The boat is in the wrong place, or the life is gone!”

Larry E. Mebust

INTRODUCTION

THE CALIFORNIA HARPOON FISHERY for SWORDFISH *Xiphias gladius*
The Harpoon Swordfishery in California is a traditional fishery. It is documented as having been practiced by West Coast Indian fishermen dating back as far as 3,000 years. Modern commercial Harpoon fishing in California began around 1900 utilizing sail powered sloops or schooners. The gear in use today has changed little since then except for the materials from which it is made. With the advent of new fishing methods, harpoon swordfishing will probably never again be the primary way to catch swordfish; but it will always be the leading indicator, or bellwether, by which to measure the health of the stock and thus the performance of those who manage that stock.

TROUBLING LANDINGS DATA

Until the deployment of Drift Gillnets in the late 1970's, the harpoon was the primary gear type in use in California. Since the deployment of the Driftnet, the landing statistics indicate to us that a classic "boom/bust" scenario has already occurred in California's near shore fishery with swordfish landings steadily decreasing since they peaked in 1985.

DRIFT GILLNETS AND LONGLINES ARE TOO EFFECTIVE

Unmanaged or under-managed fishing with both Drift Gillnets and Longlines has been proven to lead to overfishing and ultimately to failed fisheries. Our near shore fishery has for the past ten years, exhibited all classic signs of excessive fishing for swordfish and other species. These gear types have also been proven to produce unacceptable levels of by-catch and discarded catch. These gear problems must now be dealt with objectively; they can no longer be ignored. I tenaciously support every commercial fisherman's right to fish for a living and to feed his family. However, I believe that this right comes with the direct responsibility to fish in a manner that shows concern for the, fish stock as well as the entire ecosystem.

THE WRITING IS ON THE WALL

The California/Mexico near shore fishery for swordfish parallels that of Chile in its evolution: Harpoons to Driftnets to Longlines. Chile began introducing stringent management measures far too late in the evolution to prevent the collapse of its swordfishery. The new measures may someday allow the rebuilding of the Chilean fishery, but for now it is commercially unviable. The recent introduction of Pelagic Longlines into our off shore fishery (outside the 200 mile Exclusive Economic Zone, EEZ) in California is the final requirement for us to evolve into a mirror image of Chile. Hopefully the conservation and management measures evolving from the current efforts of the Council will preclude that evolution.

MORE EFFECTIVE MANAGEMENT IS REQUIRED

My specific concerns are itemized and quantified in this document, as are recommendations for change. New national and international conservation and management measures are desperately needed if swordfishing, and especially Harpoon swordfishing is to remain a commercially viable fishery in California.

THE CALIFORNIA HARPOON FISHERY for SWORDFISH
Xiphias gladius

Today's harpoon swordfishery in California was clearly and in the main, accurately described from both a technical and historical stand point by ATILIO L. COAN JR., MARIJA VOJKOVICH, AND DOUG PRESCOTT in their paper, **The California Harpoon Fishery for Swordfish, *Xiphias gladius***. The historical description in the introduction and many of the statistics utilized in the writing of our paper were obtained from this work. Credits for the usage of their information in are given and herein, their work is referred to as Coan et al, 1994. I disagree with some of Coan's conclusions regarding the California harpoon fishery and discuss these later.

- **Harpoon fishing pressure is limited by nature.**

Harpoon swordfishing in California is limited annually by two major factors. First, swordfish are only found in fishable numbers in the calmer waters of the Bight between June and November. This is due to the annual northwesterly push of the North Equatorial Counter Current. Secondly, the winter and spring weather in the area tends to be too rough to operate in with a harpoon pulpit extended. These two conditions levy a natural, seasonal closure on the harpoon fishery. The other gear types fish in all but the worst of weather conditions.

- **Boat/airplane "team fishing".**

The *boat/airplane team* harpoon fishery, as it is today, began to evolve in the early 1970's when airplanes were introduced. Initially, infighting between the purists and those intent on modernization caused the airplanes to be a very limited factor in the fishery for over ten years. The planes were banned by the DFG for one year during 1976. In 1984, airplanes were finally allowed full time in the fishery. This only occurred after many of the boats had been converted to fish drift gillnets. The modern, I believe technically correct, boat/plane team-fishing model for swordfishing never had a real opportunity to show what it could accomplish in the market place before the near shore swordfish stocks began to show a serious decline in numbers.

- **The harpoon swordfishery produces zero by-catch.**

By-catch in any fishery describes those non-targeted animals that are incidentally or accidentally taken by the fishing gear while fishing for the target species.

Harpoon swordfishing produces absolutely zero by-catch! A harpooner intentionally takes every single fish landed by his boat.

- **Average weight of landed harpooned swordfish.**

Coan et al, 1994, describes the average landing weight of harpooned swordfish during the period 1981 - 1993 as being 85 kg (187.4 lbs.) and explains that they did not have total numbers of fish, only total weight with which to calculate the number.

Coan's average is low when compared to average weight per fish data reported by harpoon boats from landing receipts. My calculations of annual average dressed weight per fish taken by harpoon over the past ten years averages approximately 90.7 kg (200lbs.). This varies from about 195lbs to well over 200lbs on a boat-to-boat basis over the same ten-year period. The primary reason for this higher average weight (than other gear types) is selectivity. Harpooners seldom take juvenile swordfish.

- ***Intentional take of secondary species.***

Some harpoon boats take Mako sharks as a secondary species due to its readily marketable meat. Makos in the one hundred to one hundred fifty pound range tend to be the shark most likely to be taken due to the steak quality of that size fish. In recent years, however, sharks of this size are seldom seen in the Bight. My boat quit taking shark's altogether due to a combination of low price and the modern knowledge about the animals' limited ability to reproduce.

- **Erroneous harpooned shark landings disputed.**

The data indicate that in the late 1960's sharks were not routinely targeted or landed by Harpooners (Coan et al, 1994); this is the norm for the fishery. Table 1 in Coan's work shows that between 1969 and 1974 harpooners landed only 53 Mako sharks, all in 1970. Beginning in 1977, the data show a massive increase in shark landings by harpooners including hundreds of metric tons of Thresher, Mako, Blue and other sharks.

These dramatic numbers are undoubtedly accurate, however harpooners did not take these sharks! The beginning of these landings coincides precisely with the beginning of the drift gillnet fishery. The driftnet fishery was originally licensed as an "Experimental near shore Shark fishery" targeting Threshers and Makos with swordfish as by-catch. By rule, swordfish landings could not exceed shark landings. Coan theorizes that those boats with both permits (harpoon and drift gillnet) simply assigned enough of their sharks to their harpoon catch in order to make their high percentage of swordfish landings appear legal.

At this writing, I understand that due to Coan's work, the Department of Fish and Game and NMFS both understand why these old figures are erroneous. They are, however, part of the record and I mention them for the benefit of others who may read this paper. This "unexpectedly high by-catch problem" must become a lesson learned for those who evaluate future requests for "experimental fisheries."

- **Harpooners service a demanding niche market.**

Harpooners have developed a specialty customer base in the high quality seafood restaurant market. The Department of Fish and Game licenses many of these first quality restaurants as fish receivers. A direct sale to this market produces better income for the fisherman. It rewards his efforts to deliver truly fresh fish to the end user, and assures the customer of a consistently high grade of product.

Only when the fisherman-direct market is satisfied do the harpooners begin to deliver to wholesale buyers. Even wholesale buyers will generally pay more per pound for the

harpoon product than for swordfish caught by other gear types. As a general rule, when a harpooner calls a wholesale buyer to sell fish, those fish are already sold to restaurants by the time of delivery to the buyer. Harpooned swordfish are often referred to by the wholesalers as "cherries" thus acknowledging the high quality of the product.

- **Our markets demand top product quality.**

Harpooners pride themselves on the high quality of their product. This notable quality is due the handling of the fish after it is harpooned.

Once aboard, the fish are bled immediately. This single action improves the color and quality of the meat markedly. (The meat from any fish that dies with its blood in the meat will be darker and stronger tasting than that from a fish which has been bled. Side by side, a steak from a bled fish appears pink or white, while a steak from a fish that died without being bled will appear brown in color.)

After bleeding, the fish are immediately finned, gutted, trimmed and the body cavity thoroughly scrubbed before they are placed in the refrigerated fish hold and iced down. The fish are re-iced after about 12 hours to replace the ice lost in the cooling process.

Most harpooners try to unload their fish within 1 to 3 days after catching them. Although refrigerated swordfish does hold very well, the harpoon customer base generally wants the fish as soon as they can have them.

- **Harpooning is a bellwether fishery.**

Harpooning on the California coast is a fishery in decline. This is because it is becoming more difficult to make a profit with every passing year. The foregoing statement poses the question: 'why is it harder to be profitable'?

Coan's work states "competition from the more efficient drift gillnet fishery since 1980 has resulted in decreases in harpoon catches." I strongly disagree with this statement in two important ways. First, the term *efficient* cannot be applied to the use of gillnets to catch swordfish. They are certainly *effective* at catching sea animals, but efficiency requires getting the job done without creating damage. Secondly, harpooners do not and cannot compete with the drift net fishermen in numbers of fish caught! Harpooners pride themselves on catching and delivering only one thing - high quality fresh swordfish! They are, I believe, willing to live with a Catch Per Unit of Effort (CPUE) that is below that of the other available gear types in order to be selective. However, harpooners, myself included, must remain profitable to continue fishing.

The steadily decreasing catch levels and resulting limits on profitability result directly from a steadily declining stock of fish! It's simple: less fish available to catch = less fish caught = less profitability! There is only one reason for this: the swordfish stocks have diminished due to excess fishing in the near shore waters of both Mexico and the Bight of California, our primary fishing grounds.

Harpooners only fish in the top layer of water where the fish fin or bask. It stands to reason that we only see a percentage of the fish in a given area on a given day. If the stock of fish in that area is healthy, we see plenty of fining fish. If the stock is small, we see very few. Unfortunately, even with the use of airplanes, "very few fish" is becoming the norm.

The near shore harpoon fishery for swordfish is in trouble because the near shore swordfish stocks are in trouble! We are the same bellwether that first forecast the demise of both the North Atlantic and Chilean swordfisheries - the Harpooners.

The U.S. drift gillnet boats are by no means completely responsible for this decline in the near shore stocks. The U.S. flagged driftnet boats are managed to an extent by the CDFG by means of time/area closures. The virtually unmanaged Mexican near shore drift gillnet/longline fleet has landed (and imported to the U.S.) all the swordfish it was capable of catching over the past 15 years. These Mexican landings must be included in any future studies of the health of near shore swordfish stock. The Mexican fleet must also be included by treaty or other means in any viable fisheries management plan affecting California based swordfishermen.

##

TROUBLING LANDINGS DATA

A NOTE ON DATA

The graphs in this section were created using thirty-nine years of landings data obtained from the NMFS database. It should be noted that an average of one metric ton per year of landings shown as “Harpoon” can be attributed to unknown gear types. These are the occasional landings made by purse seine boats and other gear types not normally associated with swordfish.

HARPOON LANDINGS 1960 - 1998

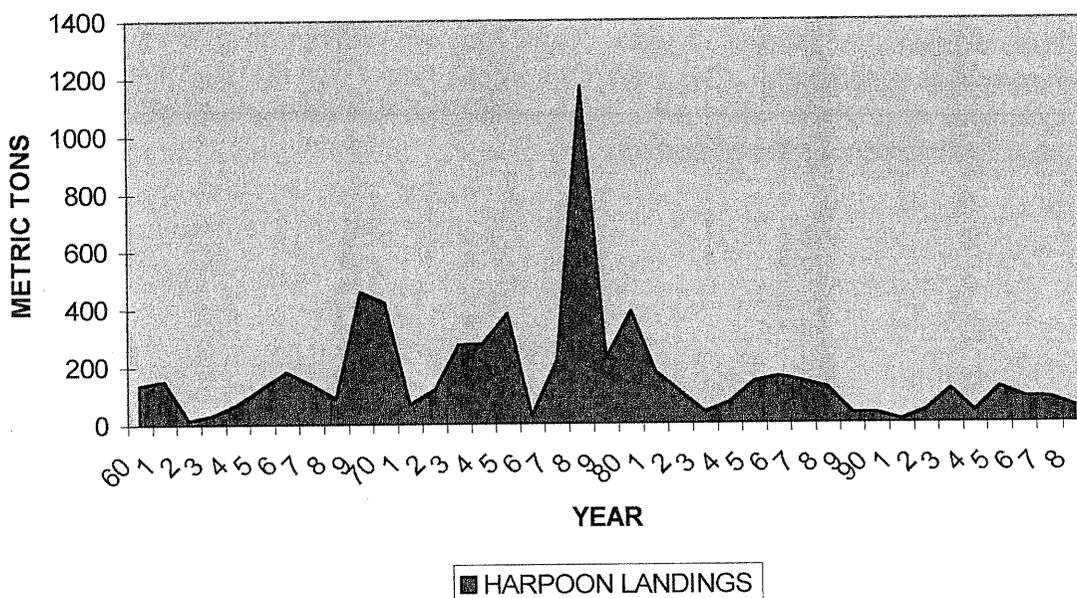


FIGURE 1

Actual harpoon landings – Figure 1

Figure 1 shows the record of landings by the California harpoon fleet for this thirty-nine year (39) period. At first glance the chart would indicate that swordfish just come and go haphazardly in the waters of the California Bight. There is no information to explain the low catch recorded for 1962 except to say, “the fish just didn’t show up.” An over reaction to mercury levels in some international fish stocks caused the 1971 dip; many boats just didn’t fish that year. The 1976 dip was also primarily man-made due to airplanes being totally disallowed by the DFG for that year.

1978 - THE UNEXPLAINABLE YEAR

During this period came the fishing season that no one could have believed and many still don't - 1978. The harpoon boats could go anywhere in the Bight of California and find between ten and twenty fining swordfish in any given day. They could return to the same little piece of water every day with the same results - more fish. From San Diego to

Santa Cruz Island the ocean was alive with swordfish for the taking. Airplanes were the last thing on anyone's mind during this season. There is no harpooner alive today who, having experienced that season, won't tell you that it was a one in a million year. *The current belief about 1978 is that it gave a one-season look at the large stock of swordfish that once populated the near shore waters of southern California and Mexico.*

- Average harpoon landings vs. Aircraft usage – Figure 2

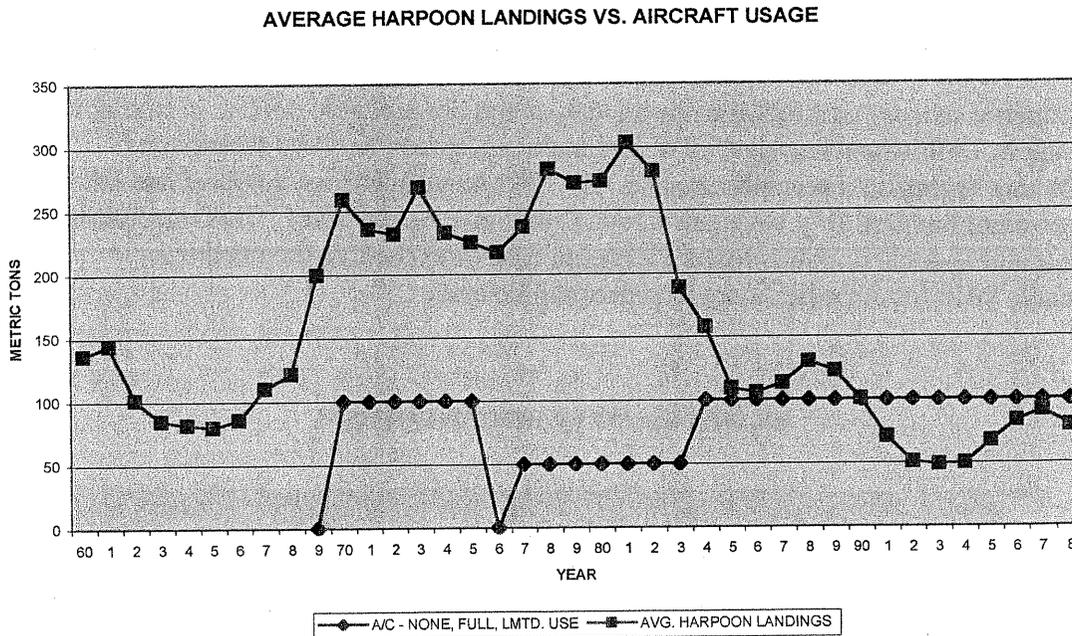


FIGURE 2

NOTE ON DATA POINTS – Figure 2

I have created a **five-year moving average** of harpoon landings to produce a long-term trend analysis of the data. In the interest of smoothing out the radical three year peak in the harpoon graph which was caused by the astounding landings in 1978, the actual data point for 1978 (1171 mt) was replaced with the arbitrary figure of five hundred metric tons (500 mt). This figure serves to acknowledge a great year without creating a misleading three-year peak for the harpoon fleet. The blue (diamond) aircraft data points are arbitrary and only serve to show limits and closures placed on aircraft use.

- **Airplanes – The key to the harpooners success**

Figure 2 shows that even with limited ability to use spotter planes, the landings for the harpoon fishery were trending upwards. Experience dictates a harpoon boat with a spotter plane will catch approximately three times the swordfish than a boat with no airplane. This is due to the plane's ability to see sub-surface fish and those fining fish that are beyond binocular range. Airplanes were finally allowed into the fishery full time in 1984, one year before the drift gillnet fishery peaked and began a precipitous decline in landings.

• **Drift Gillnets – the new swordfishing gear – Figure 3**

During the mid-1970's a few harpoon swordfishermen began to experiment with using drift gillnets to catch sharks. To say the least, this gear proved to be highly effective at catching anything that swam into it, especially sharks and swordfish. They were issued experimental gear permits as a shark fishery. This group of boats generally had drift net gear on the aft deck and a harpoon pulpit on the bow - the best of both worlds. The boats began fishing the nets in 1978, steadily increasing their annual catch of swordfish by an average of nearly five hundred metric tons (500 mt) per year by 1980. This success peaked in 1985 with landings of over twenty four hundred metric tons (2,400 mt) of swordfish alone.

This dramatic success was followed by an almost equally dramatic decline in landings beginning in 1986 when landings fell to just under seventeen hundred metric tons (>1,700 mt) beginning a precipitous slide. By 1991 annual drift net landings had fallen to less than eight hundred fifty two metric tons (>852 mt) for the fleet! This rise followed by a continuing decline, points toward a classic case of exceeding the maximum sustainable yield for a species in a given geographic area.

U.S. DRIFT GILLNET VS. HARPOON LANDINGS

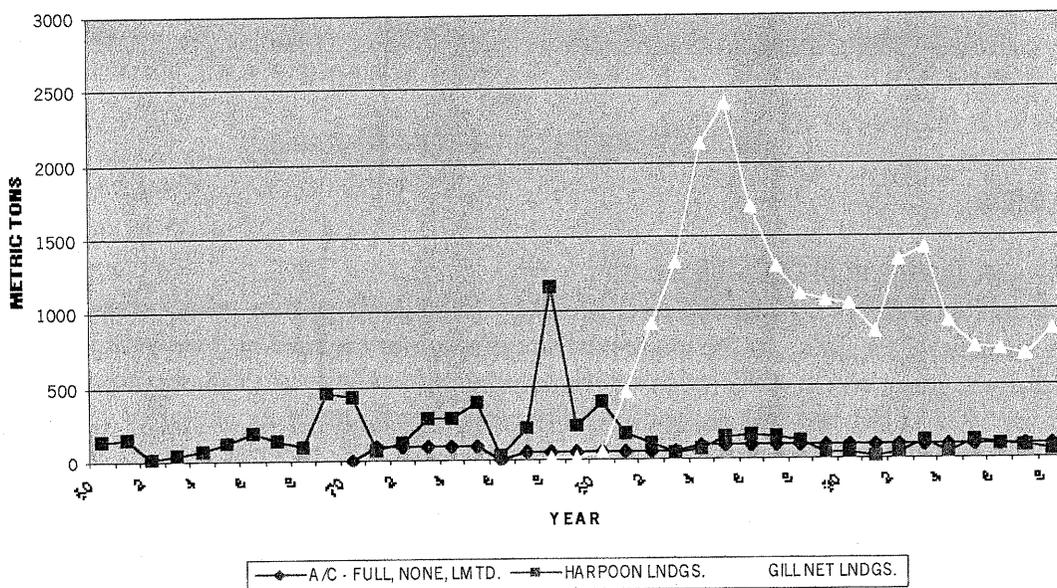


FIGURE 3

The graph (Figure 3) clearly shows a precipitous drop in swordfish landings beginning in 1986. It also clearly shows no signs of recovery for the near shore stock in the Bight. I am quite certain, although *location of catch data* is not available, the sub-peak shown for drift gillnets occurring in 1992 and '93 includes many metric tons of fish that were actually caught outside and above the Bight. I can say this because the drift gillnet fleet

fished along side of us until late October for these two seasons and then moved to northern waters. 1993 was the last profitable year for many harpoon boats.

- **Where did they fish?**

Most of this early catch came from the Bight of California. This was where these new gill-netters had grown up fishing as harpooners so this is where they fished with their driftnets. When, in just a few years, the Bight quit producing swordfish in the quantities they had become accustomed to the larger drift net vessels moved outside the Bight and North, working between the Cortez Bank and central California. By doing so they were able to continue fishing on the near shore stocks of fish that move north from Mexican waters each year. (See also the discussion of the California Bight as a fishery later in this document.)

- **Where do they fish now?**

A group of smaller near-shore San Diego and Los Angeles based drift net boats still fish along the border and in the waters of the Bight. However, because they have had such limited success fishing within the Bight over the past ten years, most of the larger Southern California based drift net boats travel directly to the outer edges of the Bight or to the escarpment between Pt. Conception and Morro Bay when the season opens in August. These boats now follow the fish into northern California and sometimes Oregon State waters before their near shore season ends in January, or when they are forced to move south due to weather.

- **The development of the Mexican fleet.**

In 1985 two of these California drift gillnet fishermen theorized that they could catch more fish in Mexican waters if they could only fish there. With swordfish available year round, they would only have to limit their fishing time during hurricane season.

These Americans approached the Mexican government with a proposal to fish in Mexican waters. In return for their permits they would teach the Mexicans how to fish for swordfish using drift nets. The program was a rousing success. The Mexican fleet of swordfish boats grew dramatically and is still fishing today. Most of the fish caught by this fleet is imported to the United States after being landed in Mexico.

Although only one American captain remains fishing in Mexico today, the fleet is now modernizing itself. **The Mexican fleet, as of this writing, has converted all of its approximately 50 near shore driftnet boats to longline gear** because it is more effective in terms of Catch Per Unit of Effort (CPUE). To my knowledge, Mexico still doesn't impose closures or limits of any kind on its swordfish fleet.

- **Longline fishing – The newest technology**

In 1991, three Gulf of Mexico based longliners arrived in southern California and began test fishing for swordfish and tuna. This fishing was reportedly to be carried out outside of the 200-mile U.S. Exclusive Economic Zone, EEZ. Without observers aboard, it is impossible to tell exactly where the fishing was, or is being, done.

THE NEW IMPACT - LONGLINES

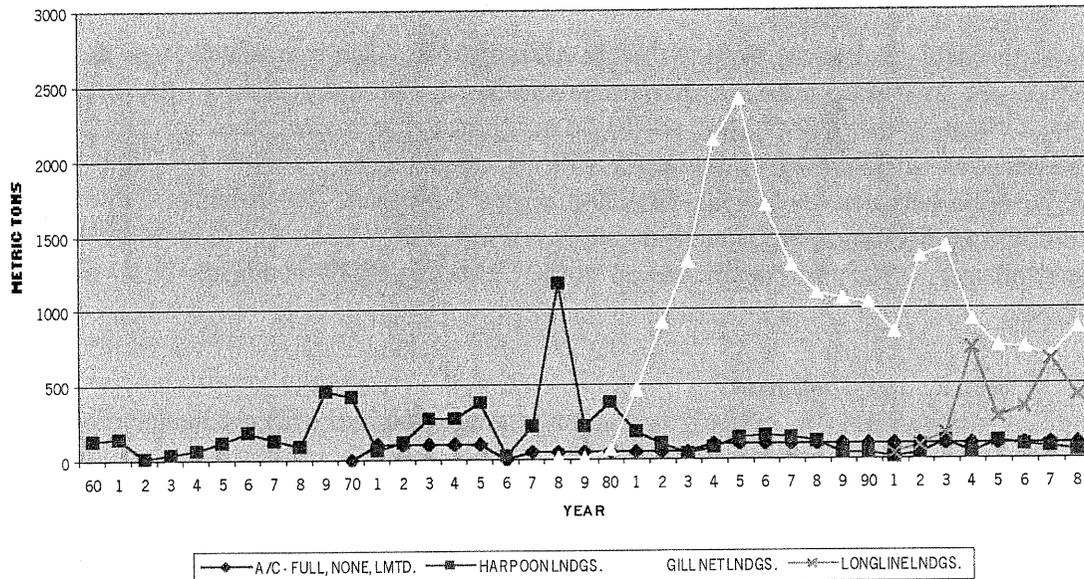


FIGURE 4

- **Longline landings**

According to VOJKOVICH et al 1994, during 1991 and 1992 respectively, these three boats landed 27.5 and 28.8 metric tons of swordfish. In August of 1993, numerous longline vessels from the Gulf of Mexico began arriving in southern California. Landings for 1993 jumped to 101.3 metric tons. In 1994, with thirty-one boats in California, landings were reported to be 496.7 metric tons. Also stated in the Vojkovich paper is the fact that by sampling the catch, **the average weight of the fish being caught was 139 lbs.** The actual sample breakdowns were 13% under 55lbs. with the smallest of these weighing 13 lbs., 35% weighed between 55 and 110lbs., 35% weighed between 110 and 220lbs., with the remaining 17% weighing over 220 lbs. This is the same experience the Chilean longline fleet had just a few years before the fishery collapsed.

- **Updated longline landings information is plotted in Figure 4**

The information contained in Figure 4 is the latest available NMFS data and indicates a much higher success rate during the test fishing and early fleet fishing years. The latest data available shows the 1991 landings to be 39.4 metric tons followed by 95.5, 165.5 and 739.7 for 1992, '93 and '94 respectively. I have plotted the available NMFS landing data for this fishery through 1998.

In addition to the Gulf of Mexico-based fleet fishing off of California, a large group of Hawaiian based longliners set up their operations in Los Angeles harbor in 1999. These boats are now fishing the eastern Pacific stocks that annually feed the California in-shore fishery. I believe the final boom of the classic boom-bust cycle that occurred in Chile is now or soon will be, in full swing in California and Mexico.

**DRIFT GILLNETS AND LONGLINES -
TOO EFFECTIVE AND TOO INEFFICIENT**

EFFECTIVENESS

NOTE ON HARPOON DATA - 1978 - FIGURE 5

I created a five-year moving average of landings for each of the three fisheries to produce a long-term trend analysis of the data. Again in the interest of smoothing out the three-year peak in the harpoon graph caused by 1978, the actual data point for 1978 (1171 mt) was replaced with the arbitrary figure of five hundred metric tons (500 mt).

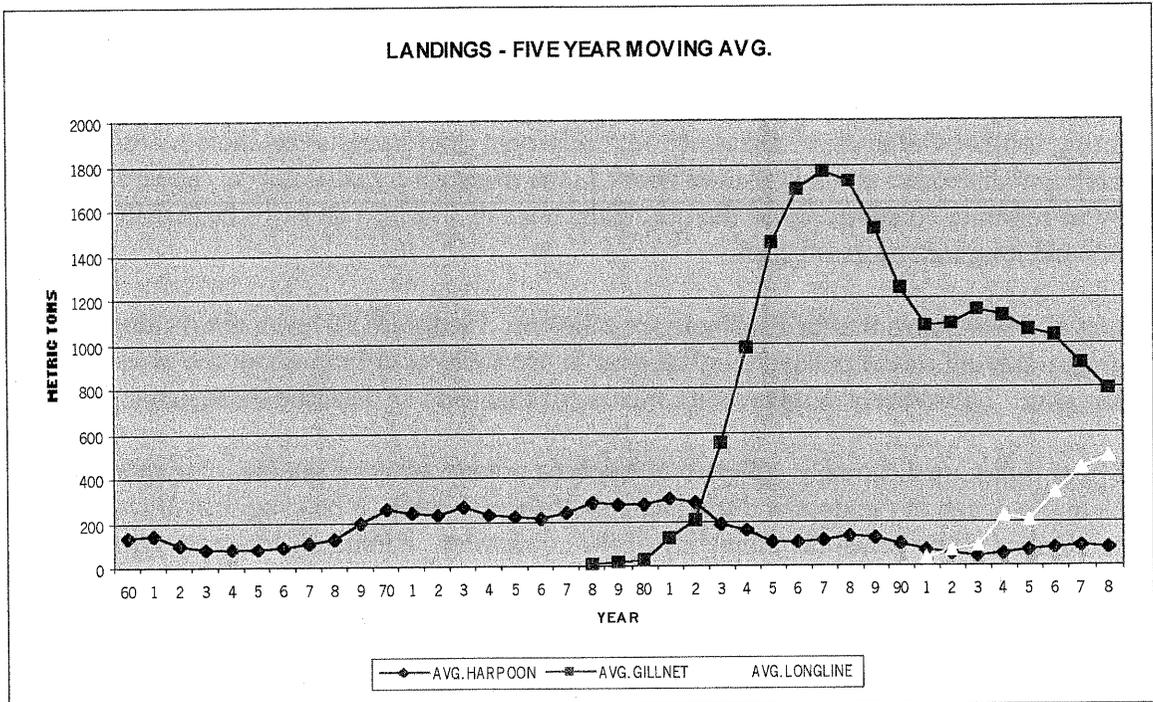


FIGURE 5

- **Harpoon landings**

The graph clearly shows that until the deployment of drift gillnets, harpoon landings were slowly rising. With what is now known (after 1984) about the effectiveness of airplanes in the fishery, a fleet of fifty airplane/boat harpoon teams would have easily stabilized the harpoon landings well above 700 metric tons of swordfish per year with the previously healthy fish stocks.

- **Drift gillnet Landings**

The Figure 5 graph clearly shows a sharp decline in catch after just 10 years of targeted fishing with drift gillnets in the near shore waters of the California Bight. The actual peak of this fishery occurred in 1985, the year that Mexico first deployed drift gillnets. The chart shows a continuing, long-term trend toward further decline in the fishery. I feel this continuous decline in landings must be addressed by the Council as evidence of exceeding the Maximum Sustainable Yield in any plan development process.

- **Longline landings**

It is apparent from the sharp rise of the graph that the longline fleet has targeted the pelagic population of swordfish that exists off our coast and which feeds the near shore and Bight fishery. The graph is almost as vertical as that of the early gillnet efforts. Based upon harpooners visual observations of these longliners unloading, it is logical to forecast the graph will rise much more steeply after the 1999 counts are tallied. It can also be forecasted with certainty that its eventual fall will come, and that its fall will be every bit as precipitous as was its rise. While these predictions are dire they are easy to substantiate. One need only review the landing data, which shows that 50% of the fish being landed are sub-adult pups, not swordfish!

EFFICIENCY

- **Drift gillnets and longlines are not efficient!**

Targeting brother Commercial fishermen for additional grief based upon their levels of by-catch and discarded catch is not the intent in the discussion that follows. The intent is simply to reiterate concerns about the use of the term *efficient* to describe both drift gillnets and longlines as gear types.

Coan et al, 1994 states that drift gillnets are efficient. Lindgram Pittman, the producers of a major amount of the pelagic longline gear in use today also brag about the efficiency of their gear. I absolutely disagree with the use of this term to describe these gears.

Both gear types are extremely *effective* at catching a wide array of sea life. Anything that swims in the ocean at the depths these gears are fished is liable to be caught by them. This statement alone belies the efficiency of the equipment. Efficiency in a gear type requires the ability to routinely target one species or specific size of that species while avoiding the catch of another. Neither of these gear types has been able to stand this test.

My purpose in this paper is to discuss the history and future of harpoon swordfishing. I pointedly leave the discussions about the obviously unacceptable levels of by-catch and discarded catch associated with these gears to others.

THE WRITING IS ON THE WALL

- **Chile – An object lesson for the California/Mexico near shore fishery.**
(NMFS Swordfish Homepage, Link to Latin American page, Chilean summary)

- 1st A Harpoon fishery with long history
- 2nd A shift to Drift Gillnets for higher production
- 3rd Introduce Pelagic Longlines for yet higher production
- 4th Fishery Collapses due to overfishing
- 5th Pelagic longliners move on, Locals go broke!

The boom-bust scenario has been played out again and again in swordfishing all over the world as is well known. The current collapse in the Chilean fishery is one that parallels the Southern California/Mexico situation closely enough to deserve special note. At first it was a highly selective harpoon fishery that exported its' swordfish to the United States. As in California, harpooning swordfish in Chilean near shore waters has been documented as being practiced for hundreds, if not thousands of years.

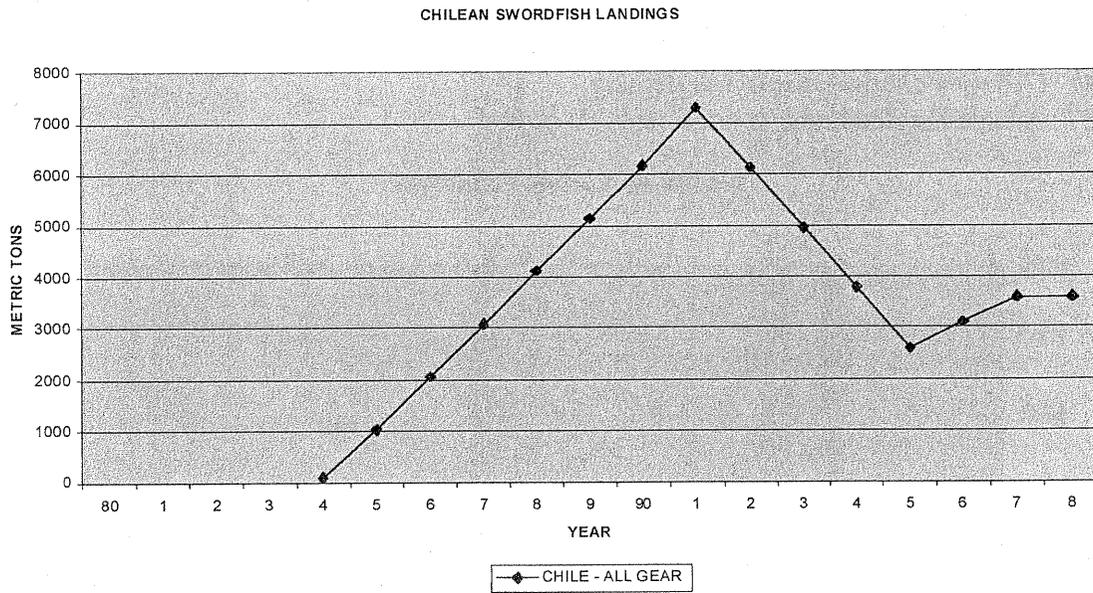


FIGURE 6

NOTE ON DATA – FIGURE 6

There are hard data points for 1984, 1991, 1995 and 1996. There are approximate data points for 1997 and 1998. The rise and fall of the data between 1984 and 1995 was shown as linear due to a lack of precise data. However, this rise and subsequent fall are both described as “steady” by NMFS Swordfish Links, Latin American Swordfish Page, Chilean summary, 1/18/2000. The rise in landings after 1995 reflects a change to fishing outside of the Chilean 200 mile EEZ and off other countries while still landing in Chile.

When man’s inventiveness came into play and drift gillnets were put to sea in 1982, Chile became a major player in the world swordfish export market, again shipping much of its product to the U.S. This driftnet fishery was composed mainly of former harpooners and targeted the near shore coastal waters. The dramatic success of this fishery led to the introduction of pelagic longlines in the mid-1980’s. As in California today, Chilean regulations limited the use of longlines to waters outside of 200 miles. From the start however, as in California today, the longliners reported catching large quantities of juvenile fish. The Chilean near shore fishery peaked in 1991 and has been in a precipitous decline since. By 1995, the international pelagic longliners were finished working Chilean off shore waters because they became economically non-viable. Since 1996, former near shore fishermen now fish pelagic longline gear off other countries.

- **California - A mirror image of Chile**

- 1st A Harpoon fishery with long history
- 2nd A shift to Drift Gillnets for higher production
- 3rd Introduce Pelagic Longlines for yet higher production

Next...

THE WRITING IS ON THE WALL!

- 4th Fishery Collapses due to overfishing
- 5th Pelagic longliners move on, Locals go broke!

CALIFORNIA VS. CHILE LANDINGS

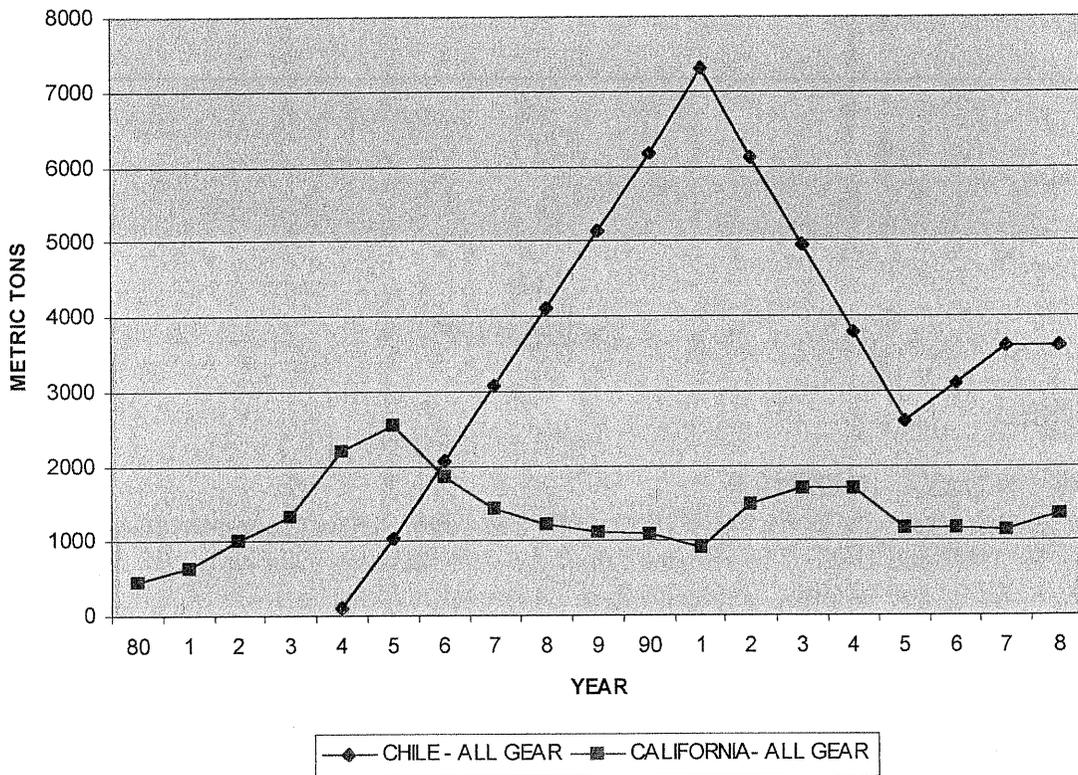


FIGURE 7

NOTE ON DATA FIGURE 7

California swordfish landings for all gear types were totaled to produce this chart comparing the Chilean situation to our own. **If the California numbers are moved six years to the right to create a ten-year overlap presentation, the comparison is chilling.** Only the numbers are different. Attempts to obtain Mexican landing figures for this time period to show the California/Mexico totals were unsuccessful.

Prior to the use of drift gillnets beginning in 1978, the Southern California near shore harpoon fishery for swordfish was viable, healthy and growing. Further, through the use of spotter planes, it was evolving into a technically correct model for the selective, sustainable harvest of swordfish. Drift gillnetting for swordfish in both California and Mexico has now severely diminished our near shore stock. With the introduction of a longline fishery off both California and Mexico (near shore in Mexico), I am convinced that we are witnessing the final few years, if not months, of this fishery's viability unless **emergency international measures** are taken.

Ladies and gentlemen, the crisis is not approaching, it is upon us. A repeat of the Chilean debacle is on our doorstep! Conservation and management measures to prevent such an occurrence are needed immediately.

- **The Bight of California as a swordfishery**

The waters of the Bight are unique. They are not, during our summer, part of the waters of the northeast Pacific, which are fed by the cold California Current. The Bight is annually washed by a swirling influx of warm water from the southeast that in turn displaces the California Current to the west. This annual push is caused by the northern reaches of the North Equatorial Countercurrent that flows northwest up the coast from the Gulf of Panama. In late summer and fall, we know by experience, this push can extend all the way to the Washington border (Jimmy Cornell, North Pacific Currents, WORLD CRUISING ROUTES, 1987).

The waters of the Bight and its outer banks were prime groundfish habitat in the 1960's and '70's. The fishing out of the groundfish from these banks by gear that was too effective has been well documented, is now regulated, and hopefully will be rebuilt. Once these stocks are rebuilt, this habitat will hopefully be managed as the long term, sustainable fishery it should be.

The availability of on-board infrared sea surface temperature SST charts since the late 1980's has allowed us, the fishermen, to watch the ebb and flow of the counter current on an annual basis. By watching this picture change in late spring we can know exactly when to put our boats to sea in search of fish. This knowledge has also led us to the question of why we used to see swordfish all year and now we don't.

It is my theory that once there existed a somewhat stable, resident population of swordfish on our outer banks and those to the south of us. Despite the annual cool down of the water, swordfish were seen in these waters during every month of the year. Many of the older Harpooners can boast of having harpooned swordfish during every month of the year. While large numbers were not caught during the winter months due to weather conditions, a portion of the annual influx probably stayed because they found food in great abundance. Again, with the exception of a very few winter sightings, this has not been the case since the late 1970's. Clearly the explanation of this lies in the statistical facts presented in the portion of this paper dealing with landings over the past twenty-five years.

I also believe that this resident population of fish in the Bight was added to and mingled with, indeed replenished, by the annual push of warm water and migratory fish. Thus, when the fish moved inshore with the current change, local harpooners were actually fishing on a combination of resident and migratory fish. It is obvious from the graphs that this near shore or resident population, if it did exist, was greatly diminished by excessive fishing between 1980 and 1990. Since then, the harpooners have been fishing on the stocks that enter the Bight area from the pelagic migration.

The only alternative to the above theory is that the nearly year round fishing pressure by the Mexican near shore drift gillnet/longline fleet coupled with the annual pressure applied by the West Coast U.S. near shore drift gillnet fleet has resulted in a near collapse of the West Coast near shore swordfish stock. Placing additional pressures on the pelagic migration that obviously feeds this West Coast near shore fishery makes no sense at all.

- **44 Million Additional Hooks IS NOT The Answer!**

The HMS Plan Development Team is currently considering the allowance of longline fishing within the EEZ in California. This is in addition to the pelagic longline vessels currently fishing off of California. The impact of this can only be realized by doing the math.

ASSUMPTIONS:

1. The 80 or so currently permitted California swordfish drift gillnet boats are allowed to convert to longline gear and fish within the EEZ.
2. They are allowed to fish between August and January (5 months).
3. Their gear is limited to 25-mile long sets with 1 hook every 300 feet.
4. They fish 25 days per month.

IMPACTS:

1. Up to 2,000 miles of gear set any night containing 35,200 baited hooks.
2. Each boat will set up to 55,000 baited hooks per season.
3. Total hooks per year = 4,400,000!
4. Total hooks over next ten years = 44,000,000!

The primary point to be made here is that some form of sea creature will eat every one of those millions of hooks! Which creature is simple, the first one that finds the bait.

MORE EFFICIENT MANAGEMENT IS REQUIRED

- **The science is in; the writing is on the wall.**

In Chile, a multi-million dollar export fishery for swordfish and sharks was brought to its knees within twelve years after the unmanaged introduction of drift gillnets and longlines. Chile is no longer a much of a factor in the world market. I quote NMFS Swordfish Links, Latin American Swordfish Page, Chilean Summary, 1/18/00: "Annual results from the fishery do show the classic indicators of overfishing." If that is true, what do our dramatically similar results show?

- **Let the near shore swordfish stocks recover!**

It is high time that we humans stop catching every fish in the ocean just because we can. Nature has repeatedly reminded us that we are capable of overfishing any region. The scorched earth, strip-mining approach to fishing must be brought to an end and replaced with fisheries that are both selective and sustainable. Harpoon swordfishing is one of these and there are many others.

It is apparent however, that if harpoon swordfishing is to ever be given a chance to show itself as the model of a traditional, sustainable and profitable fishery, the near shore stocks in Bight of California and Mexico must be allowed to recover. This recovery process can only be realized by enhancing the annual escapement of swordfish into the Bight of California. The only way to accomplish this is to apply efficient conservation and management measures to current and future West Coast near shore, and now, off shore swordfishing efforts.

Declining landings in the harpoon fishery were the first indicator of trouble in the near shore California swordfishery. The turn-around of this decline will also be the leading indicator, the bellwether, showing that recovery has begun.

RECOMMENDATIONS

There are numerous measures available for managing fisheries. Time-area closures that limit damage to juvenile stocks may be one answer. Another may be imposing quotas on California based boats in addition to limiting imports by Mexican based operators in this unique shared fishery. Further, limited entry to swordfishing must be considered. Finally, the Council and the HMS Plan Development Team must now directly and objectively confront and deal with the unsavory problem of by-catch and discarded catch associated with drift gillnets and longlines.

In addition to offering the above methods for consideration, the writer takes the following specific positions:

1. I strongly oppose the introduction of longline gear inside the U.S. EEZ by anyone for any purpose, experimental or otherwise.
2. I support the immediate, emergency implementation of an observer program on all U.S. flagged longliners landing fish in California coupled with the mandatory installation of electronic tracking gear on these vessels. These two measures should be paid for by a landing fee or tax on all longline fish landed in or imported into the state.
3. In place of a quota system for swordfish take, I support the implementation of a system triggering the immediate shut down of fishing by any gear type if low landing weight averages are detected in that fishery. This trigger should occur when the Department of Fish and Game catch measurements show that thirty percent of the average landing weight has fallen below 150 lbs dressed in any gear type. Discarded juvenile swordfish must be measured at sea and their numbers and weight must be included in this average.
4. I support the establishment of a realistic, *total take* quota system for sharks of all species, including discards, that when reached by any gear type triggers the automatic shutdown of that gear type for the remainder of that season.
5. I support the establishment of a realistic, *total take* quota system for discarded marlin and for sea turtles of all species that when reached by any gear type triggers an automatic shutdown of that gear type for the remainder of that season.
6. I encourage the implementation of import restrictions on Mexican longline swordfish and sharks until the U.S. near shore stocks show signs of recovery.

These management methods penalize no one. Nor do they prevent anyone from fishing. They do however specifically target most areas of concern by specifically targeting the offender on a case-by-case basis.

Whatever steps are taken to reverse the obvious current damage, a rising trend in future harpoon landings will be the first indicator that a reversal has occurred and the near shore swordfish population is on the mend. This trend reversal will only be seen by first preventing a Chilean style devastation of the off shore pelagic migration which feeds and rebuilds our near shore fishery and secondly, by enlisting the help of Mexico in rebuilding our shared near shore stocks.

CLEARLY, SCIENCE MUST PLAY A LARGER ROLE

While researching this paper, I have been constantly reminded that I am not a scientist and that not enough "Science" exists to support my conclusions. My conclusions are based upon the numbers of swordfish and sharks we no longer see and they are backed up by statistics supplied by government agencies! My suspicions are that no scientist in any of these agencies has ever simply graphed out these very compelling statistics. Had this simple thing been done, the question "what's wrong with this picture?" would surely have been asked. Maybe that would have lead to some "real science".

I beg the council and every member of the HMS Plan Development Team to ask that question of the scientific community now and to have it specifically and "scientifically" answered prior to the implementation of a severely flawed HMS Management Plan.

It is quite frustrating to me that yet another swordfishery might be allowed to collapse before the scientific community decides that a study is in order. If we change anything in our fisheries management practices, it must be in the area of providing timely and thorough science to those charged with creating our fisheries management plans.

I thank the Council and the members of the HMS Plan Development Team for the opportunity to present one fisherman's position. I sincerely hope that my presentation provides you with additional perspective to assist in your critical work. I welcome and look forward to your comments.

Sincerely,



Larry E. Mebust

*If open long line fisheries - make it
just for small boats only?*

September 6, 2000

RECEIVED

SEP 18 2000

PFMC

Dear Jim Loan,

Enclosed copy of the log, you may find interesting before Sept 11, 2000.

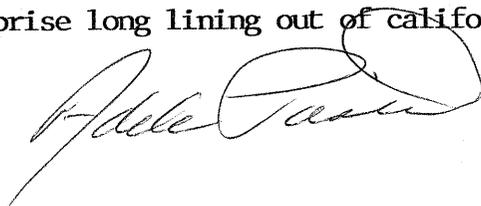
California should be considered in 3 areas, Southern California to point Arguello, to San Francisco, and then to the Oregon Border. Our California population estimated for the year 2000 is 32,472,000. The number of California sports licenses is 1,304,295 in 1999 or one per 24.9 individuals. There are 875,097 state licenses (CF numbers) or one per 37 has a boat of some kind. Documented boats are not in this figure as most of those are picked up in the commercial fishing numbers. The southern California numbers, are 344,834 boats. (CF)..

Commercial fishing for 2000 to present is 3888 resident, and 355 non resident, This figure is down 452 from last year. I feel this represents the boats that are active commercial. Non resident boats are 355, out of state. Commercial operators are 2655 which means there are more boats registered than are active operators. Non resident operators are 553..

In 1991 there were 6744 commercial boats and 6519 had commercial operators licenses. This represents a large drop in 10 years. Each year there has been a drop in the number of fishing vessels. Out of state vessels have increased and these are usually larger vessels. I have a 33 foot vessel and have done long lining, rock fish, chartering. Also I did sea urchins until the crew ran the boat in with the hydraulics on and no oil in the reservoir! I worked on a lot of boats until I could put together my own boat. I hope that by the time I finish getting my boat back together there will still be some kind of fishing I can do.

Right now with rock cod 200 pounds a month does not leave much. It doesn't pay the fuel, after paying 125.00 dollars for a near shore fisheries license either. Keep big enterprise long lining out of California.

Adele Pasiut
3600 Harbor Blvd #307
Oxnard, Ca. 93035



SPORTFISHING

Long-liners want to kill fish closer to the coast



KEVIN MINEO
SPORTFISHING COLUMNIST

Several months ago I was fishing at Lake Hamilton in Hot Springs, Ark. I noticed bright red lines hanging off trees into the water about every 20 feet. I asked my

like thieves in the night. I asked him later if that made him feel good. His reply was that he hoped no one saw us.

I think saltwater "long-liners" are about the same as Arkansas tree liners without the trees. They put out up to 60 miles of line, baited hooks evenly spread and come back later to harvest and to some extent dispose of their kill. There is no question, whatever the targeted species; "bycatch" occurs, which means unwanted fish are caught and killed, then dumped over the side. An experiment here years ago to long-line mako sharks failed since too many unsalable blue sharks were being killed. The guys that want to long-line have some experience at this since some of them now fish with drift gillnets. The trashed fish can range from marlin and sharks to sea turtles. Hawaii banned the practice after a substantial negative impact on nontargeted species.

Right now long-liners are not allowed to ply their trade within 200 miles of the California coast. This results from the fact that the Feds have no policy, so the California DFG rules prevail.

That's about to change. Long-liners have requested we open the 200-mile range to their trade. The Pacific Fisheries Management Council (a group made up of representatives from California, Oregon, Washington, Idaho, the treaty Indian tribes, and one member from the National Marine Fisheries Service) currently and coincidentally is in the process of putting together a fisheries management plan for highly migratory species. This will become federal law and thus preempt California in this area.

I've nothing against long-liners per se. In fact they are doing exactly what Bill Clinton

takes credit for: making a good living the capitalist way in a thriving economy. (There's a rumor that Al Gore has now taken credit for the return of albacore to Southern California.) By the same token, everyone is free to voice his own view and promote his own interests. As a sport fisherman, it doesn't take a lot of heavy thinking to realize letting these guys long-line for the same fish we chase will not be a good thing.

I eat a fair amount of fish, and killing them is the first step en route to my plate, but this long-line method of harvest bothers me. Couple that with self-interest in keeping as many sportfish in the water as possible, the long-liners should be turned down.

Having said all of that, the hullabaloo may be a bit premature since the procedure has a long way to go before anything is locked in. Once PFMF finishes, they submit the plan to the NMFS who, if they like it, then recommends acceptance by the Secretary of the Interior, who generally follows their recommendation. The plan then becomes federal law. If NMFS has a problem with the plan received from PFMF they can send it back to the council for reworking to eliminate their concerns.

PFMC will not produce a first draft until the spring of 2001 at the earliest, and it now looks more likely it will be delayed until the fall. When that draft comes out, public hearings will be held and people can offer oral or written testimony with their views. Bob Fletcher, former member of PFMF and president of the Sportfishing Association of California feels if all went well and the first draft was accepted, the earliest a plan would be in place would be the end of 2001.

Letters to PFMF become part of their record and each commissioner receives a

copy. There is also an opportunity to testify in person before the Council at one of the five public meetings held annually. The next meeting is in Sacramento the week beginning Sept. 11. Writing at this early stage can't hurt and may have more of an impact than an appearance, since your correspondence will be kept on file. If the council recommends long-lining, another major effort can be made after the first draft is published. If you have an opinion and want to make a difference, send a letter to PFMF expressing your views. Clubs could have a major impact by organizing letter writing sessions at their regular meetings, supplying members with different kinds of stationery, envelopes and stamps.

Send your letters to Jim Loan, Chairman, Pacific Fisheries Management Council at 2130 SW Fifth Avenue, Suite 224, Portland, Ore., 97201.

It'll be interesting to watch the process over the next year or so. In the meantime I'm going to try releasing another catfish or two.

Kevin Mineo is an award winning freelance outdoor writer, a member of the Outdoor Writers of California and the Outdoor Writers of America. His opinions do not necessarily reflect the views of The Log Newspapers or its advertisers.

Kevin Mineo and John Grabowski will appear on Pete Gray's radio program "Let's Talk Hookup" on Sunday, Sept. 17, on XTRA radio AM 690.

partner, Bill Elliot, the local Ranger dealer, what was going on. "Trotlines" was his answer. Soon we came to one line that had a catfish thrashing in and out of the water. The fish was struggling against the branch and slowly drowning.

Now we were catching and carefully releasing bass and this method of indiscriminate killing offended me. I suggested to Bill we might release the catfish. He looked at me like I must have recently arrived from California and left my common sense at home. He told me he might know the owner of the tree line, someone might see us, and those people tend to get very agitated when they lose a fish. I told him it could be his good deed for the year and every time he saw a catfish he would remember his act of kindness.

The fish struggled a little more as if to emphasize my point. Saying things under his breath that I'm sure I didn't want to hear, we moved to the captive fish, cut the line as close to the buried hook as possible, and ran

September 6, 2000

James H. Lone, Chairman
Pacific Fishery Management Council
2130 S.W. Fifth Avenue, Suite 224
Portland, Oregon 97201

RECEIVED
SEP 18 2000
PFMC

Re: Proposal to Replace and Allow Drift Long Lines

Dear Mr. Lone:

As I am sure you are aware, there is a controversy brewing because of the Pacific Fishery Management Council's consideration of a proposal to replace drift nets with drift long lines in the Pacific. **Please, please, please** get involved in this matter and understand it before rubber-stamping anything the Pacific Marine Fisheries Council would do in this regard. The decisions affect thousands of sportsfishermen and hundreds of legitimate environmentally-friendly domestic commercial fishermen. This type of fishery is reckless, and the drift nets have already had a substantial impact on the fishing along our California coast. My observations are not speculation, but reality. I had been a commercial fisherman, and am now a recreational fisherman, and have been for over 35 years. The devastating effects of gill nets and long lines are well documented, even to the weekend fisherman. The unnecessary slaughter of the by-catch can be observed while watching a gill netter pull its nets. By-catches on long lines are routinely seen in fishing shows and fishing magazines throughout the nation.

Do I have facts supporting my contentions? Yes. Ten years ago, it was not unusual in a summer month to see, within a 24-hour period, 15 to 20 sharks, mako sharks, hammerhead sharks, and blue sharks. Today, you can fish 10 trips (124 hours) without even seeing a shark. The most sharks I have seen in any one day for over 60 fishing days is three. Marlin are scattered throughout the ocean; rarely do you ever see them balled up in certain areas, such as Catalina, as we have in years past. I know fishermen who fish long lines who will testify that while fishing long lines, herds of marlin which have no market value in California were captured and killed in the nets. A swordfisherman I know who fished with a harpoon for years and later switched to a gill net has told me that after fishing as a harpoon swordfisherman for most of his career, he never saw a swordfish under 80 pounds. However, in his drift net, he killed swordfish 15 to 20 pounds, not to mention blue sharks, whales, and half-eaten (by seals) by-catches.

Let's not be fooled by longliner and gill net fishermen's comments that there is no devastation to the resource, and that the resources are stronger than ever. Let's protect our local resources. Ask people who are fishing what's going on. Ask people who have seen the devastation what is going on. Ask the East Coast fisherman whose fishing was

SD 147414 v 1

James H. Lone, Chairman
Pacific Fishery Management Council
September 6, 2000
Page Two

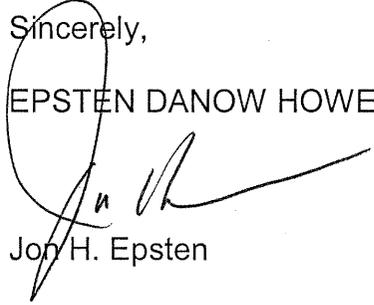
devastated by swordfishing long lines how they affected his livelihood. They literally wiped out the swordfishing on the East Coast. Only after extensive management is it making a comeback.

Even if I was not a fisherman, I would urge you to study this reckless disregard for our ocean and its inhabitants. I am not "Mr. Green" or a member of Greenpeace. I have no interest whatsoever in those organizations. I am speaking from experience. I am speaking from what I have observed. Do not take for granted what we have in our ocean. It is already being severely depleted. This is a serious issue which will have a substantial impact on the recreation and commercial fishermen for many, many years to come. I urge you to pay close attention to what's going on with the Pacific Marine Fisheries Management Council. Also, I would urge you to become familiar with the Magnuson-Stevens Fishery Conservation and Management Act. It is in place for a purpose; let's not abuse it.

Your consideration is most appreciated. I will offer any assistance on my time any way I can.

Sincerely,

EPSTEN DANOW HOWELL & GATLIN, APC



Jon H. Epsten

JHE:dlm

RECEIVED

SEP 23 2000

REMO

Sept. 26, 2000

Pacific Fishing Mgmt. Council
attn: Jim Lone

Dear Sir:

I am a life long sport fisherman. I am deeply concerned about any proposal to allow longline fishing in our waters on any basis whatsoever.

I can not see any benefits to anyone, except longliners, from such a proposal.

However, it is very easy to picture a negative impact on sport fishing from longlining.

I urge you to support and protect sport fishing and the interests of millions of sport fishermen and future generations of fishermen by keeping all longlining out of all of our waters.

The quality and possibly the very continued existence of sport fishing is in your hands.

Sincerely,

Duffy Hansen
1234 Rue St. Moritz
Lake San Marcos, Ca.
92069

Member of
Oceanside Senior
Anglers Club. #
1506 Oake Dr. 73
Vista, Ca. 92084

RECEIVED

SEP 18 2000

PFMC

Dear Mr. Lone,

I,m a member of the Recreational Fishing Alliance (RFA) and I,m extremely concerned that the Pacific Fishery Management Council is considering a proposal to replace driftnets with drift longlines in the Pacific.

The science surrounding this gear is clear- marine mammal interaction is inevitable, as is by-catch of juvenile and unmarketable species, including endangered sea turtles, pilot whales, white marlin and sea birds. To introduce this fishing practice to the waters of the West Coast would be reckless.

The U. S. Senate and the House of Representatives have both recognized longlines for the dirty gear they are- and are addressing the reduction of this gear through the legislative process. Drift longlines and drift gillnets have no place in sustainable and historical fisheries.

I urge you to remove driftnets from the water – but don nor replace them with an unsustainable longline industry.

I now live in Virginia by the mouth of the Chesapeake Bay. I was born in N. C. and lived around the Outer Banks. At 49 I cannot remember any time when I did not own at least one boat, offtimes 2 or more at a time.

With the time my family and I have spent on the water fishing, we have seen most of the species reduce in alarming numbers.

Those who harvest from the sea are the last of the gatherers. A way must be found to allow these people to help replenish or protect the species before the same happens as in every other fishery we have. Help us save what is left.

I FISH, I VOTE

Sincerely,



Charles M. Bain

1409 McNeal Ave.

Norfolk, Va. 23502

(908) 753-6438

E-mail: MerrillJef@aol.com



JEFF MERRILL

Free Lance Writer and Photographer
Salt Water Fishing Lectures and Seminars
Field Editor — The Fisherman Magazine



918 Houston Street

South Plainfield, NJ 07080

September 7, 2000

James H. Lone, Chairman
Pacific Fishery Management Council
2130 S. W. Fifth Ave. - Suite 224
Portland, OR 97201

RECEIVED

SEP 18 2000

PFMC

Dear Chairman Lone:

I am an avid recreational fisherman, part-time outdoor writer, New Jersey representative for the International Game Fish Association and member of the Recreational Fishing Alliance. I am extremely concerned that the Pacific Fishery Management Council is considering a proposal to replace driftnets with drift longlines in the Pacific.

The science surrounding this gear is clear - marine mammal interaction is inevitable, as is by-catch of juvenile and unmarketable species, including endangered sea turtles, pilot whales, marlin and sea birds. To introduce this fishing practice to the waters of the West Coast would be reckless.

The United States Senate and the House of Representatives have both recognized longlines for the indiscriminate gear they are and are addressing the reduction of this gear through the legislative process. Drift longlines and drift gill nets have no place in sustainable and historical fisheries.

I urge you to remove driftnets from the water - but do not replace them with an unsustainable longline industry.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jeff Merrill".

Cc: Mike Leech, President - IGFA
Jim Donofrio - Executive Director - RFA

Dear Chairman Lone,

I'm a member of the Recreational Fishing Alliance (RFA) and I'm extremely concerned that the Pacific Fishery Management Council is considering a proposal to replace driftnets with drift longlines in the Pacific.

The science surrounding this gear is clear – marine mammal interaction is inevitable, as is by-catch of juvenile and unmarketable species, including endangered sea turtles, pilot whales, marlin and sea birds. To introduce this fishing practice to the waters of the West Coast would be reckless

The U.S. Senate and the House of Representatives have both recognized longlines for the "dirty" gear they are – and are addressing the reduction of this gear through the legislative process. Drift longlines and drift gill nets have no place in sustainable and historical fisheries.

I urge you to remove driftnets from the water – but do not replace them with an unsustainable longline industry.

(Please Print)

Sincerely,

Name CLAUDE ASKERNEESE
Address 4764 FORMAN AVE.
City TOLUCA LAKE State CA Zip 91609

Signature

Claude Askerneese

I FISH I VOTE



NoCaliforniaLongliners.com

Mr. Lone & Council,

I am aware that the Highly Migratory Species Development Team is currently evaluating longline gear to be used within California's Exclusive Economic Zone.

One type of fishing gear is harmful enough, allowing longlines and gillnets is a risk I urge you not take. The depletion of targeted species combined with the destruction of "bycatch" waterfowl, turtles, dolphins, and seals is something I am strongly opposed to and I urge you to vote against longlining.

CHRIS MITCHELL

Print

Chris Mitchell

Signature

30 SEP 00

Date

Subject: [Fwd: Fwd: longliners]

Date: Tue, 10 Oct 2000 15:11:26 -0700

From: Daniel Waldeck <daniel.waldeck@mercury.akctr.noaa.gov>

To: "Daniel A. Waldeck" <Daniel.Waldeck@noaa.gov>

----- Original Message -----

Subject: Fwd: longliners

Date: Tue, 10 Oct 2000 14:47:54 -0700

Subject: longliners

Date: Mon, 9 Oct 2000 19:16:01 -0700

From: "Andrew Bodjanac" <andrewbo@utm.net>

To: <sandra.krause@noaa.gov>

To whom it may concern,

I am writing this to voice my opinion in regards to the proposed longliners gaining permission within the 200 mile economic zone off the coast.

I am completely opposed to the California longliners being allowed to 'rape' our ocean, in which I have had the opportunity to enjoy for so many years. The East coast has now seen the devastating effects of longlining, so how can anyone allow that to happen here, as well? I would like to be able to share my love for fishing and tagging/releasing the beautiful creatures of the sea with my children and grandchildren. Allowing longliners to empty our waters of its life would not only be bad for the economy (eg. Charter companies, sportfishing businesses, etc.) but would also be against nature's intended use.

Sincerely,

Andy Bodjanac



NoCaliforniaLongliners.com

Mr. Lone & Council,

I am aware that the Highly Migratory Species Development Team is currently evaluating longline gear to be used within California's Exclusive Economic Zone.

The depletion of targeted species combined with the destruction of "bycatch" - waterfowl, turtles, dolphins, and seals is something I am strongly opposed to and I urge you to vote against longlining.

Selmie Duriano

Print

Signature

Date

10/18/00

As of November 25, 2000, a total of 5 identical cards were receive from different individuals. The original cards are on file at the Council office.

Dear Director Treanor,

I'm a member of the salt-water recreational fishing community and I'm extremely concerned that the Pacific Fishery Management Council is considering a proposal to allow drift longlines in the Pacific.

The science surrounding this gear is clear – marine mammal interaction is inevitable, as is by-catch of juvenile and unmarketable species, including endangered sea turtles, pilot whales, marlin, and sea birds. To introduce this fishing practice to the waters of the West Coast would be reckless

The U.S. Senate and the House of Representatives have both recognized longlines for the "dirty" gear they are – and are addressing the reduction of this gear through the legislative process. Drift longlines and drift gill nets have no place in sustainable and historical fisheries.

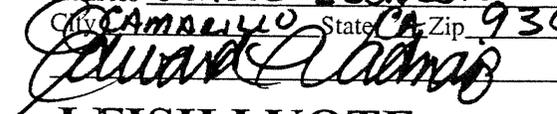
I urge you to remove driftnets from the water – but do not replace them with an unsustainable longline industry.

(Please Print)

Sincerely,

Name EDUARDO L. VAONAS
Address 2 CALLE ESCALON
City CAMARILLO State CA Zip 93010

Signature



I FISH I VOTE

From November 17 to November 25, 2000, a total of 603 identical cards were received from different individuals. The original cards are on file at the Council office.

Subject: Fwd: longlines

Date: Mon, 23 Oct 2000 08:33:00 -0700

From: "PFMC Comments" <pfmc.comments@noaa.gov>

To: daniel.waldeck@noaa.gov

Subject: longlines

Date: Sun, 22 Oct 2000 21:27:48 EDT

From: ILIV4FISH@aol.com

To: pfmc.comments@noaa.gov

dr. mc isaac,

as an underwater photographer, i have seen first hand the
non-selective destruction longlines can inflict on
pelagics.

please say no to longlines.

respectfully submitted,
tim g. simos

Dear Chairman Loe,
I do not think that the Pacific Fishery
Management Council should consider
any proposal to allow drift longlines
in the Pacific. Drift longlines and drift
gill nets have no place in sustainable
and historical fisheries. I think
drift nets should be removed from
our waters, but not to be replaced
by unsustainable longline industry.
Please let our Oceans rebuild their
resources of all species. I am an
avid salt water fisherman. Richard Chaste

Dear James Love,

The Pacific Fishery Management Council is considering a proposal to allow drift longlines in the Pacific. As a sportfisherman, I think this is not a good idea. It will devastate the wildlife of the sea and diminish the Pacific Coast fishing for our country, Canada, & Alaska.

Substituting drift nets with longlines is not a good idea.

Let's save our Sea!

Ms. Loreann Choate
1903 Larkin Rd.

~~San Diego, CA~~

95948