TO: PACIFIC FISHERY MANAGEMENT COUNCIL

PURPOSE: The purpose of this paper is to assist the Council in its decision about management of the West Coast lonlgine fishery by providing information about how the Endangered Species Act (ESA) will be applied in considering the Fishery Management Plan for West Coast Highly Migratory Species Fisheries (HMS FMP) when that FMP is submitted.

BACKGROUND: The Council voted in late 2002 to adopt the FMP for submission to the Secretary for review and implementation. The FMP would have allowed longline vessels to target swordfish in waters east of 150° West longitude (W. long.). The Council was presented with additional information in March and agreed to defer submission of the HMS FMP to allow time for scientists at the Southwest Fisheries Science Center (SWC) to assess whether sea turtle rates east and west of 150° W. long. were statistically different. This is a very important question because, if the rates are identical or similar, then the proposal to allow swordfish targeting by longline vessels east of 150° W. long. should be reconsidered due to the likelihood that sea turtle takes would be in excess of levels consistent with the ESA.

The HMS Plan Development Team (PDT), HMS Advisory Subpanel (ASP), and HMS Subcommittee of the Scientific and Statistical Committee were to meet and discuss with the SWC analysts the results of the review and possibly recommend adjustments in the management measures. The analysis by the SWC scientists indicated that there was no statistically significant difference in sea turtle interaction rates east and west of 150° W. long. Each of the Council's advisory groups will make recommendations based on the discussions following the SWC analysis.

ESA Rrequirements

1. Once the FMP is submitted by the Council, the Southwest Region Sustainable Fisheries Division will initiate a Section 7 consultation under the ESA with the Southwest Region Protected Resources Division. The Sustainable Fisheries Division will provide a Biological Assessment that will estimate the number of sea turtle takes and potential mortalities resulting from the fisheries as they would be expected to operate under the management measures recommended by the Council. The Protected Resources Division will analyze the results and prepare a Biological Opinion that will evaluate the anticipated impacts of the fisheries to determine if the fisheries would jeopardize the continued existence of any listed species

2. The consultation will consider the past and present management programs for highly migratory species fisheries and fishery conditions and the effects on turtles of the full range of activities that are affecting turtles throughout their range in the Pacific as the environmental baseline for the evaluation of the impacts of the sea turtle takes and mortalities ultimately expected from the fisheries operating under the Council's management plan.

3. The consultation will consider the extent to which each fishing sector in the West Coast fisheries interact with sea turtles as well as assess the impacts on sea turtle populations from the

combined take from all fishery sectors. Incidental take allowances (to the extent appropriate) will be specified by fishery sector.

4. If a jeopardy conclusion is reached, a Reasonable and Prudent Alternative will be identified. If there is no jeopardy, the Biological Opinion may still identify Reasonable and Prudent Measures and Conservation Recommendations to reduce adverse impacts or risk to the listed species.

Estimation of Sea Turtle Takes under Longline Management Alternatives

As indicated above, the Sustainable Fisheries Division will estimate sea turtle takes. This will be derived by multiplying 1) expected levels of fishing effort by fishing sector times 2) expected rates of sea turtle interactions. The focus in this paper is on expected longline fishing effort.

A review of vessel activity patterns by SWC staff indicates that about 1.55 million hooks were deployed by longline vessels operating out of the West Coast in 2002. Fishing is typically concentrated in the 1st and 4th quarters and limited fishing would be expected to occur in other portions of the year. It has been reported by industry representatives that the vessels normally move west of 140° W. long. following the fish in the 1st quarter but this has not been confirmed by a review of logbook records. If the fishery is not constrained, it appears reasonable to expect that there would be a continuation of the 2002 effort level. If constraints are imposed, some reduction of effort might occur as vessels could either shift to different fishing strategies or fisheries or shift to other areas (e.g., return to Hawaii).

In considering the options, it would be very helpful for the Council to discuss and estimate whether the 2002 level of effort is likely to continue or would be lower under alternative management decisions. For purposes of discussion, potential scenarios are presented below.

Comparison of Management Alternatives and Associated Estimated Fishing Levels

Alternative 1: No limit on swordfish targeting (ASP recommendation)

If swordfish targeting were permitted everywhere beyond the EEZ, it might reasonably be estimated that fishing effort by West Coast longline vessels would remain at the 1.55 million hook level distributed across all areas, from just outside the West Coast EEZ to waters north of Hawaii. While there might be some increase because the availability of the swordfish targeting option might attract some vessels from Hawaii, there has not been a substantial shift of vessels to California after the initial shift when the swordfish controls were imposed in the western Pacific about two years ago. The Council should consider if this is a reasonable estimate of effort if it were to propose that there be no limit on swordfish sets.

Alternative 2: Allow swordfish targeting east of 150° W. long. (now in FMP)

If swordfish targeting were permitted outside the EEZ and east of 150° W. long., it might be expected that fishing by West Coast vessels would remain at the 1.55 million hook level

distributed across this area to take advantage of this swordfish fishing opportunity. Vessels that have fished as far west as north of Hawaii will relocate recent effort to waters where swordfish targeting is permitted rather than leave the West Coast, or will shift to tuna inside or outside the area. The Council should consider if this is a reasonable estimate of effort if it were to maintain its recommendation that swordfish targeting be permitted east of 150° W. long.

Alternative 3: Limit swordfish targeting to waters east of 140° W. long. (PDT recommendation)

If swordfish targeting were limited to waters east of 140° W. long., then West Coast vessels might be expected to deploy less than 1.55 million hooks in these open waters. The Council should consider and estimate how much fishing would likely occur in waters east of 140° W. long. if the Council were to choose this alternative.

Alternative 4: Prohibit swordfish targeting in all areas (original preferred alternative)

If no swordfish targeting were permitted, some West Coast vessels would likely leave the area altogether; others would likely shift to other gear (although they might test tuna targeting at certain times or in certain areas during the year) or to other fisheries. Zero effort would be expected to be directed at swordfish, though some fishing effort might be directed at tuna.

Other: If some other option to allow swordfish targeting east of 150° W. long. were proposed, the Council needs to estimate the level of fishing effort that would be expected under that option.

Historic interaction rates (per 1,000 hooks)

The Protected Resources Division will establish the sea turtle interaction rates to use. There are two sets of data from which rates of sea turtle interactions with longline gear could be derived: a) pooled data from placements of observers on Hawaii vessels that fished east of 150° W. long. and from placements of observers on vessels that fished out of California; and b) data from only the vessels that fished out of California. The Protected Resources Division has concluded that the pooled data are more likely to be representative of the interaction rates that could be expected than the California-only data. These data cover more cumulative fishing effort, a longer time period, and a broader distribution of effort. There is no sound scientific or statistical basis for using only a subset of the available scientific data and it would be inappropriate to ignore the fact that observations of loggerhead sea turtles were taken in all areas in which fishing was observed. Using both data sets provides more power to examine take rates.

Pooled Hawaii and California observer records

east of 150° W. long.	Loggerhead (LH)	.126	Leatherback (LB)	.034
east of 140° W. long.	Loggerhead (LH)	.044	Leatherback (LB)	.033

Estimated Takes at Different Effort Levels

The derived estimates of the number of sea turtle takes that would occur using these pooled rates and varying levels of fishing effort as follows:

	1.55 million hooks		1 million hooks		.5 million hooks	
	LH	LB	LH	LB	LH	LB
East of 150° W.	198	53	126	34	63	17
East of 140° W.	69	52	44	33	22	17

Differing levels of fishing effort would result in proportionately differing estimates of takes.

The Council's action in 2002 would likely have resulted in continuation of 2002 fishing levels and thus in takes of sea turtles at the levels indicated in column 1. There is no doubt that these take levels would lead to a jeopardy conclusion based on past consultations.

Applicable Mortality Rates

NOAA Fisheries has adopted as national policy the mortality rates to use for different types of sea turtle interactions as follows:

Entanglement, no hooking, release with no apparent injury	0
Any external hooking, with or without entanglement	.27
Internal hooking (mouth or ingested)	.42

A detailed review of observer records would be conducted to determine the percentages of interactions of each type observed for application to the interaction levels estimated for the management measure proposed by the Council. An initial review suggests that most observed takes of loggerhead turtles involve some form of hooking, while leatherback takes are principally entanglements with some involving external hooking. Thus, an average mortality rate of at least .27 might be applied to all takes for an initial estimation of mortalities.

Advisory Comments

1. The incidental allowable take for the drift gillnet fishery is an estimated take of 9 leatherback turtles in 3 years and 5 of loggerhead sea turtles in any El Nino year; the incidental take allowance for the western Pacific longline fishery is an estimated 8 takes of leatherback turtles and 14 takes of loggerhead turtles per year.

2. The Council should expect that any proposal that would allow higher number of takes in the West Coast longline fishery than allowable takes in other permitted fisheries (drift gillnet or western Pacific longline) would likely result in a jeopardy opinion and would require modification before being approvable.

3. Allowing swordfish targeting by the California longline fishery without restrictions beyond the EEZ would be expected to result in at least a continuation of the 2002 fishing effort and subsequently in takes of turtles at about the levels shown in columns 1 and 2 (p.4). The Council should expect that this would result in a jeopardy conclusion and would not be approved.

4. The Council should expect that allowing swordfish targeting east of 150° W. long. would result in a jeopardy conclusion and not be approved. Sea turtle takes would be estimated to reach the levels shown in columns 1 and 2 (p. 4) unless it could be demonstrated that expected effort should be much lower than historic levels (e.g., less than 500,000 hooks per year) and that ensuing sea turtle takes would be lower than levels authorized for other fisheries. The Council should discuss and document for the record the rationale if it adopts this position.

5. The Council should recognize that allowing swordfish targeting east of 140° W. longitude has a substantial risk of resulting in a jeopardy conclusion and not being approved unless the Council can demonstrate that fishing effort will be well below the recent effort (1.55 million hooks) and that ensuing sea turtle takes would be less than levels authorized for other fisheries. If the Council chooses this option, it should be because the Council has reason to believe that actual effort under this alternative would be low and that ensuing sea turtle takes would be lower than estimated above. The Council should discuss for the record its rationale if it chooses this alternative.

6. The original preferred alternative (prohibiting swordfish targeting by the California fleet) would result in low likelihood of sea turtle interactions as no longline fishing would be directed at swordfish, though some could occur that would be directed at tuna. No tuna trips have been observed by observers placed in California, but data collected by observers on Hawaii-based vessels suggest that sea turtle interactions in such sets are less frequent.

Exhibit F.2.b
Supplemental PowerPoint Presentation
June 2003

An analysis of sea turtle take rates in the high-seas longline fishery in the eastern Pacific ocean.

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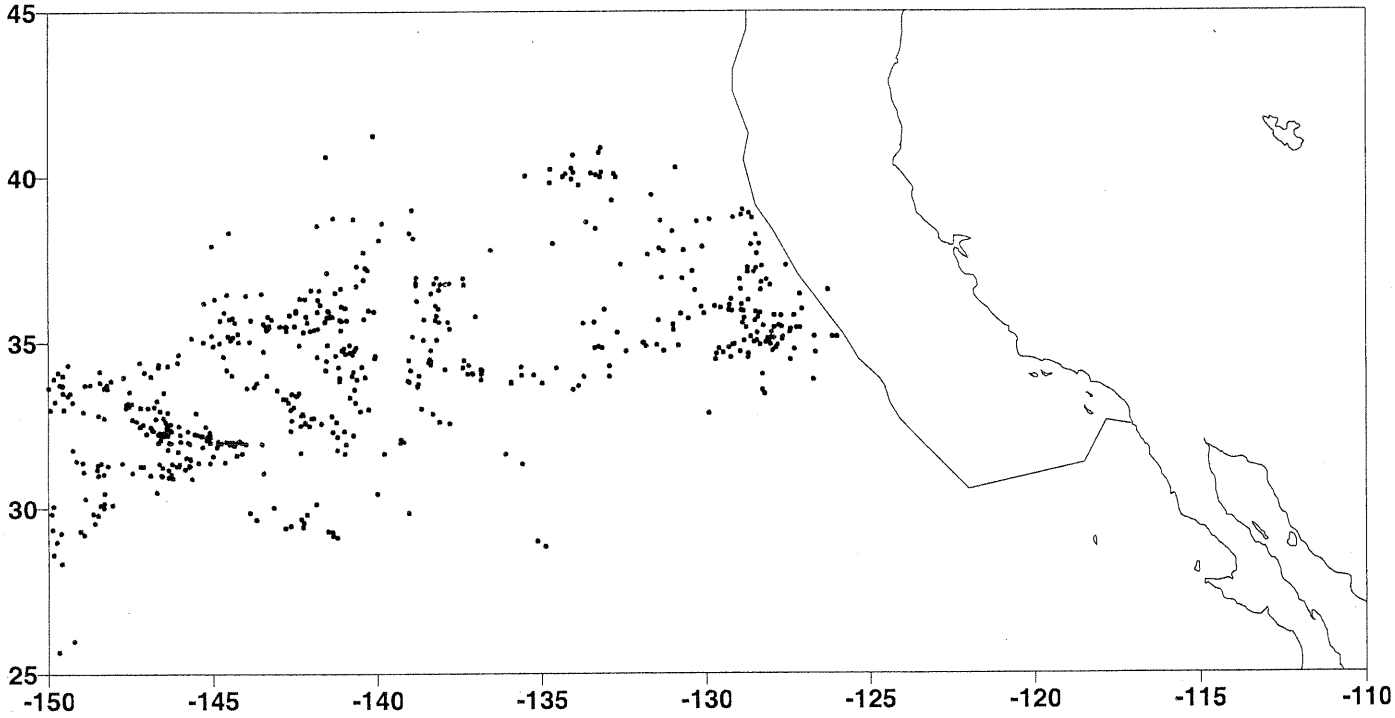
Distribution of HI/CA sets

Hawaii (1997-2001) and California (2001-2003) observed longline sets. n = 586 sets



The Data

	West of W150	East of W150
	1994-2002	1997-2003
	Bill Walsh (Honolulu)	*Lyle Enriquez (Long Beach)*
		plus Honolulu Data
Leatherback Entanglements	32	15
Loggerhead Entanglements	129	50
Hooks Observed	1,513,596	444,833
Sets Observed	1,875	586
California Sets / Trips	0 / 0	198 / 9
Hawaii Sets / Trips	1875 / 149	388 / 29
California / Hawaii Vessels	0 / 50	10 / 35
Mean Hooks per Set	807	759
Leatherbacks per 1000 hooks	0.021	0.034
Loggerheads per 1000 hooks	0.085	0.112
Sets with Leatherbacks	32	15
Sets without Leatherbacks	1843	571
Sets with Loggerheads	129	50
Sets without Loggerheads	1746	536

Set, trip, and vessel summary for all data (West vs East of W150)

SETS

	West	East	All sets
CA sets	0	198	198
HI sets	1875	388	2263
All sets	1875	586	2461

TRIPS

	West	East	All trips
CA trips	0	9	9
HI trips	149	29	178
All trips	149	38	187

VESSELS

	West	East	All vessels
CA vessels	0	10	10
HI vessels	50	35	85
All vessels	50	45	95

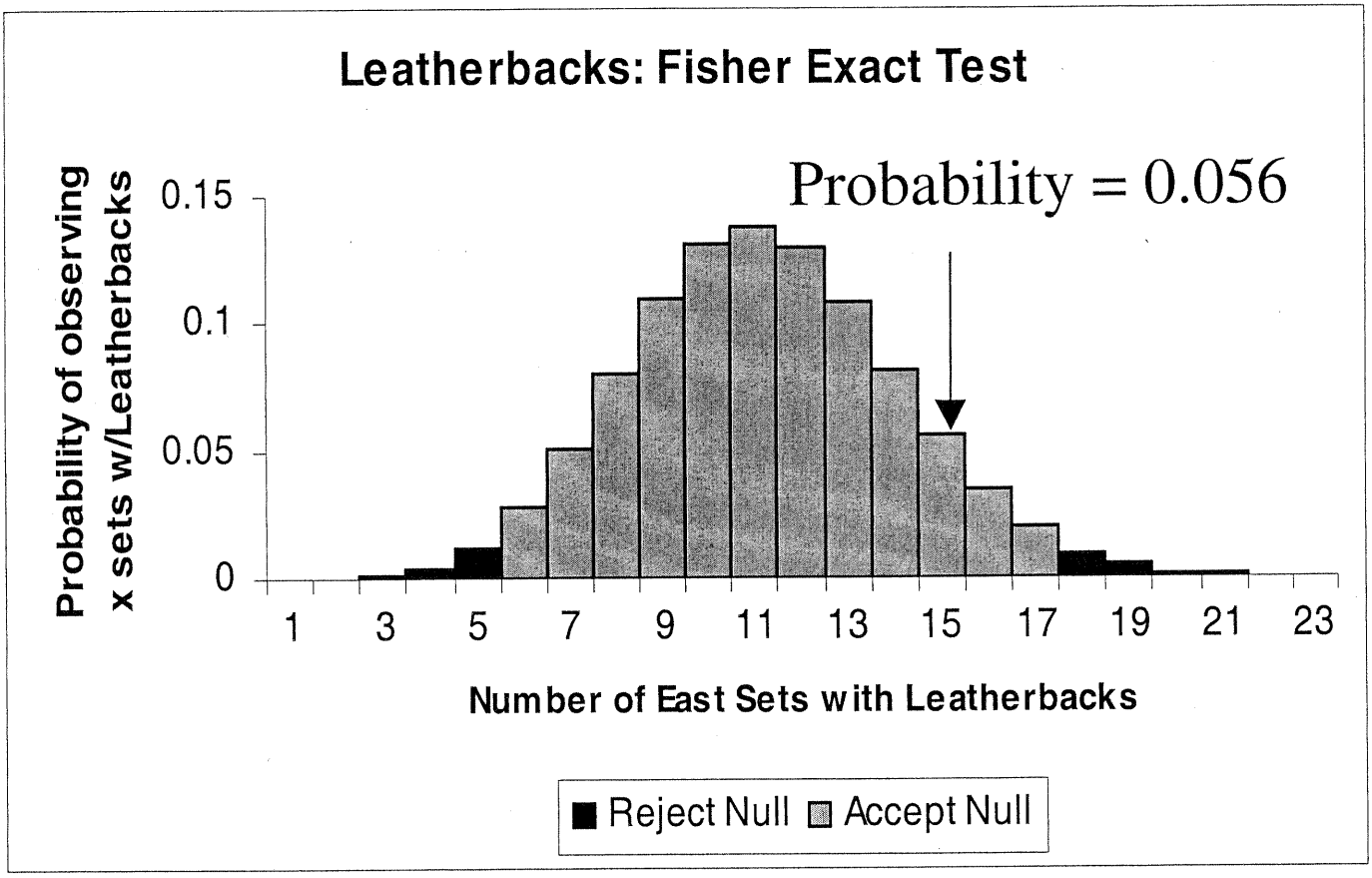
Leatherback Fisher test

Leatherback 2x2 Contingency Table

	West	East	All sets
Sets with Leatherbacks	32	15	47
Sets without Leatherbacks	1843	571	2414
All sets	1875	586	2461

$$P = \left(\frac{R_1! R_2! C_1! C_2!}{n!} \right) \Big/ f_{11}! f_{12}! f_{21}! f_{22}!$$

Leatherback probabilities given true null hypothesis of West = East

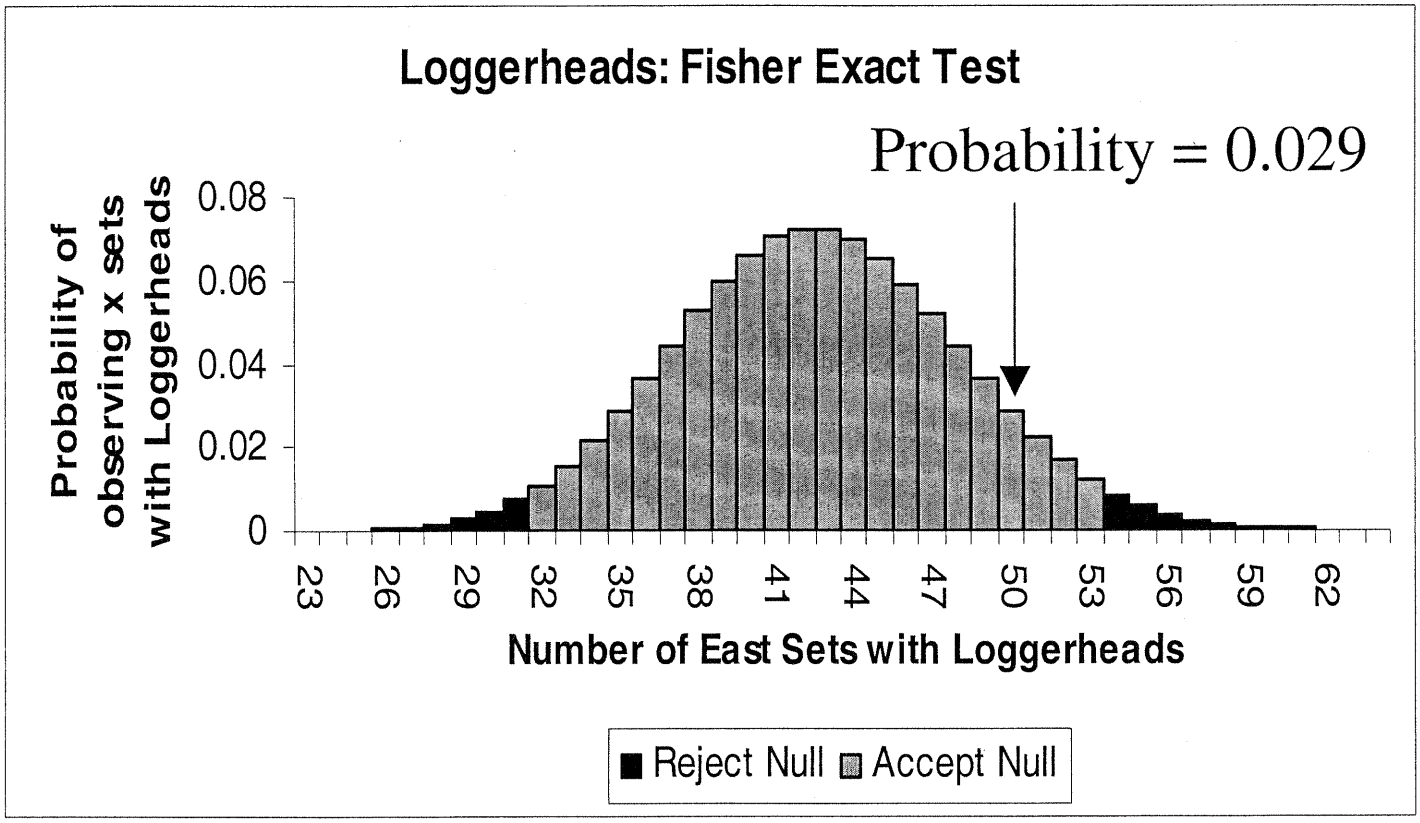


Accept Null hypothesis, p = 0.226 (sum of values as or more extreme than observed)

Loggerhead Fisher test

Loggerhead 2x2 Contingency Table

	West	East	All sets
Sets with Loggerheads	129	50	179
Sets without Loggerheads	1746	536	2282
All sets	1875	586	2461



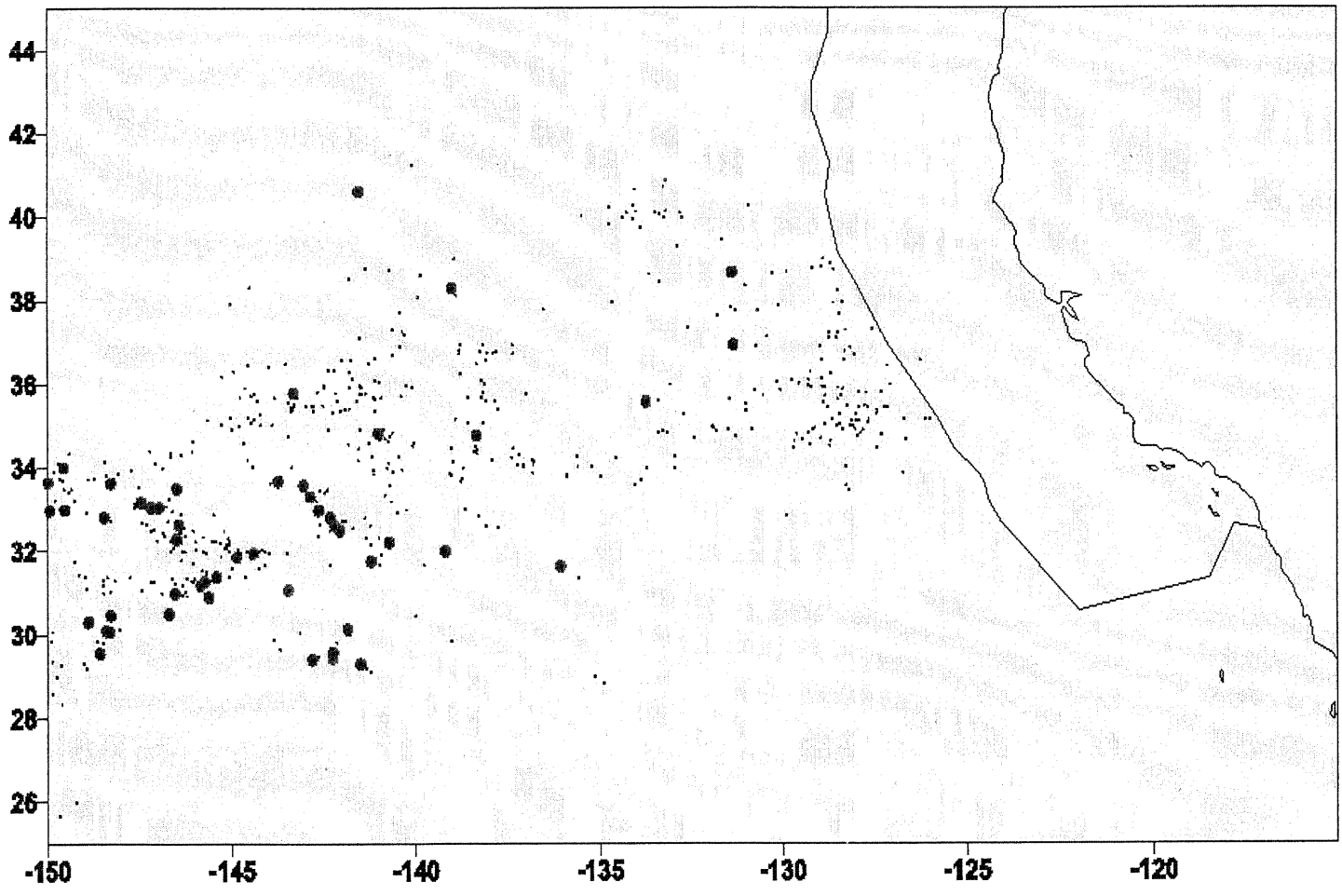
Accept Null hypothesis, p = 0.202 (sum of values as or more extreme than observed)

Summary

	Proportion of Sets with Turtles		
	West of W150	East of W150	p-value
Loggerhead	6.8%	8.5%	0.202
Leatherback	1.7%	2.5%	0.226
	Turtles per 1000 hooks		
Loggerhead	0.085	0.112	
Leatherback	0.021	0.033	
	East of W150: Proportion of Sets with Turtles		p-value
	1st Quarter	4th Quarter	
Loggerhead	17.0%	3.5%	0.0002
Leatherback	0.0%	4.5%	0.000

Observed sets/takes east of W150

Turtle Takes 1997-2001 (Hawaii fishery) and 2001-2003 (CA fishery). 586 sets
Red = 56 Loggerhead
Yellow = 15 Leatherback
Pink = 2 Olive Ridley
Black (sets)



210 of 586 sets in 1st quarter (193 west of W140)
310 of 586 sets in 4th quarter (142 west of W140)

East of W150: Higher take rates of loggerheads west of each line, 'statistically equal' take rates of leatherbacks either side of line.

	W130	Fisher 2-tailed p
Loggerhead		0.00
Leatherback		0.97
	W135	Fisher 2-tailed p
Loggerhead		0.00
Leatherback		1.00
	W140	Fisher 2-tailed p
Loggerhead		0.00
Leatherback		1.00
	W145	Fisher 2-tailed p
Loggerhead		0.009
Leatherback		0.58

Leatherbacks: East of W150, 1st vs 4th quarter

Leatherback 2x2 Contingency Table

	Area East of W150 only		
	1st Qtr	4th Qtr	All sets
Sets with Turtles	0	14	14
Sets without Turtles	210	296	506
All sets	210	310	520

Loggerheads: East of W150, 1st vs 4th quarter

Loggerhead 2x2 Contingency Table

	Area East of W150 only		
	1st Qtr	4th Qtr	All sets
Sets with Turtles	36	11	47
Sets without Turtles	174	299	473
All sets	210	310	520

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL STATEMENT ON MANAGEMENT OF THE HIGH SEAS LONGLINE FISHERY

After considering the analysis of longline interactions with turtles presented at the April 29, 2003 meeting in San Diego, the Highly Migratory Species Advisory Subpanel (HMSAS) reached a consensus to support the current preferred alternative (Alt. 2) with one modification. The HMSAS recommends deleting all references to restrictions on swordfish targeting and the 150_ W longitude line. The data presented by National Marine Fisheries Service (NMFS) indicate the 150_ W longitude division was not meaningful in terms of avoiding turtle interactions. The HMSAS did not want the Biological Opinion that will be prepared by NMFS under the Endangered Species Act to be constrained by this artificial line.

The HMSAS proposes the following language for Longlining Outside the Exclusive Economic Zone, Alternative 2, in chapters 8 and 9:

> Alternative 2 (Proposed): Adopts selected seabird and sea turtle measures currently required for the Hawaii-based longline fishery. These are measures Nos. 1, 4, and 8 in Chapter 8, section 8.5.2, and would also include measures for proper handling and release of seabirds and turtles, Vessel Monitoring System (VMS), and the requirement for vessel operators to attend a protected species workshop each year, as offered on the West Coast or in Hawaii (as described at the end of that subsection).

The HMSAS recommends the Pacific Fishery Management Council (Council) adopt the fishery management plan (FMP) at their June meeting with these modifications and submit it to NMFS as soon as possible for approval.

In a related matter, the HMSAS recommends the Council rapidly proceed with an FMP amendment to institute a limited entry program for the high seas longline fishery. This would prevent significant increases in effort and the accompanying impacts on listed species. The HMSAS recommends the Council consider ways to implement an immediate cap on effort, to be in place during the amendment development process. NMFS may be able to advise the Council on how this was accomplished for the pelagic fisheries in the western Pacific.

PFMC
05/30/03

Highly Migratory Species Plan Development Team Report to the Pacific Fishery Management Council - June 2003

The HMS Plan Development Team (PDT) met April 29-30, 2003 during joint meetings with the HMS Advisory Panel, and the HMS Subcommittee of the Scientific and Statistical Committee, at Hubbs Sea World Conference Center, San Diego, CA. After considering the statistical analysis presented by Jim Carretta (NMFS, SWFSC, La Jolla, CA), the team decided to recommend to the Council to stay with present Alternative #2, but

1. shift the longitudinal boundary line from 150°W inshore to 140°W to minimize interactions with sea turtles, particularly loggerheads,
2. immediately begin the limited entry process, and
3. increase observer coverage in this fishery to at least 20%.

Rationales are:

1. Highest turtle take rates are observed in the most western portion of the 'east' area.
2. East of 140°W, no Ridleys taken and Loggerhead takes significantly lower than to the west (out to 150°). See Attachment A.
3. Leatherback takes are similar east and west of 140 °W, but because of few encounters, any difference is not statistically significant.
4. 140 °W is thought to be the boundary of economic feasibility for CA-based longliners.
5. Present observer coverage and duration is inadequate for evaluating extremely rare encounter events with protected resources.

Based on the most current data available, the PDT was unable to propose specific measures for protecting leatherback turtles, since data are too few for meaningful analysis in the eastern area and analysis of the fishery impacts of a closure in the species' cone-shaped migratory corridor could not be prepared prior to the June meeting. It was noted that California-based fishery take rates are based on only 2 interactions on 6 observed trips, with high accompanying CVs. It is assumed that on submission of the Plan to the Department of Commerce, NMFS will enter into consultation concerning the Pacific leatherback sea turtle. If jeopardy is found for this species, with swordfishing allowed east of 140°W, the team recommends that NMFS include in the RPAs a seasonal closure defined by the cone-shaped migratory route of leatherbacks (as per recent satellite tagging data, Attachment B).

The team recommends the following changes in the High Seas Longline Section of Chapter 8:

Outside the EEZ:

Alternative 1 (No Action): No action (status quo).

States' regulations would apply to longline fishing and landings and federal regulations may be developed under other authorities. Vessels would have to obtain HSFCA permits and file HSFCA logbooks, as is now the case.

Alternative 2 (Proposed Action): Applies to West Coast - based longline vessels *selected* conservation and management measures currently applied to Hawaii-based longline vessels to control sea turtle and seabird interactions and to monitor the fishery. Allows continued targeting of swordfish east of 140° W longitude, but not west of that line (to minimize sea turtle interactions). Hawaii management measures adopted listed below under Alternative 3, except measures 2-7, would apply to vessels fishing east of

140°W. All measures (1-9) would apply to vessels fishing west of 140°W. The adopted regulations include measures for avoidance, release and handling of turtles and seabirds, and requirements for attending protected species workshops and for Vessel Monitoring Systems. Except for the two-month closure indicated in measure 4, allows targeting of non-swordfish species (other than 'prohibited' species, Chapter 8 section 8.4.7) throughout the high seas. Additionally, this alternative calls for immediate action on implementing a limited entry program, an increase in observer coverage to at least 20%, and close monitoring of the fishery with regular status reports provided in the annual SAFE report. Recommends an area-season closure, if needed, in the migratory pathway of leatherback turtles (Oct-Dec).

Rationale: A viable West Coast fishery for swordfish could continue net national and regional benefits if such fishing can be non-harmful to protected and other non-targeted species. Closure to swordfish targeting west of 140° W longitude should significantly reduce turtle interactions in this fishery, but close and adequate fishery monitoring is needed, and quick action is required to control further expansion of this fishery.

Alternative 3: Applies to West Coast-based longline vessels *all* conservation and management measures applied to Hawaii-based longline vessels to control sea turtle and seabird interactions and to monitor the fishery. Future measures are to be developed by PFMC in cooperation with other regions/Councils.

Under this alternative, longline vessels operating on the high seas outside the EEZ would be subject to the same controls that apply to Hawaii-based longline fishing vessels holding longline permits. These are as follows:

1. Line clippers, dip nets, and bolt cutters meeting NMFS' specifications must be carried aboard each vessel for releasing turtles (specifications vary by vessel size);
2. A vessel may not use longline gear to fish for or target swordfish (*Xiphias gladius)* north of the equator (0° latitude); landing or possession of more than 10 swordfish per trip is prohibited.
3. The length of each float line possessed and used to suspend the main longline beneath a float must be longer than 20 m (65.6 ft or 10.9 fm).
4. From April 1 through May 31, a vessel may not use longline gear in waters bounded by 0° latitude and 15° N latitude, and 145° W longitude and 180° W longitude;
5. No light stick (any light emitting device for attaching underwater to the longline gear) may be possessed on board a vessel;
6. When a longline is deployed, no fewer than 15 branch lines may be set between any two floats (10 branch lines if using basket gear);
7. Longline gear must be deployed such that the deepest point of the main longline between any two floats, i.e., the deepest point in each sag of the main line, is at a depth greater than 100 m (328.1 ft or 54.6 fm) below the sea surface;
8. While fishing for management unit species north of 23° N latitude, a vessel must:
   - Maintain a minimum of two cans (each sold as 0.45 kg or 1 lb size) containing blue dye on board the vessel during a fishing trip;
   - Use completely thawed bait to fish for Pacific pelagic management unit species;
   - Use only bait that is dyed blue of an intensity level specified by a color quality control card issued by NMFS;
   - Retain sufficient quantities of offal for the purpose of discharging the offal strategically in an appropriate manner;

- Remove all hooks from offal prior to discharging the offal;
- Discharge fish, fish parts (i.e., offal), or spent bait while setting or hauling longline gear on the opposite side of the vessel from where the longline is being set or hauled;
- Use a line-setting machine or line-shooter to set the main longline (unless using basket gear);
- Attach a weight of at least 45 g to each branch line within 1 m of the hook; and
- Remove the bill and liver of any swordfish that is incidentally caught, sever its head from the trunk and cut it in half vertically, and periodically discharge the butchered heads and livers overboard on the opposite side of the vessel from which the longline is being set or hauled.

9. Adopt measures for the proper release and handling of turtles and seabirds, the requirement for vessel operators to attend a protected species workshop each year, and the requirement for Vessel Monitoring Systems (VMS). VMS is required because the proposed action involves area-specific regulations.

At the June 2003 Council Meeting, the PDT will present an analysis of fleet economic impacts (RIR/RFA) under the proposed 'modified' Alternative # 2, which would prohibit swordfish targeting west of 140°W longitude. It is expected that closure of the area west of 140°W longitude may significantly lower total existing swordfish targeting effort, as the fleet will no longer be able to follow swordfish into the area between 140°W longitude and 150°W longitude in the first quarter of the year.

The PDT notes that the pelagic longline fishery is an existing fishery, that it is not currently subjected to the Western Pacific Fishery Management Council recommendations, and that there are impacts of imposing regulations.

The PDT recommends that the Council begin a limited entry program for the west-coast based pelagic longline fishery to be adopted as an amendment within the next 12-18 months. The PDT is willing to follow Council guidance, and in conjunction with the Advisory Subpanel, to help develop regulations that are required in an amendment for limited entry.

The PDT also recommends a common Biological Opinion on sea turtles that encompasses the areas of both the Pacific Fishery Management Council and the Western Pacific Fishery Management Council. Such an approach would be more unified, consistent and biologically realistic, since the same stocks interact with fisheries in both regions, sometimes in the same areas. Such a single Biological Opinion would encompass the entire stock of sea turtles and the total, often fluid, fishing effort on swordfish and sea turtle mortality, provides a unified, consistent scientific methodology with the same or similar assumptions and methods to support any quantitative and qualitative conclusions concerning stock-wide impacts of fishery interactions and recommendations for mitigation. A single, area-wide and formal Biological Opinion, with its best available and unbiased science, would also raise the confidence of all sectors of the public in the outcome of the Biological Opinion.

Background. (1) The Western Pacific Fishery Management Council will, at its 118th meeting, discuss changes to the current management regime for the Hawaii-based pelagic longline fishery. The recent Biological Opinion (BO), published by NMFS on November 15, 2002, found that the Hawaii-based longline fishery under its current management regime no longer jeopardizes the continued existence of loggerhead, leatherback, and green sea turtles. The Council will consider whether changes can be made to the Northern and Southern Area Closures, that result in similar levels of conservation for sea turtles, but which reduce the economic burden on the fishing industry. The Council may explore options to permit some shallow set swordfish longlining between the equator and some specified latitude, should it be shown that this would not result in major increases in longline-turtle interactions.

(2) The sea turtles are a common-pool, transnational migratory resource, whose migrations traverse the regions of both Councils. As such, this common-pool resource is subject to the combined fishing effort and mortality from all U.S. vessels taking this common resource, regardless of their home port or gear type. A common BO that assesses the collective, total impact of these mortalities on sea turtle species is needed in order to determine permissible levels of takes. The common BO must consider the fluid movement of each Council's fleets into the fishery areas of the other and mortalities from foreign fleets in order to assess the fishing impacts of the U.S. fleets on the turtle species.

A common BO focusing on species impacts will have to address the fishery allocation of "Turtle Mortality Limits (TMLs)," while simultaneously recognizing the fluid movement of fishing effort into common fishing areas for the two Councils. (Separate BOs by each area implicitly allocates TMLs between the areas, but based on historical effort patterns that may not reflect current effort of fleets.) Without explicit area or fleet allocation, a "race to fish" is likely to ensue in order to catch the maximum possible swordfish before the TML is reached. Even within the Pacific Fishery Management Council area, a separate BO will likely bring a "race to fish" between the pelagic longline and drift gill net gears. An allocation of TMLs by fleet may thus be required. Allowing transferability of TMLs between fleets would allow a market mechanism to solve the allocation issue, with TMLs ultimately residing with the fleet that has the highest demand for them.

Biological Opinions have been made one at a time as the situations have arisen and have focused on the marginal increments to total mortality. Any new Biological Opinion should consider the allowable takes that would be non-jeopardizing in the existing fisheries and any effort shifts that have occurred.

The PDT also notes that the discussion on sea turtles and the Biological Opinion has focused on the pelagic longline fishery for swordfish. However, even in the absence of swordfish fishing using pelagic longlines, a pelagic longline fishery for tunas still remains viable and should be considered independently of the swordfish fishery.

The PDT also notes that there have been preliminary considerations of transferring all or part of the northern portion of the pelagic longline swordfish activities to Dutch Harbor, Alaska, which

would be under the jurisdiction of the North Pacific Fishery Management Council.

The PDT notes that the drift gill net fishery has already adopted measures to reduce sea turtle takes.

Team Recommendations:

1. **Shift line to 140°W with appropriate management measures applying east and west of this line.**
2. **Direct HMS Plan Development Team to initiate a plan amendment process for limited entry of the pelagic longline fishery.**
3. **Request NOAA Fisheries conduct a common Biological Opinion with the Western Pacific Fishery Management Council.**

ATTACHMENT A

Significance of Differences in Observed Turtle Take Rates East and West of 140°W Longitude

The results for three turtle species east and west of 140°W (all quarters) are given below. There were 354 sets to the west and 232 set to the east.

	West			East		
Turtle sp.	Take	p[1]	Interval[2]	Take	p	Interval
Loggerhead	48	0.136	0.110-0.161	8	0.034	0.017-0.0

[1] p = Take Rate

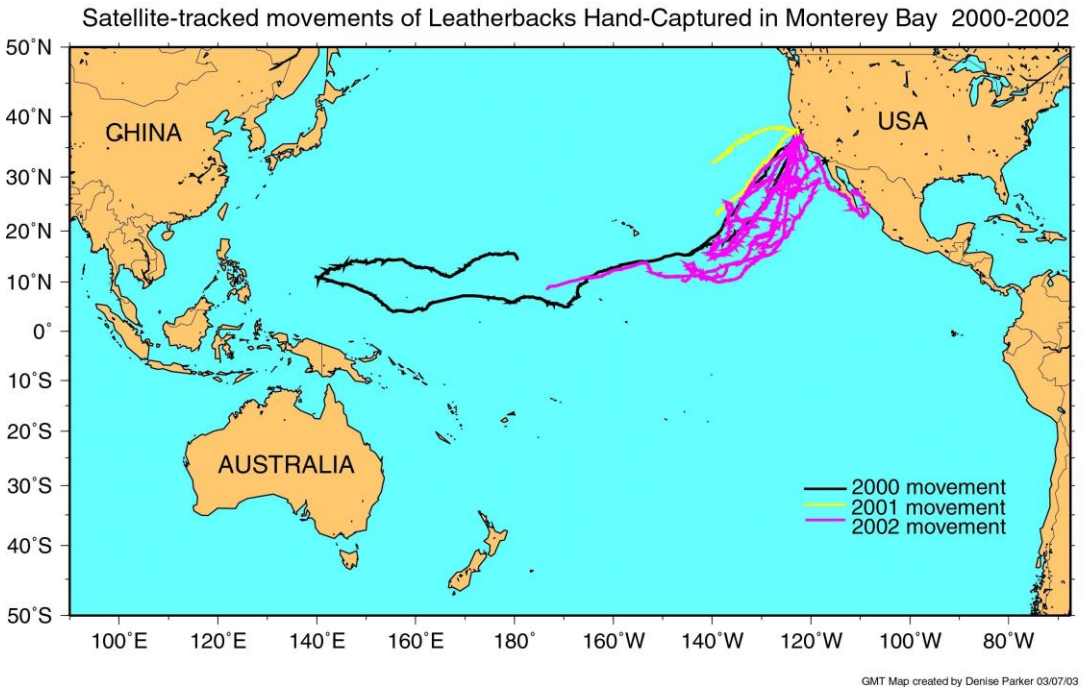
[2] Least Significant Difference Interval

						5 2
Leatherback	9	0.025	0.014-0.037	6	0.026	
Ridley	2	0.006	0.000-0.011	0	0.011-0.041	0 . 0 0 0
						- - - - - - - - -

It is seen that only for the loggerhead turtle are the take rates significantly different (higher) West vs. East (intervals do not overlap). Most of the longline fishing takes place during the 4th and 1st quarters of the year, and most loggerhead turtles are taken in the 1st quarter when the West Coast fleet is fishing primarily west of 140^{o}W.

Note: To determine if rates of turtle take are significantly different, in this case east and west of a given longitude line, each rate's interval for significant overlap was calculated, and whether or not the intervals overlapped was noted. Non-overlap indicates a statistically significant difference in the rates. Since two means are significantly different if their difference exceeds their Least Significant Difference, approximately 2.8 x Standard Error, the interval for significant overlap of each mean is ~ ± 1.4 x Standard Error of each, assuming a normal distribution for the error. Standard error of a mean rate p (as turtle takes per longline set) is calculated as $\sqrt{p(1-p)/n}$ or $\sqrt{p/n}$, for $p > 0.05$ (Binomial distribution) and $p < 0.05$ (Poisson distribution), respectively. Quantity n is the number of sets.

ATTACHMENT B



Leatherback Turtle Satellite Tracking Data (Dutton, Benson & Eckert, unpub. 2003)

ATTACHMENT C
RFA Analysis of Restricting Effort to East of 140°W

Landings summaries for West Coast-Based pelagic longline vessels, 2000-2001.

Swordfish Landings (mt)

	Quarter				
Year	1	2	3	4	Grand Total
2000	658	12	164	1,037	1,871
2001	844	457	18	437	1,756
Grand Total	1,502	469	182	1,474	3,627

Source: PacFIN

Swordfish Revenues (2001 $)

	Quarter				
Year	1	2	3	4	Grand Total
2000	$2,983,533	$64,322	$904,345	$4,229,420	$8,181,620
2001	$3,376,479	$1,545,886	$92,420	$1,550,305	$6,565,090
Grand Total	$6,360,012	$1,610,208	$996,766	$5,779,725	$14,746,710

Source: PacFIN

 # Vessels

	Quarter				
Year	1	2	3	4	Total Vessels
2000	27	2	17	44	49
2001	34	24	9	17	38
Grand Total	61	26	26	61	87

Source: PacFIN

 # Trips

	Quarter				
Year	1	2	3	4	Grand Total
2000	45	2	18	73	138
2001	50	28	10	29	117
Grand Total	95	30	28	102	255

Source: PacFIN

Observed Hooks, by Quarter for 2002, East and West of 140°W for West Coast-Based Longline Fleet (% of Total vis-á-vis 140°W in Parentheses)

Quarter	West of 140°W	East of 140°W	Total
1	13,601 (95.1%)	704 (4.9%)	14,305 (100%)
2	17,255 (84.6%)	3,138 (15.4%)	20,393 (100%)
3	0 (0%)	3,016 (100%)	3,016 (100%)
4	28,018 (31.1%)	62,041 (68.9%)	90,059 (100%)

Source: West-Coast-Based Observer Data

Note: Rows sum to 100%

Observed Hooks, by Quarter for 2002, East and West of 140°W for West Coast-Based Longline Fleet (% of Total by Quarter in Parentheses)

Quarter	West of 140°W	East of 140°W
1	13,601 (23.1%)	704 (1.0%)
2	17,255 (29.3%)	3,138 (4.6%)
3	0 (0%)	3,016 (4.4%)
4	28,018 (47.6%)	62,041 (90.0%)
Total	58,874 (100%)	68,899 (100%)

Source: West-Coast-Based Observer Data
Note: Columns sum to 100%

Estimated Short-Run Swordfish Longline Fleet Profit East and West of 140°W by Quarter, 2002 ($2001) (% of Total vis-á-vis 140°W in Parentheses)

Location	Quarter				
	1	2	3	4	Total
West of 140W	2,083,998	818,716	0 (0%)	824,133	3,726,847
	(55.9%)	(22.0%)		(22.1%)	(100%)
East of 140W	107,870	148,892	76,154	1,824,899	2,157,814
	(5.0%)	(6.9%)	(3.5%)	(84.6%)	(100%)
Total	2,191,867	967,608	76,154	2,649,032	5,884,661

Note: Observed effort level expanded by factor of 17.5
Short-run cost and effort data from observed trips.
Revenue data from PacFIN
Rows sum to 100%

Estimated Short-Run Swordfish Longline Fleet Profit East and West of 140°W by Quarter, 2002 ($2001) (% of Total by Quarter in Parentheses)

Location	Quarter				
	1	2	3	4	Total
West of 140W	2,083,998	818,716	0	824,133	3,726,847
	(95.1%)	(84.6%)	(0%)	(31.1%)	
East of 140W	107,870	148,892	76,154	1,824,899	2,157,814
	(4.9%)	(15.4%)	(100%)	(68.9%)	
Total	2,191,867	967,608	76,154	2,649,032	5,884,661
	(100%)	(100%)	(100%)	(100%)	

Note: Observed effort level expanded by factor of 17.5
Short-run cost and effort data from observed trips.
Revenue data from PacFIN
Columns sum to 100%

Estimated Short-Run Swordfish Longline Fleet Profit Relative to Current Level of Effort by Quarter: Only Swordfish Fishing, East of 140°W ($2001)

Effort Level / Quarter	1	2	3	4	Total
150%	161,804	223,338	114,231	2,737,349	3,236,722
140%	151,017	208,449	106,615	2,554,859	3,020,940
130%	140,230	193,560	99,000	2,372,369	2,805,159
120%	129,444	178,670	91,384	2,189,879	2,589,377
110%	118,657	163,781	83,769	2,007,389	2,373,596
100%	107,870	148,892	76,154	1,824,899	2,157,814
90%	97,083	134,003	68,538	1,642,409	1,942,033
80%	86,296	119,114	60,923	1,459,919	1,726,252
70%	75,509	104,224	53,308	1,277,429	1,510,470
60%	64,722	89,335	45,692	1,094,939	1,294,689
50%	53,935	74,446	38,077	912,450	1,078,907

Note: Current level of effort = 100%. E.g. 150% effort = 1.5 x current effort.
Observed effort level expanded by factor of 17.5
Short-run cost and effort data from observed trips.
Revenue data from PacFIN.
No swordfish fishing west of 140W and only swordfish fishing east of 140°W
Assumes no alternative types of fishing (e.g. tuna fishing)

Change in Estimated Short-Run Swordfish Longline Fleet Profit Relative to Current Level of Effort With Fishing Restricted to East of 140°W by Quarter ($2001)

Effort Level / Quarter	1	2	3	4	Total
150%	-2,030,063	-744,270	38,077	88,317	-2,647,940
140%	-2,040,850	-759,160	30,461	-94,173	-2,863,721
130%	-2,051,637	-774,049	22,846	-276,663	-3,079,503
120%	-2,062,424	-788,938	15,231	-459,153	-3,295,284
110%	-2,073,211	-803,827	7,615	-641,643	-3,511,066
100%	-2,083,998	-818,716	0	-824,133	-3,726,847
90%	-2,094,785	-833,606	-7,615	-1,006,623	-3,942,628
80%	-2,105,572	-848,495	-15,231	-1,189,113	-4,158,410
70%	-2,116,359	-863,384	-22,846	-1,371,602	-4,374,191
60%	-2,127,146	-878,273	-30,461	-1,554,092	-4,589,973
50%	-2,137,933	-893,162	-38,077	-1,736,582	-4,805,754

Note: Current level of effort = 100% (status quo)
Observed effort level expanded by factor of 17.5
Short-run cost and effort data from observed trips.
Revenue data from PacFIN

Total change is increase (effort > 100% current) or decrease (effort < 100% current) in short-run profit east of 140W compared to 100% current short-run profit plus short-run profit loss west of 140W.
Assumes no alternative type of fishing (e.g. tuna fishing)

Percentage Change in Estimated Short-Run Swordfish Longline Fleet Profit Relative to Current Level of Effort With Fishing Restricted to East of 140°W by Quarter ($2001)

Effort Level / Quarter	1	2	3	4	Total
150%	-61.7%	-51.3%	33.3%	2.2%	-30.0%
140%	-66.5%	-56.0%	28.6%	-2.5%	-34.8%
130%	-72.0%	-61.5%	23.1%	-8.0%	-40.3%
120%	-78.4%	-67.9%	16.7%	-14.4%	-46.7%
110%	-86.0%	-75.5%	9.1%	-22.0%	-54.2%
100%	-95.1%	-84.6%	0.0%	-31.1%	-63.3%
90%	-106.2%	-95.7%	-11.1%	-42.2%	-74.4%
80%	-120.1%	-109.6%	-25.0%	-56.1%	-88.3%
70%	-137.9%	-127.5%	-42.9%	-74.0%	-106.2%
60%	-161.7%	-151.3%	-66.7%	-97.8%	-130.0%
50%	-195.1%	-184.6%	-100.0%	-131.1%	-163.3%

Note: Current level of effort = 100% (status quo)
Observed effort level expanded by factor of 17.5
Short-run cost and effort data from observed trips.
Revenue data from PacFIN
Total change is increase (effort > 100% current) or decrease (effort < 100% current) in short-run profit east of 140W compared to 100% current short-run profit plus short-run profit loss west of 140W.
Assumes no alternative type of fishing (e.g. tuna fishing)

SCIENTIFIC AND STATISTICAL COMMITTEE STATEMENT ON POTENTIAL MODIFICATION OF FISHERY MANAGEMENT PLAN PREFERRED ALTERNATIVE FOR HIGH SEAS LONGLINE FISHING IN RESPONSE TO SEA TURTLE IMPACT ANALYSIS

The Highly Migratory Species (HMS) Subcommittee of the Scientific and Statistical Committee (SSC) met April 30, 2003 at Hubbs Sea World Research Institute, San Diego, California. Dr. Jim Carretta (NMFS-Southwest Fisheries Science Center) presented his statistical analysis of sea turtle take rates by the high seas longline fishery for swordfish. The Subcommittee's primary task was to assess the validity of the analysis of take rates west and east of 150° W longitude. The SSC considers Fisher's exact test to be an appropriate statistical method for analyzing data of this type. Leatherback and loggerhead turtle hooking rates were not significantly different east and west of 150° W longitude, however, an analysis of whether the data were sufficient to detect differences was not performed.

The appendix of the report provides hooking rates in easterly longitudes for each quarter, with nominal rates appearing lower east of 140° W longitude. This has opened the question of whether a longline fishery may be prosecuted farther east than the proposed line (e.g., east of 140° W longitude as proposed by the HMS Plan Development Team in Exhibit F.2.c) to reduce the risk to protected turtle species. The SSC notes that Fisher's exact tests were not performed on the data, nor is it clear that the data would support such an analysis. With the possible exception of the 4th quarter, the number of sets observed is low.

The biological impacts of the hooking rates on the turtle populations were not assessed. Until an 'acceptable' level of annual take has been defined for either turtle species, a discussion of acceptable hooking rates may be premature. Another issue that was not considered in the analysis is the impact on the turtle populations of the domestic fishery compared with the international fishery that operates in the same waters.

PFMC
06/18/03

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June 10, 2003

VIA FACSIMILE AND UNITED STATES MAIL.

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PFMC

6/18/2003
Agenda Item F.
HMS Management

Hans Radke
Pacific Fishery Management Council
7700 NE Ambassador Place, Ste 200
Portland OR 97220-1384

Re Highly Migratory Species Fishery Management Plan

Dear Mr. Radke:

Bay Oak Law represents Vietnamese Longline Fishery Association ("Association"). The Association is alarmed by some of the current alternatives to the Highly Migratory Species ("HMS") Fishery Management Plan ("FMP") of the Pacific Fishery Management Council ("PFMC"), which would put them out of business without so much as a single study as to their effect on the sea turtles the FMP purports to protect. Indeed, a wealth of studies in other fishery management jurisdictions indicate the exact opposite result: that preventing the regulated American fisheries will *increase*, not decrease, sea turtle mortality. The Association urges the PFMC to (1) begin conducting objective, neutral studies to examine the best alternatives to protect sea turtles and other sealife, while minding the technological and economic feasibility required by law; and (2) wait upon the results of the current litigation against the National Marine Fisheries Service in Washington, D.C., which may invalidate the current moratorium against longline fishing in Hawai'i. In the interim, the Association is willing to abide by the modified Alternative 2 of the Highly Migratory Species Advisory Subpanel ("HMSAS"), with some clarifications, detailed below.

HMS FMP. The PFMC released a draft HMS FMP in September, 2002. In it, the PFMC acknowledged that "U.S. fisheries for highly migratory species in the Pacific Ocean, and West Coast fisheries in particular, harvest a small fraction of the total catch taken by all nations involved. In most cases, effective conservation will require international action." 9/2002 HMS draft FMP, pg. ES-6. The draft HMS FMP also acknowledges that the "eastern Pacific stock [of Pacific swordfish] is healthy," and does not need regional harvest guidelines at this time.

The problem of by-catch of sea turtles by those involved in longline fishing has been a concern for environmental and other groups. However, "there is little information for estimating impacts of a longline fishery in the [Economic Exclusion Zone ("EEZ") off the West Coast]." 9/2002 HMS draft FMP, pg. ES-13. However, despite the acknowledged lack of information, the very next sentence states that "[t]he preferred alternative in the FMP is to impose an indefinite moratorium on pelagic longlining in the West Coast EEZ . . . ." *Id.* Various alternatives, which would allow continued fishing under more regulated conditions, have since been proposed, including by the HMSAS.

The Association believes that the original Alternative 2, the ending of longline swordfish fishing, is not only illegal because of the lack of information, but unwise as well. Instituting such a stoppage without comprehensive studies as to how it would affect the sea turtles at issue could, perversely, cause more harm to the sea turtles.

The Endangered Species Act requires an evaluation of the effects of an action, and to issue an opinion as to whether the proposed action is likely to jeopardize the continued existence of the endangered species. 16 U.S.C. § 1536(b)(3). The draft HMS FMP acknowledges the lack of information as to the impacts of a longline fishery, and does not have any information whatsoever as to a stoppage. As a result, proposing a longline fishing stoppage without such information would violate the Endangered Species Act.

Even the study by James V. Carretta, "An Analysis of Sea Turtle Take Rates in the High-Sea Longline Fishery in the Eastern Pacific Ocean," included as Exhibit F.2.b in the Briefing Book for the June 2003 meeting of the PFMC, fails to provide the necessary information. In it, Mr. Carretta, of the Southwest Fisheries Science Center, purports to find that sea turtle take rates east of W150° longitude are somewhat higher for loggerhead and leatherback sea turtles, but lower for olive ridley turtles, compared to similar data for sea turtle take rates west of W150° longitude.

However, this study does **not** establish danger to the sea turtle populations by continued longline fishing east of W150°. Previous NMFS studies, using the TURTSIM computer simulation program, show that even a **five-fold** increase in fishing in the Western Pacific would not substantially affect the trajectory of the turtle populations. The Carretta study fails to make any analysis as to how the purported increase in sea turtle take rates would affect sea turtle species, as opposed to particular sea turtles.

Moreover, there has been an absence of analysis as to how only stopping longline swordfish fishing by American vessels would impact the sea turtle populations. As the draft HMS FMP itself suggests, "effective conservation will require international action," (ES-6), because of the great number of foreign longline vessels; those vessels are not regulated to the same extent as the American vessels, if at all. The almost 5000 foreign vessels that set out longlines in the Pacific Ocean dwarf the West Coast-based American fleet, which is less than 25. With the regulated American vessels out of action, the sea turtle mortality rate probably would actually rise, as unregulated foreign vessels supply the market demands created by the end of supply from regulated American vessels.

Hawai'i Litigation. The Hawaiian moratorium with which the draft HMS FMP originally sought to harmonize is subject to a legal challenge in the federal district court for the District of Columbia. That action, *Hawaii Longline Association v. National Marine Fisheries Service*, Civil Action No. 1:01cv00765:CKK, is awaiting a court decision on a motion for summary judgment, to vacate the biological opinion issued by the NMFS on November 15, 2002. Should the court grant the requested relief, the scientific basis for the Hawai'i moratorium – itself the motivation for the stoppage proposed in the original Alternative 2 of the HMS FMP – will be vacated. That could lead to the illogical result, that a moratorium would be instituted here, to harmonize with a moratorium struck down because it has no scientific basis.

HMSAS. The Association can agree to the proposed Alternative 2 of the HMSAS (4/29/2003 draft), with a few clarifications. First, the prohibited season (Measure 4) should be May 1 through July 1, as the late March and April fishing season is an important time for the members of the Association. Second, if any observers are placed on board vessels, the observers' out-of-pocket expenses, (which would have to include liability insurance), should be paid by the government or other entity, not the fishermen themselves.

The Association's members depend on the health of the oceans for their livelihood. They risk their lives in America's most dangerous profession (*USA Today*, 3/13/2003) to provide healthy options for America's tables. The Association urges the PFMC to affirm its commitment to keep the longline fishery open to responsible, regulated American vessels, and order further impartial scientific study.

Very truly yours,

BAY OAK LAW FIRM, APLC

Andrew K. Jacobson

ANDREW K. JACOBSON

June 2, 2003

Dr. Hans Radke, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

SUBJECT: Longline fishing

Dear Dr. Hans Radke,

The news about the state of our oceans becomes more and more troubling every day. As a lover of the sea, and a consumer of seafood, this is one of the issues of most concern to me.

I very much appreciate the PFMC for taking a precautionary and risk-averse approach in the conservation of tunas, billfish and sharks by maintaining a ban on longline fishing within 200 miles of the California coast. But California fleets are being allowed to use longlines in fisheries where Hawaiian boats were banned.

I respectfully urge that you immediately pass regulations requiring US vessels fishing outside the US exclusive economic zone (beyond 200 miles from shore) be subject to all catch limits and bycatch reduction measures in place for vessels fishing the same waters out of Hawaii. I also urge a requirement minimum of 25% observer coverage and use of mandatory vessel monitoring in order to accurately count the catch and bycatch on the high seas and to ensure compliance with conservation measures.

Thank you for your attention to this matter.

Sincerely,

Andrew Reich
153 N. Windsor Blvd.
Los Angeles, CA 90004
323-464-0506
mikerike@aol.com

As of June 10, 2003, approximately 820 copies of this correspondence were received from different individuals.

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Don McIssac - Executive Director
Pacific Fisheries Management Council
7700 NE Ambassador Place, Ste 200
Portland, OR 97220-1384
Via Facsimile 503-820-2299 / and email

June 8, 2003

Dear Mr. McIssac:

WFOA still believes that it makes no sense to attempt to manage internationally fished highly migratory fish stocks, such as swordfish and tuna, under the same fishery management scheme that has been used in the past for groundfish, salmon (anadromous species) and coastal pelagics. Once again, WFOA would like to make very clear that it would support a management plan for sharks, most of which are not highly migratory in nature, and only a few of which are subject to international fisheries (primarily the blue shark). It will be a complete disaster for the U.S. fleet which fishes for albacore, yellowfin, bluefin, big eye, and skipjack tunas (as well as the vessels which fish for swordfish) to be subject to the unilateral management and conservation measures of the Council or National Marine Fisheries Service.

NMFS appears to have been forced, through incessant litigation by special interest groups, to take the position that the Magnuson-Stevens Act must be interpreted to require unilateral management measures on U.S. vessels, irrespective of the percentage of participation by U.S. vessels in the international fishery, and irrespective of whether the U.S. management measures will have any significant affect on the fish, protected species, or endangered species present in the international fishery. Unfortunately, such a position flies in the face of the unbiased science which the same agency prepares and reports on, and also shows a clear absence of any logic.

While WFOA does not represent long line vessel owners, it does support their criticism of the HMS FMP management measures pending approval before this Council on June 18th. WFOA supports fisheries management based upon the best scientific advice available. It defies common sense to impose regulations on long line vessels home ported on the West coast which have been imposed by NMFS and the Western Pacific Management Council as a result of litigation to which West coast fishermen were not parties. Many of those regulations and closures are based upon a Biological Opinion which has been discredited and thrown out by a Federal court. Many of these very closures, which the NMFS is advocating, are the subject of the WPFMC's meetings being held today and tomorrow, during which they may be significantly revised.

Once again WFOA supports fisheries management based upon science. It does not support fisheries management based upon bureaucratic desires for conformity for its own sake, or political pressure. WFOA has great faith in the intelligence and common sense of the members of this Council to make reasoned decisions. We hope that one of these would be to place the draft FMP on hold until there can be a full discussion by the Plan Development Team, the HMS Advisory Subpanel, the Scientific and Statistical Committee, and the Enforcement Consultants of the potential economic, social, and biological, as well as legal, consequences of sending the current draft FMP forward to the Secretary of Commerce.

Sincerely,

Wayne Heikkila

Wayne Heikkila
Executive Director

NATIONAL MARINE FISHERIES SERVICE REPORT ON HIGHLY MIGRATORY SPECIES MANAGEMENT

Situation: National Marine Fisheries Service (NMFS) will briefly report on recent international and domestic developments relevant to highly migratory species fisheries and issues of interest to the Council.

Council Task:

1. Discussion.

Reference Materials:

1. NMFS Report on Highly Migratory Species Management.

Agenda Order:

a. Regulatory Matters — Svein Fougner
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. Council Discussion

PFMC
05/28/03

NATIONAL MARINE FISHERIES SERVICE REPORT ON HIGHLY MIGRATORY SPECIES MANAGEMENT

International Highly Migratory Species (HMS) Fisheries

The United States and Canada met April 15-16, 2003, in Vancouver, British Columbia, Canada, to continue discussions on implementation of the U.S./Canada Albacore Fishing Treaty and its recent amendments. The United States informed Canada that legislation had not been enacted to authorize regulations to implement the Treaty and that there was little prospect of such legislation in the immediate future. Canada and the United States then agreed it would not be possible to implement the Treaty by June 2003 as had been intended. Therefore, the fishing limits envisioned will be implemented beginning in 2004. Given this conclusion, it was also agreed new reporting requirements that would be needed to implement the fishing limits will not be put into force in 2003. However, efforts to develop reporting mechanisms that will be sufficient for both Parties will continue, and there will be close monitoring of vessel activity in 2003 to the extent resources allow. It was agreed, if there is a benefit from this delay, it is that both Parties will have additional time to work with their respective industries to establish reporting mechanisms that will be efficient and effective at minimal cost to the industries. In the meantime, the April meeting did provide an opportunity for the first official exchange of fishery data by the two Parties covering 2002 fishing as well as a report on the results of the latest North Pacific Albacore Working Group.

The Inter-American Tropical Tuna Commission (IATTC) is scheduled to meet June 24-27, 2003, in Antigua, Guatemala. The United States is clearing appointment of new U.S. Commissioners to the IATTC and hopes to have the appointments complete by the time of the meeting. If so, it will be the first time in many years that the United States will have its full complement of four Commissioners. An agenda for the IATTC and associated meetings, and background papers, are available on the IATTC web site (www.IATTC.org). Among the topics will be consideration of action on the revised Convention text developed as a result of the meeting of the Working Group on Negotiations March 18-23, 2003, in La Jolla, California; review of progress in compliance with IATTC recommendations; progress and problems in implementing the purse seine capacity limitation program; and the IATTC research program and budget for 2003-2004. Results of the meeting will be reported to the Council for its September meeting.

PFMC
06/03/03

POTENTIAL MODIFICATION OF FISHERY MANAGEMENT PLAN PREFERRED ALTERNATIVE FOR HIGH SEAS LONGLINE FISHING IN RESPONSE TO SEA TURTLE IMPACT ANALYSIS

Situation: At the November 2002 meeting, the Council adopted a fishery management plan (FMP) to manage West Coast-based highly migratory species (HMS) fisheries. The Council directed the HMS Plan Development Team (HMSPDT) and staff to finalize the FMP and transmit it to National Marine Fisheries Service (NMFS) for their review.

However, prior to the March 2003 meeting, NMFS expressed concern about one of the Council's proposed actions (i.e., a preferred alternative). The proposed action for longline fishing outside of the U.S. Exclusive Economic Zone (EEZ) requires several restrictions similar to those of the Hawaii-based fishery, but would provide opportunity for West Coast-based longline fishing vessels to target swordfish when operating east of 150° W longitude. In November 2002, one basis for the Council's decision was lack of information on bycatch and protected species impacts from longline vessels fishing east of 150° W longitude. At the time of the Council's decision, the NMFS representative on the Council noted the proposed Council action (which differed from the original preferred alternative) could potentially affect approvability of the HMS FMP.

At the March meeting, NMFS presented preliminary information from recent observer data that showed longline fishing operations east of 150° W longitude could have interactions with sea turtles similar to those in waters west of 150° W longitude. Based on this information, the Council delayed submission of the HMS FMP in order to provide time for NMFS to conduct a thorough scientific review of the new data and present the results to the Scientific and Statistical Committee (SSC), HMSPDT, and HMS Advisory Subpanel (HMSAS). The Council also indicated that at the June 2003 meeting, they would review the NMFS analysis and consider modifying the previously adopted preferred alternative for the high seas longline fishery.

At meetings on April 29-30, NMFS presented their analysis to the HMSPDT, HMSAS, and HMS subcommittee of the SSC. Each of the advisory bodies has prepared recommendations and will report to the Council.

In summary, at this meeting NMFS will provide the Council with a final analysis of new information about impacts on sea turtles from high seas longline fishing east and west of 150° W longitude. Based on this information, advisory recommendations, and public comment, the Council might act to modify the previously adopted preferred alternative for the high seas longline fishery.

Council Action:

1. **Adopt a Modified Alternative for High Seas Longline Fishing, If Necessary.**

Reference Materials:

1. Exhibit F.2.b, NMFS Report
2. Exhibit F.2.c, Supplemental SSC Report
3. Exhibit F.2.c, HMSPDT Report
4. Exhibit F.2.c, HMSAS Report
5. Exhibit F.2.d, Public Comment

Agenda Order:

a. Agendum Overview — Dan Waldeck
b. NMFS Report — Svein Fougner/Jim Carretta
c. Reports and Comments of Advisory Bodies
d. Public Comment
e. **Council Action:** Adopt a Modified Alternative for High Seas Longline Fishing, If Necessary

PFMC
05/30/03

15 April 2003

AN ANALYSIS OF SEA TURTLE TAKE RATES IN THE HIGH-SEAS LONGLINE FISHERY IN THE EASTERN PACIFIC OCEAN

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SUMMARY

Sea turtle take rates (turtles per 1000 hooks fished and turtles per set) in the high-seas longline fishery are examined and compared for the two regions west and east of W150 longitude. In addition, take rates are summarized by longitude and calendar quarter for the area east of W150, which is the region most utilized by vessels landing in California. Data from both the 'Hawaii' and 'California' components of the longline fishery are used in these analyses, although fishing locations overlap between the two fisheries. At both *per set* and *per 1000 hooks* levels, loggerhead and leatherback sea turtle take rates are higher east of W150. Take rates of olive ridley turtles are higher west of W150.

Observed loggerhead take rates west and east of W150 are 0.085 and 0.112 per 1000 hooks, respectively. On a per set basis, the fraction of sets with loggerhead entanglements is 6.8% west of W150 and 8.5% east of W150. Loggerhead take rates are not significantly different between the two regions ($p = 0.202$, Fisher exact test).

Observed leatherback take rates west and east of W150 are 0.021 and 0.033 per 1000 hooks, respectively. On a per set basis, the percentage of sets with leatherback entanglements is 1.7% west of W150 and 2.5% east of W150. Leatherback take rates are not significantly different between the two regions ($p = 0.226$, Fisher exact test).

Observed olive ridley take rates west and east of W150 are 0.025 and 0.004 per 1000 hooks, respectively. On a per set basis, the percentage of sets with olive ridley entanglements is 2.0% west of W150 and 0.3% east of W150. Olive ridley take rates are significantly different between the two regions ($p = 0.003$, Fisher exact test).

East of W150, over half of all observed sets (53%) are in the 4th calendar quarter and most remaining sets (36%) are in the 1st quarter. No leatherback interactions are observed in the 1st quarter sets (0 interactions/210 sets). 4.5% of all 4th quarter sets show leatherback interactions (14 interactions/310 sets). The fraction of sets with leatherback turtle interactions in the 1st and 4th quarters is significantly different ($p = 0.0002$, Fisher exact Test). Loggerhead interactions occur in 17% of all 1st quarter sets (36 interactions/210 sets) and 3.5% of all 4th quarter sets (11 interactions/310 sets). The fraction of sets with loggerhead turtle interactions in the 1st and 4th quarters is significantly different ($p=0.00$, Fisher exact test).

Dataset

A tabular summary of the data analyzed is shown in Table 1. Data summaries for the area west of W150 longitude are provided by Bill Walsh of the NMFS Honolulu Office. Set and protected species data for the area east of W150 longitude are provided by Lyle Enriquez of the NMFS Long Beach Office for vessels operating out of California and by the NMFS Honolulu Laboratory for Hawaii-based vessels. Data for the area west of W150 spans 1994 through mid-2002 and data for the area east of W150 spans 1997 through February 2003. Data are for swordfish-style sets only.

	Bill Walsh (Honolulu) **West of W150**	*Lyle Enriquez (Long Beach) plus Honolulu Data* **East of W150**
Leatherback Entanglements	32	15
Loggerhead Entanglements	129	50
Olive Ridley Entanglements	38	2
Green Turtle Entanglements	13	0
Hooks Observed	1,513,596	444,833
Sets Observed	1,875	586
Mean Hooks per Set	807	759
Leatherbacks per 1000 hooks	0.021	0.034
Loggerheads per 1000 hooks	0.085	0.112
Olive Ridleys per 1000 hooks	0.025	0.004
Greens per 1000 hooks	0.009	0.000
Sets with Leatherbacks	32	15
Sets without Leatherbacks	1843	571
Sets with Loggerheads	129	50
Sets without Loggerheads	1746	536
Sets with Olive Ridleys	38	2
Sets without Olive Ridleys	1837	584
Sets with Green Turtles	13	0
Sets without Green Turtles	1862	587

Comparison of Take Rates

Take rates of leatherback, loggerhead, and olive ridley sea turtles are examined using Fisher exact Tests with 2x2 contingency tables. I did not analyze green turtle take rates because no green turtles were observed taken east of W150 in this dataset. Two-tailed tests are performed to examine the null hypothesis that the proportion of sets with turtle interactions is equal between regions or seasons.

Leatherback Fisher Exact Test

The Fisher exact test is useful for comparing proportions in a 2x2 contingency table. Such a table is easily constructed in the case of comparing proportions of longline sets with and without turtle interactions between two areas or seasons. An example of a contingency table using the actual set data for leatherback turtles is given below.

Leatherback 2x2 Contingency Table

	East	West	All sets
Sets with Turtles	15	32	47
Sets without Turtles	571	1843	2414
All sets	586	1875	2461

This table summarizes set-level data for the areas east and west of W150 for swordfish style sets only. The null hypothesis (two-tailed) being tested is whether the proportion of sets with leatherback interactions east and west of W150 are equal. In this table, 2.5% of *East* sets and 1.7% of *West* sets had leatherback interactions. The probability of observing this particular table given that the null hypothesis is true is *0.056*. In order to calculate the two-tailed probability, the individual probabilities of observing more extreme cases of this table (in both directions) must be calculated. For example, the next most extreme table (in the direction of a higher proportion of East sets with turtles) is:

Leatherback 2x2 Contingency Table (next most extreme proportion)

	East	West	All sets
Sets with Turtles	16	31	47
Sets without Turtles	570	1844	2414
All sets	586	1875	2461

The probability of observing this table if the null hypothesis were true is *0.035*, which is less than the probability of observing the previous table. This makes sense, since the current table is more extreme in the direction of a higher proportion of East sets with turtles. One iteratively constructs tables for all possible combinations of this dataset and calculates the probability of each table being observed given the null hypothesis of equal proportions between regions. The probability of each table is calculated as:

$$P = \frac{R_1!R_2!C_1!C_2!}{\frac{n!}{f_{11}!f_{12}!f_{21}!f_{22}!}}$$

where in the above table;

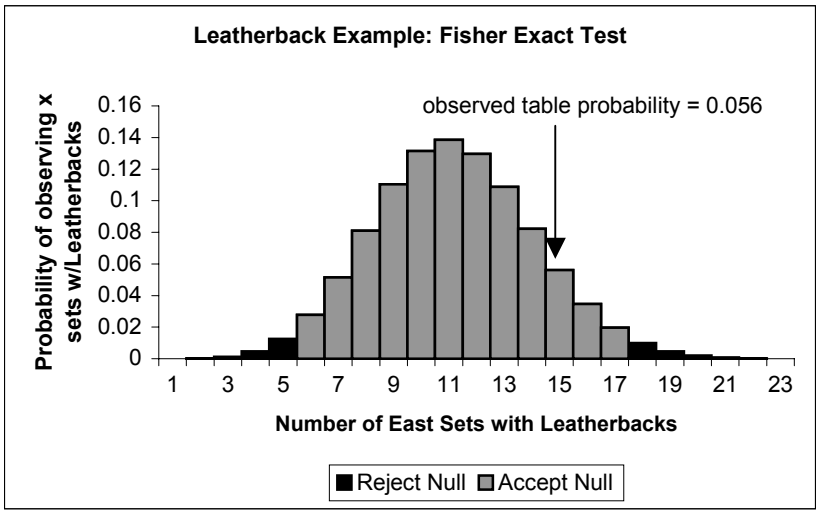
R_1 = the sum of row 1 (**47**),
R_2 = the sum of row 2 (**2414**),
C_1 = the sum of column 1 (**586**),
C_2 = the sum of column 2 (**1875**),

n = the sum of all samples (**2461**),
f_{11} = the frequency in row 1, column 1 (**16**),
f_{12} = the frequency in row 1, column 2 (**31**),
f_{21} = the frequency in row 2, column 1 (**570**) and
f_{22} = the frequency in row 2, column 2 (**1844**).

Because the values in this dataset involve the calculation of large values, I use Stirling's approximation to calculate factorials, where

$$\log X! = (X + 0.5) \log X - 0.434294\, X + 0.39909.$$

The sum of all possible table probabilities is 1. The distribution of probabilities for each possible table is shown below.



The x-axis of this graph is truncated because the probability of observing greater than 23 East sets with leatherbacks is zero and values as extreme or greater than this do not contribute to the overall probability distribution. The two-tailed probability of observing a table at least this extreme is the sum of probabilities at least as extreme as that observed. In this case, the sum of probabilities of observing 1 to 7 East sets with leatherbacks is *0 + 0.0003 + 0.0013 + 0.0046 + 0.012 + 0.0278 + 0.0515* respectively, plus the sum of probabilities of observing 15 or greater sets with leatherbacks (*0.056 + 0.0347 + 0.0196 + 0.01 + 0.0047 + 0.002 + 0.0008 + 0.0003 + 0.0001*). The sum of these probabilities is *0.226*. Since this probability is greater than *0.05*, we do not reject the null hypothesis. However, as the observed table probability is toward the right tail of the distribution, there is good evidence that the proportion of East sets with turtles is still 'higher' than West sets, even if there is not statistical significance at $\alpha = 0.05$. The resulting contingency table for the two-tailed leatherback Fisher exact test appears on the next page.

Leatherback 2x2 Contingency Table			
	East	West	All sets
Sets with Turtles	15	32	47
Sets without Turtles	571	1843	2414
All sets	586	1875	2461

2-tailed Fisher Exact Test	
Null: East equals West	
Accept Null Hypothesis; p=	**0.226**

Table 2. Tabular summary of individual Fisher exact test probabilities for leatherback turtle example. The observed probability from the original 2x2 contingency table is highlighted.

	Leatherback Turtles Number of Sets			
	East	**West**	**East**	**West**
Probability	***Turtles***	***Turtles***	***No Turtles***	***No Turtles***
0	1	46	585	1829
0.0003	2	45	584	1830
0.0013	3	44	583	1831
0.0046	4	43	582	1832
0.0126	5	42	581	1833
0.0278	6	41	580	1834
0.0515	7	40	579	1835
0.081	8	39	578	1836
0.1103	9	38	577	1837
0.1315	10	37	576	1838
0.1385	11	36	575	1839
0.1297	12	35	574	1840
0.1088	13	34	573	1841
0.0822	14	33	572	1842
0.0561	**15**	**32**	**571**	**1843**
0.0347	16	31	570	1844
0.0196	17	30	569	1845
0.01	18	29	568	1846
0.0047	19	28	567	1847
0.002	20	27	566	1848
0.0008	21	26	565	1849
0.0003	22	25	564	1850
0.0001	23	24	563	1851
0	24	23	562	1852

Loggerhead Fisher Exact Test

Results from the Fisher exact test and contingency table for loggerheads appears below. The null hypothesis that the proportion of sets East and West of W150 with loggerhead interactions is equal is **accepted** with a *p*-value of *0.202*.

Loggerhead 2x2 Contingency Table			
	East	West	All sets
Sets with Turtles	50	129	179
Sets without Turtles	536	1746	2282
All sets	586	1875	2461

2-tailed Fisher Exact Test	
Null: East equals West	
Accept Null Hypothesis; p=	**0.202**

The observed distribution of individual table probabilities appears below and in Table 3.

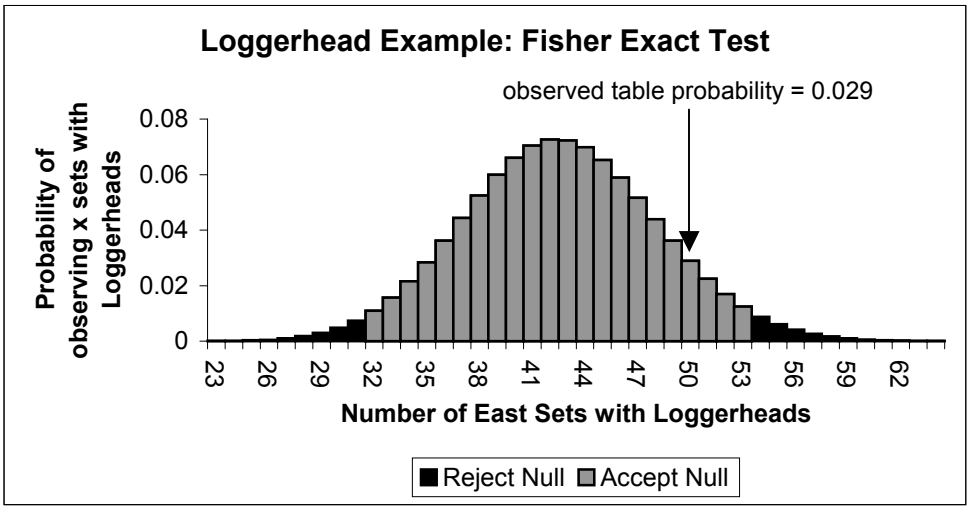


Table 3. Tabular summary of individual Fisher exact test probabilities for loggerhead turtle analysis. The observed probability from the original 2x2 contingency table is highlighted.

Loggerhead Turtles

Number of Sets

Probability	East *Turtles*	West *Turtles*	East *No Turtles*	West *No Turtles*
0	22	157	564	1718
0.0001	23	156	563	1719
0.0001	24	155	562	1720
0.0003	25	154	561	1721
0.0005	26	153	560	1722
0.001	27	152	559	1723
0.0018	28	151	558	1724
0.003	29	150	557	1725
0.0048	30	149	556	1726
0.0074	31	148	555	1727
0.011	32	147	554	1728
0.0157	33	146	553	1729
0.0215	34	145	552	1730
0.0284	35	144	551	1731
0.0362	36	143	550	1732
0.0444	37	142	549	1733
0.0525	38	141	548	1734
0.0599	39	140	547	1735
0.0661	40	139	546	1736
0.0704	41	138	545	1737
0.0726	42	137	544	1738
0.0723	43	136	543	1739
0.0698	44	135	542	1740
0.0652	45	134	541	1741
0.0589	46	133	540	1742
0.0517	47	132	539	1743
0.0439	48	131	538	1744
0.0362	49	130	537	1745
0.0289	**50**	**129**	**536**	**1746**
0.0225	51	128	535	1747
0.0169	52	127	534	1748
0.0124	53	126	533	1749
0.0088	54	125	532	1750
0.0061	55	124	531	1751
0.0041	56	123	530	1752
0.0027	57	122	529	1753
0.0017	58	121	528	1754
0.001	59	120	527	1755
0.0006	60	119	526	1756
0.0004	61	118	525	1757
0.0002	62	117	524	1758
0.0001	63	116	523	1759
0.0001	64	115	522	1760
0	65	114	521	1761

Olive Ridley Fisher exact test

Results from the Fisher exact test and contingency table for olive ridleys appears below. The null hypothesis that the proportion of sets East and West of W150 with olive ridley interactions is equal is **rejected** with a *p*-value of *0.003*.

Olive Ridley 2x2 Contingency Table			
	West	East	All sets
Sets with Turtles	38	2	40
Sets without Turtles	1837	584	2421
All sets	1875	586	2461

2-tailed Fisher Exact Test	
Null: East equals West	
Reject Null Hypothesis; p=	**0.003**

The distribution of individual table probabilities for the olive ridley analysis is shown below and in Table 4.

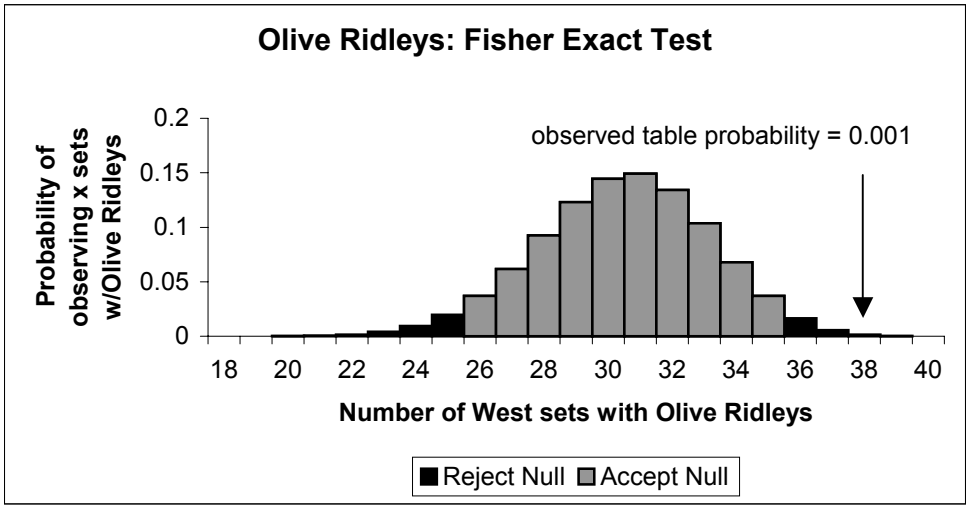


Table 4. Tabular summary of individual Fisher exact test probabilities for olive ridley turtle analysis. The observed probability from the original 2x2 contingency table is highlighted.

Olive Ridley Turtles

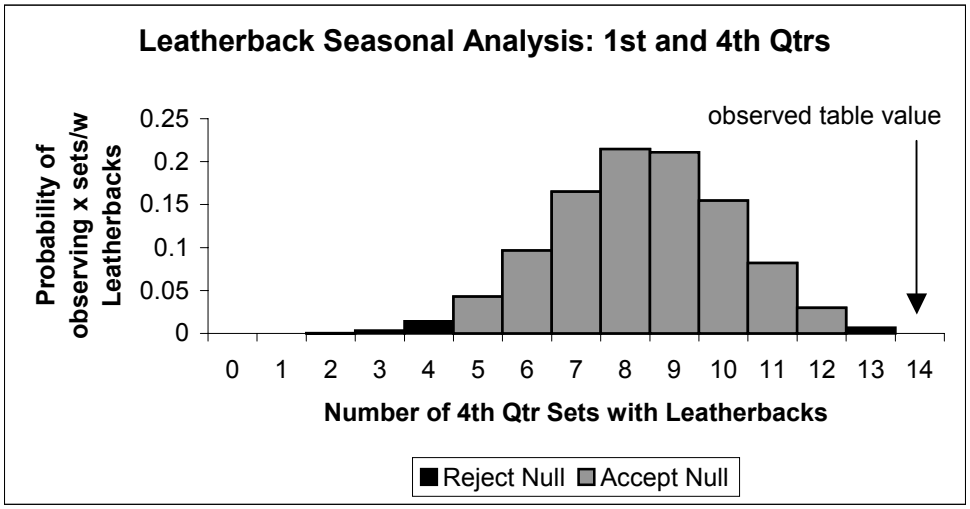
	Number of Sets			
	West	East	West	East
Probability	***Turtles***	***Turtles***	***No Turtles***	***No Turtles***
0	18	22	1857	564
0.0001	19	21	1856	565
0.0002	20	20	1855	566
0.0006	21	19	1854	567
0.0016	22	18	1853	568
0.0041	23	17	1852	569
0.0095	24	16	1851	570
0.0198	25	15	1850	571
0.037	26	14	1849	572
0.0618	27	13	1848	573
0.0925	28	12	1847	574
0.123	29	11	1846	575
0.1446	30	10	1845	576
0.1493	31	9	1844	577
0.1341	32	8	1843	578
0.1036	33	7	1842	579
0.0679	34	6	1841	580
0.037	35	5	1840	581
0.0163	36	4	1839	582
0.0056	37	3	1838	583
0.0014	**38**	**2**	**1837**	**584**
0.0002	39	1	1836	585
0	40	0	1835	586

Seasonal Analysis Summary of Leatherback Take Rates east of W150

The proportion of sets with leatherback takes east of W150 is significantly different in the 1st and 4th calendar quarters. No leatherback interactions are observed from 210 1st quarter sets and 4.5% (14 of 310) of 4th quarter sets have leatherback interactions. There are insufficient data in the remaining two calendar quarters for comparison. Results of a Fisher exact test for this analysis is shown below.

Leatherback 2x2 Contingency Table			
	Area East of W150 only		
	4th Qtr	1st Qtr	All sets
Sets with Turtles	14	0	14
Sets without Turtles	296	210	506
All sets	310	210	520

2-tailed Fisher Exact Test	
Null: East equals West	
Reject Null Hypothesis; p=	**0.0002**

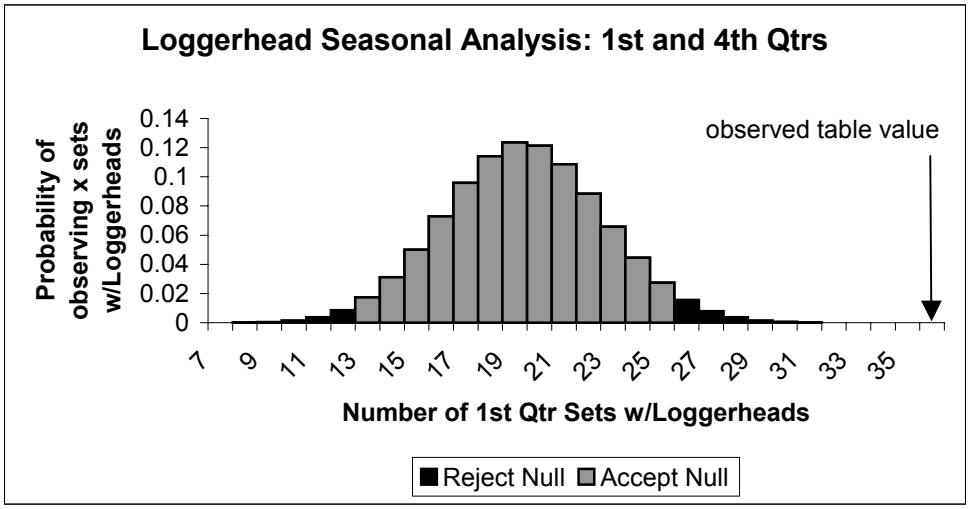


Seasonal Analysis Summary of Loggerhead Take Rates east of W150

The proportion of sets with loggerhead takes east of W150 is significantly different in the 1st and 4th calendar quarters. Loggerhead interactions occur in 17% (36 of 210) of all 1st quarter sets and 3.5% (11 of 310) of all 4th quarter sets. There are insufficient data in the remaining two calendar quarters for comparison. Results of a Fisher exact test for this analysis is shown below.

Loggerhead 2x2 Contingency Table			
	Area East of W150 only		
	1st Qtr	4th Qtr	All sets
Sets with Turtles	36	11	47
Sets without Turtles	174	299	473
All sets	210	310	520

2-tailed Fisher Exact Test	
Null: East equals West	
Reject Null Hypothesis; p=	**0.0000**



Appendix: Summary of quarterly take rates (turtles per 1000 hooks) for the area east of W150.

1st Quarter Hawaii (1997-2001) and CA (2001-2003)

			per 1000 hooks	
ALL SETS	W of 130	E of 130	West	East
Sets obs	210	0		
Hooks obs	153572	0		
Loggerheads	36	0	.23442	.00000
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	45	0	.29302	.00000
LA Albatross	36	0	.23442	.00000

Turtles per 1000 hooks
W of 130 .234418
E of 130 .000000
East+West .234418

			per 1000 hooks	
ALL SETS	W of 135	E of 135	West	East
Sets obs	210	0		
Hooks obs	153572	0		
Loggerheads	36	0	.23442	.00000
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	45	0	.29302	.00000
LA Albatross	36	0	.23442	.00000

Turtles per 1000 hooks
W of 135 .234418
E of 135 .000000
East+West .234418

			per 1000 hooks	
ALL SETS	W of 140	E of 140	West	East
Sets obs	193	17		
Hooks obs	140339	13233		
Loggerheads	34	2	.24227	.15114
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	40	5	.28502	.37784
LA Albatross	36	0	.25652	.00000

Turtles per 1000 hooks
W of 140 .242271
E of 140 .151137
East+West .234418

			per 1000 hooks	
ALL SETS	W of 145	E of 145	West	East
Sets obs	127	83		
Hooks obs	92540	61032		
Loggerheads	21	15	.22693	.24577
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	26	19	.28096	.31131
LA Albatross	25	11	.27015	.18023

Turtles per 1000 hooks
W of 145 .226929
E of 145 .245773
East+West .234418

2nd Quarter Hawaii (1997-2001) and CA (2001-2003) sets

ALL SETS	W of 130	E of 130	per 1000 hooks West	East
Sets obs	22	0		
Hooks obs	24728	0		
Loggerheads	6	0	.24264	.00000
Leatherbacks	1	0	.04044	.00000
Olive Ridley	1	0	.04044	.00000
BF Albatross	13	0	.52572	.00000
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 130 .323520
E of 130 .000000
East+West .323520

ALL SETS	W of 135	E of 135	per 1000 hooks West	East
Sets obs	21	1		
Hooks obs	23658	1070		
Loggerheads	6	0	.25361	.00000
Leatherbacks	1	0	.04227	.00000
Olive Ridley	1	0	.04227	.00000
BF Albatross	13	0	.54950	.00000
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 135 .338152
E of 135 .000000
East+West .323520

ALL SETS	W of 140	E of 140	per 1000 hooks West	East
Sets obs	19	3		
Hooks obs	21590	3138		
Loggerheads	6	0	.27791	.00000
Leatherbacks	1	0	.04632	.00000
Olive Ridley	1	0	.04632	.00000
BF Albatross	10	3	.46318	.95602
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 140 .370542
E of 140 .000000
East+West .323520

ALL SETS	W of 145	E of 145	per 1000 hooks West	East
Sets obs	5	17		
Hooks obs	4335	20393		
Loggerheads	0	6	.00000	.29422
Leatherbacks	1	0	.23068	.00000
Olive Ridley	0	1	.00000	.04904
BF Albatross	0	13	.00000	.63747
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 145 .230681
E of 145 .343255
East+West .323520

3rd Quarter Hawaii (1997-2001) and CA (2001-2003) sets

ALL SETS	W of 130	E of 130	per 1000 hooks West	East
Sets obs	18	26		
Hooks obs	13541	19207		
Loggerheads	3	0	.22155	.00000
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	4	2	.29540	.10413
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 130 .221549
E of 130 .000000
East+West .091609

ALL SETS	W of 135	E of 135	per 1000 hooks West	East
Sets obs	0	44		
Hooks obs	0	32748		
Loggerheads	0	3	.00000	.09161
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	0	6	.00000	.18322
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 135 .000000
E of 135 .091609
East+West .091609

ALL SETS	W of 140	E of 140	per 1000 hooks West	East
Sets obs	0	44		
Hooks obs	0	32748		
Loggerheads	0	3	.00000	.09161
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	0	6	.00000	.18322
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 140 .000000
E of 140 .091609
East+West .091609

ALL SETS	W of 145	E of 145	per 1000 hooks West	East
Sets obs	0	44		
Hooks obs	0	32748		
Loggerheads	0	3	.00000	.09161
Leatherbacks	0	0	.00000	.00000
Olive Ridley	0	0	.00000	.00000
BF Albatross	0	6	.00000	.18322
LA Albatross	0	0	.00000	.00000

Turtles per 1000 hooks
W of 145 .000000
E of 145 .091609
East+West .091609

4th Quarter Hawaii (1997-2001) and CA (2001-2003) sets

ALL SETS	W of 130	E of 130	per 1000 hooks West	East
Sets obs	242	68		
Hooks obs	182886	50899		
Loggerheads	11	0	.06015	.00000
Leatherbacks	11	3	.06015	.05894
Olive Ridley	1	0	.00547	.00000
BF Albatross	25	13	.13670	.25541
LA Albatross	3	0	.01640	.00000

Turtles per 1000 hooks
W of 130 .125761
E of 130 .058940
East+West .111213

ALL SETS	W of 135	E of 135	per 1000 hooks West	East
Sets obs	196	114		
Hooks obs	148167	85618		
Loggerheads	11	0	.07424	.00000
Leatherbacks	10	4	.06749	.04672
Olive Ridley	1	0	.00675	.00000
BF Albatross	18	20	.12148	.23360
LA Albatross	3	0	.02025	.00000

Turtles per 1000 hooks
W of 135 .148481
E of 135 .046719
East+West .111213

ALL SETS	W of 140	E of 140	per 1000 hooks West	East
Sets obs	142	168		
Hooks obs	102477	131308		
Loggerheads	8	3	.07807	.02285
Leatherbacks	8	6	.07807	.04569
Olive Ridley	1	0	.00976	.00000
BF Albatross	11	27	.10734	.20562
LA Albatross	3	0	.02927	.00000

Turtles per 1000 hooks
W of 140 .165891
E of 140 .068541
East+West .111213

ALL SETS	W of 145	E of 145	per 1000 hooks West	East
Sets obs	38	272		
Hooks obs	32293	201492		
Loggerheads	5	6	.15483	.02978
Leatherbacks	2	12	.06193	.05956
Olive Ridley	0	1	.00000	.00496
BF Albatross	1	37	.03097	.18363
LA Albatross	1	2	.03097	.00993

Turtles per 1000 hooks
W of 145 .216765
E of 145 .094297
East+West .111213

Federation of Independent Seafood Harvesters

PO Box 352
Bridgewater Corners, VT 05035

May 4, 2003

Hans Radtke, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

Re: recommendation for addition to HMS FMP management measure 8.5.1 Alternative 2:

> **Without changing the scope or intent of the management measure proposed for the CA/OR drift-gillnet fishery, for purposes of conducting the Section 7 Consultation, base the scope of review for the Biological Opinion on the implementation of the Pacific Offshore Cetacean Take Reduction Plan regulations for the CA/OR drift-gillnet fishery under current conditions, but without the leatherback and loggerhead closures.**

Dear Hans,

I will be unable to attend June's PFMC meeting. In anticipation that the Council may adopt the HMS FMP at that meeting, and submit it to NMFS for approval, I request that the Council append the above (boldface text) to 8.5.1 Alternative 2. The reason for this request is to ensure that the current drift-gillnet fishery is assessed on the same basis as the 2000 BiOp for that fishery.

Regulations require NMFS sustainable fisheries division to consult with NMFS protected resources division when a federal fisheries action interacts with ESA listed marine species. Implementation of the HMS FMP is such an action. In this case, the Council's proposed management measures contained in the HMS FMP form the basis for NMFS sustainable fisheries division to consult with NMFS protected resources division. NMFS protected resources will then produce a Biological Opinion (BiOp) assessing the impact on ESA listed species of each proposed management measure. The BiOp will determine whether or not each proposed measure "is likely to jeopardize the continued existence" of a listed species. If jeopardy is determined for any particular measure, NMFS will propose "reasonable and prudent alternatives" for that measure to mitigate jeopardy.

In the CA/OR drift-gillnet fishery, the Council proposes Alternative 2 that includes adoption in the FMP of all federal conservation and management measures in place under the ESA. There are two federally implemented time/area closures now in place to protect leatherback and loggerhead sea turtles. If the scope of the BiOp's review for this fishery is limited to impacts on these sea turtles under the existing regulations as stated in Alternative 2, a review of the original basis for implementing these regulations will not occur. By recommending the addition of the above requested language to 8.5.1 Alternative 2, the scope of the BiOp's review is consistent with the scope of review that provided the baseline for the 2000 BiOp upon which the current regulations are based.

Basing a BiOp's scope of review on conditions as they existed prior to the 2000 BiOp rather than on the specific proposed management measure is acceptable to NMFS when such a request is made to the consulting agency (NMFS protected resources) by the action agency (Council/NMFS sustainable fisheries). This situation recently occurred with the Western Pacific Fishery Management Council. The scope of review for the 2001 BiOp for the pelagic longline fishery was based on the longline fishery prior to restriction when the proposed management measure for the fishery contained in the draft Environmental Impact Statement (DEIS) called for the implementation of fishery restrictions. NMFS based the scope of review on the fishery prior to restrictions rather than on the fishery under the restrictions being proposed.

Since the drift-gillnet fishery was reviewed in the 2000 BiOp, annual fishing effort has been about half of the level used in the BiOp to assess the level of sea turtle impacts. Also, latent effort is more constrained due to reduced number of permits (a drift-gillnet permit that is not renewed annually drops from the fishery and cannot be reissued).

Unless the scope of review of the drift-gillnet fishery for the HMS FMP BiOp is consistent with that of the 2000 BiOp, a review of the original basis for current restrictions taking current levels of fishing effort into account will not occur. Additionally, even if such a review results in a jeopardy determination, NMFS may establish less restrictive reasonable and prudent alternatives than those currently in place.

Sincerely,

Chuck Janisse,
On behalf of the Federation of Independent Seafood Harvesters

cc.
Rod McInnis
Eldon Greenberg

ANIMAL ALLIANCE

May 28, 2003

RECEIVED

MAY 28 2003

PFMC

Dear Dr. Hans Radke,

I very much appreciate the PFMC for taking a precautionary and risk-averse approach in the conservation of tunas, billfish and sharks by maintaining a ban on longline fishing within 200 miles of the California coast.

I am, however, very concerned that California fleets are being allowed to use longlines in fisheries where Hawaiian boats were banned.

On behalf on Animal Alliance, an organization working to preserve and protect sea turtles since 1989, I respectfully urge that you immediately pass regulations requiring US vessels fishing outside the US exclusive economic zone (beyond 200 miles from shore) be subject to all catch limits and by-catch reduction measures in place for vessels fishing the same waters out of Hawaii.

I also urge a requirement minimum of 25% observer coverage and use of mandatory vessel monitoring in order to accurately count the catch and by-catch on the high seas and to ensure compliance with conservation measures.

Sincerely,

Catherine Burton
Biologist/Operations Director
Animal Alliance

1300 Luisa Street, Suite 24 Santa Fe, New Mexico 87505 USA
Tel 505-986-6007 Fax 505-982-9481 allanimals@igc.org

Enough is enough! We are severely depleting an un-renewable resource!!

RECEIVED

MAY 2 8 2003

PFMC

We must control this madness right now!

UNREGULATED LONGLINE INDUSTRIAL FISHING FLEET IN CALIFORNIA

In August of 2000 STRP successfully won a lawsuit which closed down the swordfish longline fishery in Hawaii and restricted the time and areas where tuna longlining is allowed. Longlining is a reckless fishing technology that kills a wide range of non-target species including marine mammals, birds, fish and other marine life. The suit was made on behalf of the large number of sea turtles being injured and/or killed (including the critically endangered Pacific leatherback).

As a result of the lawsuit, a number of Hawaiian vessels dropped their Hawaii permit and moved their operation to California to avoid the regulations. They are now fishing in the same areas from which they were banned and "legally" landing their fish in California, instead of Hawaii!

We are currently in Federal Appeals Court trying to close this legal travesty of a loophole. Another way to close this loophole is to convince the Pacific Fishery Management Council to pass rules requiring the California longline fleet to follow the same regulations that are required on the HI longline fleet.

Dr. Hans Radke, Chair

Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 200

Portland, OR 97220-1384

FAX 503-820-2299

Regards,

T Rucci 5-28-03

Tom Rucci
R&D Project Manager, Speakers
Tel: 949.226.5178
Fax: 949.369.8528
www.Sonance.com

THOMAS D. RUCCI
3505 Redwood St.
Oceanside, CA 92054

RECEIVED
MAY 29 2003
PFMC

Dr. Hans Radke, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384
FAX 503-820-2299

Dear Dr. Hans Radke,

I understand that the PFMC I keeping a ban on longline fishing within 200 miles of the California coast. This will help to protect tunas, billfish and sharks from being wiped out. However, I am not at all happy that California fleets are being allowed to use longlines in fisheries where Hawaiian boats were banned. What good is that? How will fish stocks recover?

I believe that all fishing vessels should have observors or monitors of catch and bycatch on the high seas.

Due to the seriousness of the soon-to-be empty ocean problem, I no longer purchase or eat fish and I try to persuade my friends and the restaurants where I eat to pay attention to the depletion of fish stocks. Instead of allowing fishing vessels to end the fishing business for everyone by extirpating the fish, why cannot we have the kind of quotas that worked so well for the Australian lobster industry?

I'm sure you don't want to preside over the extinction of fish or turtles or any other species Please do what you can to protect the natural world.

Sincerely,

Katherine Gould-Martin

[redacted]
Ms. Katherine Gould-martin
Bard College
Annandale On Hu, NY 12504

29 may 2003

Subject: Fwd: Close the loophole favoring California longliners
From: "PFMC Comments" <pfmc.comments@noaa.gov>
Date: Thu, 24 Apr 2003 07:05:41 -0700

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, Oregon 97220-1384
Phone: 503-820-2280
Fax: 503-820-2299
On the web at: http://www.pcouncil.org

Subject: Close the loophole favoring California longliners
From: <c.mastro@verizon.net>
Date: Wed, 23 Apr 2003 21:13:07 -0800

Dear Mr. McIsaac and Mr. Hight,

Pacific leatherback sea turtle populations are crashing, from 80,000 in 1980 to fewer than 5,000 today. Recent scientific studies and legal findings indicate that U.S. and foreign longline fishers jeopardize the survival of these turtles.

Of particular concern are longline vessels operating from the U.S. west coast. Longline fishers based in Hawaii since 2000 have been subject to gear and/or area restrictions to protect leatherback sea turtles. Longline fishers that land their catch in California fish in many of the same areas, but illogically have not been faced with any of these regulations. This has caused some Hawaii-based vessels to relocate and de-register in Hawaii, swelling the number of California-based vessels to 30-40.

The Pacific Fisheries Management Council at its October 28-November 1 meetings passed a plan for highly migratory species that leaves this loophole open, thus unfairly favoring California-based fishers and leaving the turtles open to fishing practices that they cannot withstand. This loophole should be closed at the earliest opportunity, and no later than the March 10-14 Pacific Fishery Management Council meetings in Sacramento.

Please do all that you can to ensure that West Coast-based longline fishers are subject to the same regulations as those in Hawaii, and please reply and let me know what actions you will take.

Chris Mastro
PO Box 2114
Wrightwood, CA 92397
c.mastro@verizon.net

PFMC Comments <pfmc.comments@noaa.gov>
Pacific Fishery Management Council

Subject: Fwd: longlining
From: "PFMC Comments" <pfmc.comments@noaa.gov>
Date: Fri, 18 Apr 2003 12:54:42 -0700

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, Oregon 97220-1384
Phone: 503-820-2280
Fax: 503-820-2299
On the web at: http://www.pcouncil.org

From: "Jim Kane" <jkane@bradenonline.com>
Date: Fri, 18 Apr 2003 08:42:06 -0400

Dear Mr. McIsaac:
Please do not allow longline fishing all\ong the Pacific coast. It is a very detrimental practice and is indiscriminant in its killing and injury to fish and other marine life.
-Jim Kane

PFMC Comments <pfmc.comments@noaa.gov>
Pacific Fishery Management Council

Subject: Fwd: Anti-Longline to Save the Ocean's
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 05 May 2003 08:16:01 -0700

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, Oregon 97220-1384
Phone: 503-820-2280
Fax: 503-820-2299
On the web at: http://www.pcouncil.org

Subject: Anti-Longline to Save the Ocean's
From: "bd" <bdatirb.net@verizon.net>
Date: Sun, 4 May 2003 12:36:15 -0400

Dear Sirs,

I am a concientious avid sea, nature, and environmental lover. I am a sport and recreational diver, fisherman in gulfs, bays, seas, and oceans around the world. I live on the west coast of Florida, Tamp Bay area. Please eliminate the use of longline fishing w/ in the jursidiction of the US, The depletes our natural resources, and once the older deep water stock is eliminated, ut will never come back. Please do the right thing, and conserve our oceans and its natural resources for our future generations. This is Huge Problem..Please do the right thing. This also includes the banning of all Oil rigs off the West coast of Florida. there are fewer and fewere beaches that you can walk on that don't show tar and oil spill product. Please, I beg you do the right thing, not what is in the short term economic best interests of you or Big Money. Thank you!

Bruce Dutton

PFMC Comments <pfmc.comments@noaa.gov>
Pacific Fishery Management Council

Subject: Fwd: Re: Anti-Longline to Save the Ocean's
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 05 May 2003 08:16:27 -0700

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, Oregon 97220-1384
Phone: 503-820-2280
Fax: 503-820-2299
On the web at: http://www.pcouncil.org

Subject: Re: Anti-Longline to Save the Ocean's
From: "bd" <bdatirb.net@verizon.net>
Date: Sun, 4 May 2003 12:45:52 -0400

Dear Sirs & Madames,

I am a concientious and avid sea, nature, and environmental lover. I am a sport and recreational diver, fisherman in gulfs, bays, seas, and oceans around the world. I live on the west coast of Florida, Tampa Bay area. Please eliminate the use of longline fishing w/ in the jursidiction of the US, This has huge consequences, one of which depletes our natural resources. The older shallow water as well as deep water fishery species are being depleted and on the verge of being eliminated, they will never come back. Please , let us learn from our past. Please do the right thing, and conserve our oceans and its natural resources for our future generations. This is Huge Problem..Please do the right thing. This also includes the banning of all Oil rigs off the West coast of Florida. there are fewer and fewer beaches that can walked w/ out contacting this toxic oil spill product, from the occasional oil industry mishap. Please, I beg you do the right thing, what is in your heart. The may not be in the short term economic best interests to you or Big Money, but it will be the Right Thing! . Thank you!

Bruce Dutton

PFMC Comments <pfmc.comments@noaa.gov>
Pacific Fishery Management Council

WASHINGTON, DC OFFICE
fifth floor
flour mill building
1000 potomac street nw
washington, dc 20007-3501
TEL *202 965 7880* FAX *202 965 1729*

OTHER OFFICES
new york, new york
portland, oregon
seattle, washington

GSBLAW.COM

GARVEY SCHUBERT BARER

Please reply to ELDON V.C. GREENBERG
egreenberg@gsblaw.com TEL EXT *1789*

May 28, 2003

VIA FEDERAL EXPRESS

Mr. Hans Radke
Chair
Pacific Fishery Management Council
7700 NE Ambassador Place
Suite 200
Portland, OR 97220-1384

HMS FMP

Dear Mr. Radke:

I am writing on behalf of the Federation of Independent Seafood Harvesters (the "Federation") concerning the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (the "HMS FMP"). The Federation understands that the Pacific Fishery Management Council (the "Council") may adopt the HMS FMP, including management measures for the CA/OR drift gillnet fishery for swordfish and sharks (the "fishery"), at its June meeting. The Federation strongly believes that, when the National Marine Fisheries ("NMFS") conducts its evaluation of the Council's proposed action under the Endangered Species Act, 16 U.S.C. § 1531, *et seq.* (the "ESA"), NMFS should consider the impact of the fishery under the same terms and conditions evaluated in NMFS' October 2000 Biological Opinion.

As you may recollect, the Federation wrote you on May 4, 2003, urging that the Council recommend that NMFS conduct its ESA evaluation "under current conditions, but without the leatherback and loggerhead closures." The Federation took this position because the Federation believes that it is important for NMFS to compare the effects of the fishery today with the effects of the fishery as they were evaluated in October 2000 Biological Opinion, prior to the implementation of the current closures. It continues to believe that this is a sound approach for implementation of NMFS' ESA responsibilities. It further believes, for the reasons stated in its May 4 letter, that this recommendation can be made without necessarily modifying the management measures proposed by the Council, *i.e.*, without eliminating the closures from the proposed action.

Notwithstanding the Federation's recommendation, it may be that NMFS will hesitate to conduct its ESA review of anything other than the Council's "proposed action." In such circumstances, as an alternative, the Federation would suggest that it would be appropriate for

the Council to consider adopting as its proposed action the management measures as they existed in the fishery *prior* to the implementation of the leatherback and loggerhead sea turtle closures. If the Council proceeded in this fashion, this would ensure that NMFS' new biological opinion examined the fishery under the same regulatory conditions that were evaluated in 2000.

The Federation believes that there is substantial justification for adopting this approach. In extensive comments submitted to NMFS on November 21, 2001, October 18, 2002 and February 7, 2003, all of which are enclosed, the Federation explained that the current closures are not necessary to avoid "jeopardy" or otherwise protect leatherback and loggerhead sea turtles. Thus, the Council, in the Federation's judgment, need not incorporate these closures in its management measures in order to ensure that those measures are consistent with the ESA. Indeed, the Federation firmly believes that a new biological opinion will reach a "no jeopardy" conclusion. Furthermore, as explained in the Federation's May 4 letter, even should NMFS find "jeopardy," there are "reasonable and prudent alternatives" that are less restrictive than the current closures and that could then be put in place. Consequently, eliminating the leatherback and loggerhead closures from the Council's proposed action would be both prudent and sensible.

Thank you for your consideration of the Federation's views.

Sincerely,

Eldon V.C. Greenberg
Counsel to the Federation
of Independent Seafood Harvesters

Enclosures

cc: Chuck Janisse
Rodney McInnis

The Mediation Institute
3102 Bird Rock Road
Pebble Beach, CA 93953
831-649-1730

June 5, 2003

To: Dr. Hans Radtke, Chairman
Pacific Fishery Management Council
From: The Pacific Cetacean Take Reduction Team
Re: June 18th Consideration of the Highly Migratory Species Management Plan

The Pacific Cetacean Take Reduction Team (TRT) was convened by NMFS in 1997 to address incidental takes in the drift gillnet fishery and has been meeting annually. At our annual meeting on 4-5 June 2003, the TRT learned that the California/Oregon shark/swordfish drift gillnet fishery and its measures to protect turtles, could be negatively impacted by actions related to the California pelagic long line fishery. In the Pacific, loggerhead and leatherback sea turtles have declined dramatically in recent years. The drift gillnet fishery has undertaken and been subjected to numerous measures to reduce incidental mortality of marine mammals and turtles. Recent time/area closures have been imposed on this fishery to further reduce already low levels of takes of turtles. These have included closure of some of the primary fishing areas for this fishery. Takes of both loggerhead and leatherback turtles for the last three years (2000-2002) in this fishery have consisted of only a single observed take out of 1,143 observed sets.

The rate of turtle takes in the longline fishery in the central and eastern Pacific has been dramatically higher than in the drift gillnet fishery. The California-based longline fishery has not been subjected to the types of measures to reduce turtle take as have been imposed in the drift gillnet and Hawaii longline fishery. The forthcoming Highly Migratory Species Fishery Management Plan includes both the California drift gillnet fishery and the longline fishery. These would therefore be evaluated jointly by NMFS for the impacts they pose to threatened and endangered sea turtles.

Current regulations significantly constrain the number of allowed takes of sea turtles. Introduction of the California longline fishery would greatly disadvantage the drift gillnet fleet, since any take allowed would be shared between the fleets. Therefore, the TRT recommends that if the Council decides to authorize the California longline fishery, then the introduction should be contingent on that fleet's ability to dramatically reduce its incidental takes so that there would be no impact to the drift gillnet fishery or sea turtle conservation. Furthermore, the TRT recommends that if NMFS authorizes additional overall takes of turtles, they should be allocated to the drift gillnet fishery, which has low rates of turtle takes and is operating under extreme restrictions, prior to allowing turtle takes in another fishery with higher rates of take.

Finally, the TRT recommends that NMFS and the PFMC re-consider time/area closures for leatherback turtles as soon as additional data becomes available to expeditiously identify the time and areas that could be re-opened without impact to sea turtles.

Thank you for consideration of our comments.

cc. Rodney R. McInnis, NMFS Southwest Region
Enclosures: Members of the Pacific Cetacean Take Reduction Team

Members of the Pacific Cetacean Take Reduction Team

In February, 1996, the National Marine Fisheries Service (NMFS), in accordance with the provisions of the Marina Mammal Protection Act, convened a Take Reduction Team with representatives from diverse stakeholder groups to develop a Take Reduction Plan to reduce the incidental taking of marine mammals in the California/Oregon thresher shark and swordfish drift gillnet fishery. The TRT reached a consensus on a take reduction plan on June 27, 1996. The proposed plan and implementing regulations were adopted by NMFS in October, 1997. Each year thereafter, the TRT members have re-convened to evaluate the efficacy of the measures imposed and to consider other measures and strategies that may be appropriate. The plan continues to achieve progress in reducing marine mammal take in the fishery.

Members of the TRT include:

Cathy Campbell
Southwest Regional Office
National Marine Fisheries Service

Patricia Lawson
Office of Protected Species
National Marine Fisheries Service

Hannah Bernard
Maui Ocean Center

Marydele Donnelly
The Ocean Conservancy

Tim Eichenberg
Oceania

John Calambokidis
Cascadia Research

Steve Crooke
California Department of Fish and Game

Dave Hanson
Pacific States Marine Fisheries Commission

Doyle Hanan, PhD.

Jim Harvey
Moss Landing Marine Laboratories

Ronald Troutman
Fisherman

Tony West
Fisherman (F.I.S.H.)

Donald Krebs
Fisherman

Chuck Janisse
F.I.S.H.

Dale Sweetnam
California Department of Fish and Game

A. TRT LETTER

B. ENDANGERED SPECIES ACT, AS I UNDERSTAND IT.

C. NEW FISHING METHODS

1. FISH NEWS
2. AQUATIC RELEASE CONSERVATION

D. HAWAII LONGLINE FISHERY BIOP'S: THE REAL STORY

Subj: **TRT Letter**
Date: 6/10/03 9:45:10 PM Pacific Daylight Time
From: d.dkrebs@worldnet.att.net (Deborah Krebs)
To: cjanisse@vermontel.net (Chuck Janisse), LaPazKD@aol.com (Pete Dupuy)

To TRT Members,

I have had time to think about the letter the TRT wrote up about the California Long Line and California Drift Net Fisheries on the Turtle Takes as one fishery that would be evaluated jointly by NMFS. What that means to me is when the BI-Op comes there would be only one opinion and that would not be good for Fisheries management. Plain - because there are different issues on these two fisheries.

So my feelings on this are to keep the two fisheries separate and that we have our allowable take and the long liners have theirs. End of story.

As a TRT member and fisherman my job is just to tell you what is happening in our fishery and answer those questions concerning those in this Fishery and nothing else. I'm not here to make policies to other Fisheries. Such as the California Long Line Fishery and placing ultimatum's. So therefore, I do not want the letter in its current form to be forwarded to the PFMC.

I recommend that the letter read as follows:

The Pacific Cetacean Take Reduction Team was convened by NFMS in 1997 to address incidental takes in the gillnet fishery and has been meeting annually. At our annual meeting on June 4-5 2003, the Take Reduction Team learned that the California/Oregon shark/swordfish drift gillnet fishery and its measures to protect turtles, could be negatively impacted by actions related to the California pelagic long line fishery. In the Pacific, loggerhead and leatherback sea turtles have declined dramatically in recent years. The drift gillnet fishery has undertaken and been subject to numerous measures to reduce incidental mortality of marine mammals and turtles. Recent time/area closures have been imposed on this fishery to further reduce the already low levels of takes of turtles. These have included closure of some of the primary fishing areas for this fishery. Takes of both loggerhead and leatherback turtles for the last three years (2000-2002) in this fishery have consisted of only a single observed take out of 1,143 observed sets.

The forthcoming Fishery Management Plan includes both the California drift gillnet fishery and the long line fishery. These would therefore be evaluated jointly by NMFS for the impacts they pose to threatened and endangered sea turtles.

Current regulations significantly constrain the number of allowed takes of sea turtles. Therefore, the TRT recommends that if the council decides to authorize another Fishery, the council should separate the two fisheries and have two separate BI-Ops on the fisheries.

Finally, the TRT recommends that NMFS and the PFMC re-consider time/area closures for leatherback turtles as soon as additional data become available to expeditiously identify the time and areas which could be re-opened without impact to sea turtles.

The last paragraph is worded from Marydele's email.

I am sorry to add more confusion to the confusion but I feel very strongly that Fishermen should stick together and work for a common goal, which is to Stay Fishing.

- Donald Krebs

B

Endangered Species Act

The Endangered Species Act requires a scientific determination that any federal action interacting with a listed species will not "jeopardize the continued existence" of that species. This scientific analysis is required by law to be documented in a "Biological Opinion". If the Biological Opinion determines that "jeopardy" exists, the ESA requires the implementation of "reasonable and prudent alternatives" to mitigate the "jeopardy".

The prohibition against swordfish style longline fishing now in place for the Hawaii longline fishery is the "reasonable and prudent alternative" developed by NMFS to mitigate a "jeopardy" determination documented in the 2001 Biological Opinion for that fishery.

The Council is being asked to apply this prohibition to the California based longline fishery without the underlying scientific analysis and determination that a Biological Opinion is by law required to provide.

NMFS asserts that because there are observed takes of sea turtles in the California longline fishery, the Council should assume that such takes rise to the level of "jeopardy" and take an action that would essentially shut down a fishery.

The issue is not whether the California longline fishery interacts with sea turtles, the issue is whether or not such interaction rises to the level of "jeopardizing the continued existence" of these animals. The Council is not authorized by law to conduct the legally required Biological Opinion to make this legally required determination--NMFS is.

NMFS is asking the Council to relieve it of its legal obligations to document in a Biological Opinion the scientific justification for enacting regulations that will foster the economic collapse of a small American and American Vietnamese fishing community. If the Council takes this bait, and votes to adopt Alternative 2 without modification as its preferred, NMFS escapes responsibility for documenting the legally required scientific basis for such a drastic outcome, and escapes responsibility for being the management body that will take the heat for creating the economic devastation that will result.

Stay with alternative 3.

C. 1

FishNews

NOAA Fisheries

FishNews June 6, 2003

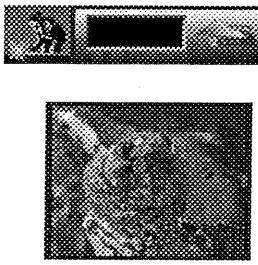
National – Study Shows How Adjustments in Gear, Fishing Practice Can Reduce Sea Turtle Bycatch In Longline Fishery

Continuing efforts to aid the recovery of sea turtle populations, a team of NOAA scientists and U.S. fishermen is developing effective ways to minimize the potential for harming or catching them in pelagic longline fisheries. Fishing gear specialists working at the Pascagoula, Miss., laboratory of NOAA Fisheries have completed the first two years of a three-year research program in cooperation with the Bluewater Fishermen's Association.

To date, the research – which tested five potential bycatch reduction techniques during 687 research sets on the Grand Banks in the Western North Atlantic – has indicated that longline fishermen can avoid unintentional catches of loggerhead sea turtles by reducing the time their hooks are in the water during daylight hours.

Even more impressive was the sea turtle bycatch reduction achieved by using circle hooks instead of the J hook historically used in the fishery, and by using mackerel for bait rather than squid, the primary bait used in the fishery.

"This program is a fine example of a cooperative effort between federal and state research organizations and private industry to solve a complex environmental problem. The positive results will ensure a healthy and richly diverse marine ecosystem," said Bill Hogarth, director of NOAA Fisheries. "The development of effective measures to minimize sea turtle bycatch will help ensure successful turtle conservation efforts and allow valuable commercial fisheries to continue to operate." For more information about this study, read the press release online .



ARC
~PHOTO ALBUM~
~INSTRUCTIONS~
~LINKS~
~ENDORSEMENTS~
RELEASE GUIDE
~NEWS~
ARC PRODUCTS
GOALS

AQUATIC RELEASE CONSERVATION

The ARC De-hooker, dehooking device, deep throat dehooker and hook removal device safely and instantly removes hooks from the body, lip, mouth and throat of fish, sea turtles, marine mammals and sea birds without touching or removing the catch from the water, which ensures the released catch the maximum probability of survival consistent with National Standard 9 of the Magnuson-Stevens Act, Marine Mammal Protection Act, Sustainable Fisheries Act and the Endangered Species Act Biological Opinion.

The NOAA/Laforce Line Cutter safely and quickly removes (cuts) all line and gear from entangled sea turtles, marine mammals and sea birds that must be left in the water. Co-designed and Co-developed in cooperation with NOAA/MSLABS/Laforce/Harvesting Team/ARC.

The NOAA/Epperly Biopsy Pole safely takes aseptic biopsy samples from fish, sea turtles, and marine mammals. Co-designed and co-developed in cooperation with NOAA/SEFSC/Epperly/ARC.

Mission Statement

The world's fisheries populations are showing signs of drastic declines due to over fishing and improper handling/release skills and tools. Bycatch and discards have become a central concern for Congress, fishery managers, academia, conservation organizations, environmental groups, the recreational and commercial fisheries, and the public.

In the United States, catch and release fishing has been very popular for many years. The U.S. recreational angler and commercial fishermen are some of the most sophisticated and conservation minded anglers and fishermen in the world. The success of catch and release and ultimately fisheries conservation will be determined by how discards and bycatch are handled and safely disentangled and released. Proper release tools such as a de-hooker, dehooking device, deep throat dehooker, hook removal device, and line cutter have become an essential part of the U.S. angler's and fishermen's tackle.

For catch and release fishing and bycatch conservation to be effective, it will be necessary for fishing tackle manufacturers and gear technologists to cooperate with and continue to educate anglers and fishermen on proper catch and release techniques and on the correct dehooking device and line cutter to use. Aquatic Release Conservation, Inc. (ARC) has researched and developed proper catch and release techniques for over a decade. ARC introduced the Original de-hooker, dehooking device, deep

throat dehooker, and hook removal device as the most effective and efficient manner of safe release, that instantly removes hooks from the body, lip, and throat of fish, turtles, marine mammals, and sea birds without touching or removing them from the water.

This type of safe catch and release and bycatch conservation will ensure the released catch the maximum probability of survival, consistent with National Standard No. 9 of the Magnuson-Stevens Act, the Marine Mammal Protection Act, the Sustainable Fisheries Act, and the Endangered Species Act Biological Opinion. Fishing tackle manufacturers and gear technologists have a duty to help conserve our natural fishery resources and become good stewards of the environment.

In cooperation with NOAA, SEFSC, MSLABS, Harvesting Team, and BWFA, ARC has Co-designed and Co-developed the NOAA/Laforce Line Cutter, NOAA/Epperly Biopsy Pole and has improved it's original hook removal devices. ARC supports proper catch and release fishing and bycatch conservation and continues to be a good fisheries conservation partner by introducing and continuing to educate Fishers and Anglers on proper release and disentanglement techniques and tools with the Original de-hooker, deep throat dehooker, hook removal device, and NOAA/Laforce Line Cutter. Fisheries conservation is everyone's responsibility!

ARC Profile 

For the last decade Aquatic Release Conservation has researched and developed safe and efficient catch and release techniques and tools such as the ARC dehooking device, hook removal device and the deep throat dehooker in an effort to reduce post release mortality of bycatch and discards in the National and International, Commercial and Recreational Industry. ARC is working in cooperation with NOAA, SEFSC, MSLABS, Harvesting Team, BWFA, and others to Co-design and Co-develop the highest quality and most effective and efficient release tools available for the future of our fisheries.

CUSTOMER SATISFACTION-FEATURE ENDORSEMENT 

Russell Nelson, Ph.D. - HMS AP

"After recently watching Rodney Smith effortlessly release drum and sea trout using one of your De-hookers, I was very anxious to try it myself. I had the opportunity this past weekend and was pleased to find that using the De-hooker was every bit as easy as it had appeared. The device is phenomenal. We released over a dozen undersize grouper, some triggerfish, and several king mackerel in seconds without ever having to bring one aboard the boat. The lack of handling and the short time needed to dislodge the hooks - several of which were deep in the throat -

reduced stress on the fish dramatically. Your tool seems to me to be the single most effective conservation device offered to the angling public in my lifetime...Your tool can let even the novice angler successfully release fish with the absolute minimum of harm. I will be a strong advocate of the De-hooker from now on, and intend to spread the word. Thanks for your great contribution to fisheries conservation."

Contact Information:

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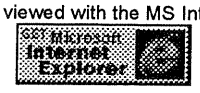
Webmaster: dehooker@dehooker4arc.com

U.S. PATENT NO. 4,914,853 U.S. DESIGN PATENT NO. 382,628

February 1, 2003: Aquatic Release Conservation mourns the loss of our space heroes in the recent Space Shuttle disaster. Our hearts and our minds go out to all the families and friends of the astronauts and NASA.

September 11, 2001: Aquatic Release Conservation joins in with ALL Americans and their Allies to morn the ones that needlessly lost their lives in the cowardly attack on our country and innocent civilians on 9/11/01. We will never forget their sacrifice and the sacrifice of their families and friends. We will never forget all the Heroes that emerged that day and the days to follow. We will never forget the price it costs to keep our country FREE. WE WILL NEVER FORGET 911 !!!

This site best viewed with the MS Internet Explorer



download it now!

HI LONGLINE FISHERY BIOP'S: THE REAL STORY

1. **1998 Biological Opinion** issued November 3.

Scope of action: continued operation of HI longline fishery. Annual permit and effort averages for the period 1994-1997 were:

Permits issued: 164
Active vessels: 110
Total hooks set: 13.9 million

Method of analysis (p.33): TURTSIM (Skillman & Kleiber) a computer program using a regression tree analysis method to simulate the dynamics of sea turtle populations.

Conclusion: continued operation of the HI longline fishery for 1998-2001 is not likely to jeopardize loggerhead, leatherback, olive ridley, green, or hawksbill sea turtles. TURTSIM analysis found that there was almost no discernable change in simulated population trajectories if the effects of the fishery were removed from the simulation, or if the effects were increased five-fold.

Allowable annual incidental take:

Loggerhead: 498 takes / 103 mortalities
Olive Ridley: 168 takes / 46 mortalities
Leatherback: 244 takes / 19 mortalities
Green: 52 takes / 15 mortalities
Hawksbill: 2 takes / 1 mortality

2. **CMC sues NMFS** on February 24, 1999

Complaint: CMC challenges no jeopardy opinion of 1998 BiOp as well as violation of NEPA.

Judgement: on October 8, 1999, summary judgment upheld no jeopardy BiOp, and ruled that NEPA was violated. Court ordered NMFS to do an EIS.

3. **2001 Biological Opinion** issued March 29

Reason for reinitiation: NMFS determines that there is a .66 probability that mortalities of olive ridleys have been exceeded. In doing the BiOp analysis NMFS abandons TURTSIM in favor of a qualitative analysis that theorized that: (1) because populations are in apparent decline, turtles must not be replacing themselves; (2) additional mortality will reduce the number of turtles and, therefore will reduce the species ability to reproduce, and (3) reducing the species ability to reproduce will appreciably diminish the populations ability to survive and recover.

Scope of action: management alternative 1, the no action alternative, contained in the DEIS issued on December 8, 2000. I have not found any explanation for why the scope of action was not consistent with DEIS alternative 7, the preferred action, which would require longline fishermen to use line shooters or weighted branch lines in order to keep the deepest part of the mainline between any two floats greater than 100 meters.

Conclusion: HI longline fishery likely to jeopardize green, leatherback, and loggerhead sea turtles. Did not find jeopardy for olive ridley.

RPA: Prohibits swordfish style fishing north of the equator.

Allowable annual incidental take:

Green: 14 (52) takes / 9 (15) mortalities
Leatherback: 26 (244) takes / 14 (19) mortalities
Loggerhead: 5 (498) takes / 2 (103) mortalities
Olive Ridley: 67 (168) takes / 59 (46) mortalities

4. **HLA sues NMFS** in April, 2001:

Complaint: HLA challenges jeopardy opinion and claims its procedural rights as an "applicant" had been violated.

Magistrate's report and recommendation: On April 25, 2002, the magistrate found that HLA was an "applicant" and was not accorded its procedural rights by NMFS during preparation of the 2001 BiOp. However, since NMFS had given notice on December 12, 2001 that it was reinitiating consultation on the HI longline fishery, the magistrate found that the substantive challenge was moot, but recommended that NMFS treat HLA as an "applicant" during preparation of the new BiOp.

District Court's Judgment: On September 24, 2002 the judge adopted the magistrate's report in part. The judge set aside the 2001 BiOp on procedural grounds, but stayed the order until November 15, 2002 to give NMFS time to complete the new BiOp and include HLA as an "applicant" in the process.

5. **2002 Biological Opinion** issued in November, 2002.

Scope of action: HI longline fishery as it exists under regulations implemented on June 12, 2001. Regulations prohibit swordfish style fishing north of the equator including:

- Targeting swordfish
- Float line length more than 20 meters
- No lightsticks may be possessed aboard
- No fewer than 15 branch lines may be set between any two floats
- Deepest point of mainline between any two floats is greater than 100 meters.

Conclusion: no jeopardy for any sea turtle species.

Allowable annual incidental take: figures in [ ] are 2001, in ( ) are 1998
Green: 8 [14](52) takes / 7 [9](15) mortalities
Leatherback: 8 [26](244) takes / 3 [14](19) mortalities
Loggerhead: 14 [5](498) takes / 8 [2](103) mortalities
Olive Ridley: 26 [67](168) takes / 24 [59](46) mortalities

6. **Final Rule Published** on June 12, 2002, RPA of 2001 BiOp implemented by adoption of rules implemented on June 12, 2001.

7. **HLA vs. NMFS, motion for summary judgment** dated April 16, 2003:

Substantive Claims:

- In response to HLA's initial challenge that NMFS abandoned the "best available science" when they disregarded the TURTSIM modeling that produced a no jeopardy finding in the 1998 BiOp in favor of a qualitative approach that produced a jeopardy finding in the 2001 BiOp, NMFS commissioned Dr Chaloupka to develop stochastic simulation models to more fully analyze sea turtle population dynamics. NMFS expected the modeling results to support the 2001 jeopardy finding.

  NMFS reinitiated consultation on December 12, 2001, and began writing a new draft BiOp before the modeling results had been compiled. A draft of the new BiOp, based on a scope of action consistent with the 2001 BiOp, was internally circulated in early April, 2002. This draft concluded that the HI fishery jeopardized sea turtles. It stated that NMFS used stochastic simulation models to conduct its jeopardy analysis and included place markers for discussion of Dr. Chaloupka's model results.

  In late April, NMFS scientists announced that preliminary applications of the Chaloupka model to Pacific stock of loggerhead sea turtles indicated that the overall impact of the HI longline fishery, whether it was absent or operating to such a degree as to take every loggerhead turtle in the area (a 100X multiplier), was virtually identical and miniscule. NMFS scientists concluded that the longline fishery would have to be increased five-fold or more to have a detectable impact on the long-term population reference point for loggerheads and leatherbacks.

  In the final 2002 BiOp, NMFS explained it's decision not to use Dr. Chaloupka's modeling results stating that comprenhensive models like the one developed by Dr. Chaloupka require detailed information on the biology and ecology of sea turtles and the environmental relationships that... is not available for sea turtles in the Pacific Ocean. Using this kind

of model under those circumstances would give the appearance of numerical precision without the reality of it.

Instead, NMFS narrowed the scope of the action. The 2002 BiOp was based on the 2001 BiOp's RPA generated regulations, and concluded no jeopardy. Essentially, NMFS abandoned Dr. Chaloupka's science based analysis in favor of the qualitative approach used to find jeopardy in the 2001 BiOp. Because the court had invalidated the 2001 BiOp on procedural grounds, NMFS redefined the scope of 2002 BiOp in an effort to validate the invalidated 2001 BiOp's RPA without demonstrating a scientific basis for that RPA. The 2002 BiOp continues to implement the substantive conclusions of 2001 BiOp which has been vacated by court order.

- 2002 BiOp did not take into account transferred effects (lost production from HI fishery will be replaced by imports from international longline fisheries where incidental take of sea turtles in greater). In the FEIS, NMFS summarized cumulative effects of 2001 RPA on sea turtle populations as "adverse and significant."