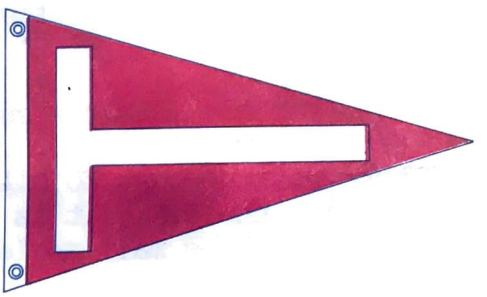
U.S. DEPARTMENT OF COMMERCE
National Oceanic & Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
P.O. Box 271, La Jolla, California 92038 U.S.A.

1986 BILLFISH NEWSLETTER



Results of the PACIFIC BILLFISH ANGLER SURVEY and the COOPERATIVE MARINE GAME FISH TAGGING PROGRAM

PACIFIC INTERNATIONAL BILLFISH ANGLER SURVEY

The Billfish Angler Survey was started in 1969. Since then, annual postcard surveys have been conducted to determine the amount of fishing effort and billfish catch made by anglers. In recent years this Survey has been conducted in cooperation with the International Game Fish Association (IGFA). Angler participation has increased as a result of IGFA cooperation and we are now sampling angler catch and effort in the Indian Ocean in addition to the Pacific Ocean.

For the Survey, billfish anglers are requested to take a few moments to note on the Angler Survey form (form enclosed) the number of days of fishing (by quarters of the year) and number of billfish caught (by species and by quarter of the year). These forms are then to be sent to the National Marine Fisheries Service's Southwest Fisheries Center in La Jolla, California, and information on the trend of billfish catch is calculated from these forms for the various areas of the Pacific and Indian Oceans.

This is the only international survey conducted to collect angler catch data to determine trends in angler billfish catch and effort. The survey data reflect the responses of the individual anglers. Over the

years, we have stressed the need for accurate, unbiased reporting of catch-and-effort The survey is only as valid as the data given by the cooperating anglers that participate. The survey is not a survey to determine which area has the highest catch rate, but to obtain an accurate measure of the billfish angler's success rate, or the trend of the catch rate over time. Please complete only one form per angler for any billfishing in 1985 only.

Postage for the survey card is prepaid within the U.S.A. to reduce the postage cost to billfish anglers outside the U.S., it is suggested that fishing clubs mail angler survey forms in bulk.

RESULTS OF THE SURVEY - 1984

In 1984 anglers reported a total of 10,475 angler days of billfish fishing. Many of the anglers who responded to the survey reported fishing in the north and south Atlantic, Carribbean, Gulf of Mexico, and Mediterranean. A total of 9,108 angler days was reported from the Pacific, Indo-Pacific and Indian Ocean yielding a catch of 4,042 billfish (all species). The catch per unit effort (CPUE), in this case the billfish catch per angler day, was 0.41 for the Pacific. This can also be expressed as a CPUE of 2.4 days of fishing per billfish. The 1984 values are down only slightly from the 1983 CPUE rate.

Catch rates (CPUE from catch and effort data submitted by gillfish anglers for 1984 and given in Table 1.

Table 1. Results of the 1984 billfish angler survey by location, number of angler days reported, number of billfish caught, catch per unit effort in terms of number of billfish per fishing day and number of days fishing per fish, and major species reported for the area. For comparative purposes 1983 data are given in parentheses.

	Angler fishing days	No. of billfish	Billfish per fishing day	Fishing days per billfish	Major species*
A. Pacific Ocean - areas with 100 or more angler fishing days reported.					
Southern California, U.S.A.	2,874 (2,696)	394 (485)	0.13 (0.18)	7.29 (5.56)	SM (SM)
Baja California Sur, Mexico (tip area)	2,039 (2,797)	1,044 (2,015)	0.51 (0.73)	1.95 (1.36)	SM (SM)
Hawaii, U.S.A.	1,435 (1,377)	357 (392)	0.25 (0.28)	4.02 (3.51)	BLM (BLM)
Australia	866 (560)	471 (353)	0.53 (0.63)	1.88 (1.53)	BLKM (BLKM)
Panama	243 (178)	364 (82)	1.50 (0.46)	0.67 (2.17)	SF (SF)

Table 1. (continued)

	Angler fishing days	No. of billfish	Billfish per fishing day	Fishing days per billfish	Major species*
A. Pacific Ocean - areas with 100 or more angler fishing days reported.					
New Zealand	473 (631)	50 (79)	0.11 (0.13)	9.50 (7.99)	SM (SM)
Costa Rica	140 (199)	303 (254)	2.16 (1.28)	0.46 (0.78)	SF (SF)
Ecuador	292 (94)	200 (88)	0.68 (0.94)	1.46 (1.07)	SM (SM)
Tahiti	222 (-)	36 (-)	0.16 (-)	6.17 (-)	BLM (-)
Guaymas and Kino, Mexico	194 (94)	30 (88)	0.16 (0.94)	6.36 (1.07)	SF (SF)
B. Pacific Ocean - areas with 100 or fewer angler fishing days reported.					
Mazatlán, Mexico	90 (110)	64 (64)	0.71 (0.58)	1.41 (1.72)	SF (SF)
Manzanillo, Mexico	71 (75)	25 (45)	0.35 (0.60)	2.84 (1.67)	SF (SF)
Acapulco and Zihuatanejo, Mexico	78 (100)	62 (87)	0.79 (0.87)	1.25 (1.15)	SF (SF)
New Guinea	100 (27)	0 (2)	0.00 (0.07)	0.00 (13.50)	- (SF)
Guatamala	62 (-)	38 (-)	0.62 (-)	1.59 (-)	SF (-)
Puerto Vallarta, Mexico	15 (17)	23 (20)	0.65 (1.18)	1.53 (0.85)	SF (SF)
Revillagigedo Islands, Mexico	2 (-)	2 (-)	1.00 (-)	1.00 (-)	SM/SF (-)
Clipperton Island, France	23 (-)	1 (-)	0.04 (-)	23.00 (-)	BLKM
San Blas, Mexico	5 (18)	10 (9)	2.00 (0.50)	0.50 (2.00)	SF (SF)

Table 1. (continued)

B. Pacific Ocean - areas with 100 or fewer angler fishing days reported.

Guam	34 (34)	9 (4)	0.26 (0.12)	3.77 (8.50)	BIM (BIM)
Japan	34 (36)	7 (21)	0.21 (0.58)	4.86 (1.71)	BLKM (SM)
Thailand	3 (-)	0 (-)	0.00 (-)	0.00 (-)	- (-)
Yap Island	5 (-)	0 (-)	0.00 (-)	0.00 (-)	- (-)
New Guinea	100 (27)	0 (2)	0.00 (0.07)	0.00 (13.50)	- (SF)
Northern Marianas	3 (-)	2 (-)	0.67 (-)	1.50 (-)	BIM (-)
Kiribati	56 (-)	1 (-)	0.02 (-)	56.00 (-)	SF (-)
Fiji	12 (-)	1 (-)	0.33 (-)	3.00 (-)	BIM (-)
Marshall Islands	26 (-)	1 (-)	0.04 (-)	26.00 (-)	BLKM (-)
C. Indian Ocean					
Dubai, U.A.E. Persian Gulf	34 (54)	15 (29)	0.44 (0.64)	2.27 (1.86)	SF (SF)
South Africa	22 (23)	12 (6)	0.55 (0.26)	1.83 (3.83)	SM (SF)
Kenya	341 (58)	255 (35)	0.75 (0.60)	1.34 (1.66)	SF/SM (SF)
Mauritius	17 (60)	9 (22)	0.53 (0.37)	1.9 (2.73)	BIM (BIM)

*SM - striped marlin
BLKM - black marlin
SF - Sailfish
BIM - blue marlin

Anglers also reported catches of billfish in the Atlantic, Gulf of Mexico, Caribbean and Mediterranean. Locations were Bimini, Bahamas; Cozumel, Mexico; Egypt; Palm Beach, Florida; Texas; Louisiana; Dakar, Senegal; New Jersey; Cuba.

TRENDS IN BILLFISH CATCHES

The trend of billfish catch rates from 1969 to 1984 as determined by the Survey are presented in Figures 1 to 4 for striped marlin (southern California, Baja California, Mazatlán, Mexico and (Ecuador), blue marlin (Hawaiian Islands, Guam and Tahiti), black marlin (Queensland, Australia), and for sailfish (Baja California, Mazatlan, Acapulaco, Mexico, Costa Rica, Panama, and United Arab Emirates).

Although the El Niño ended during the winter of 1982-84 the effects of the atmospheric instability continued to affect the area off southern California and Baja California and

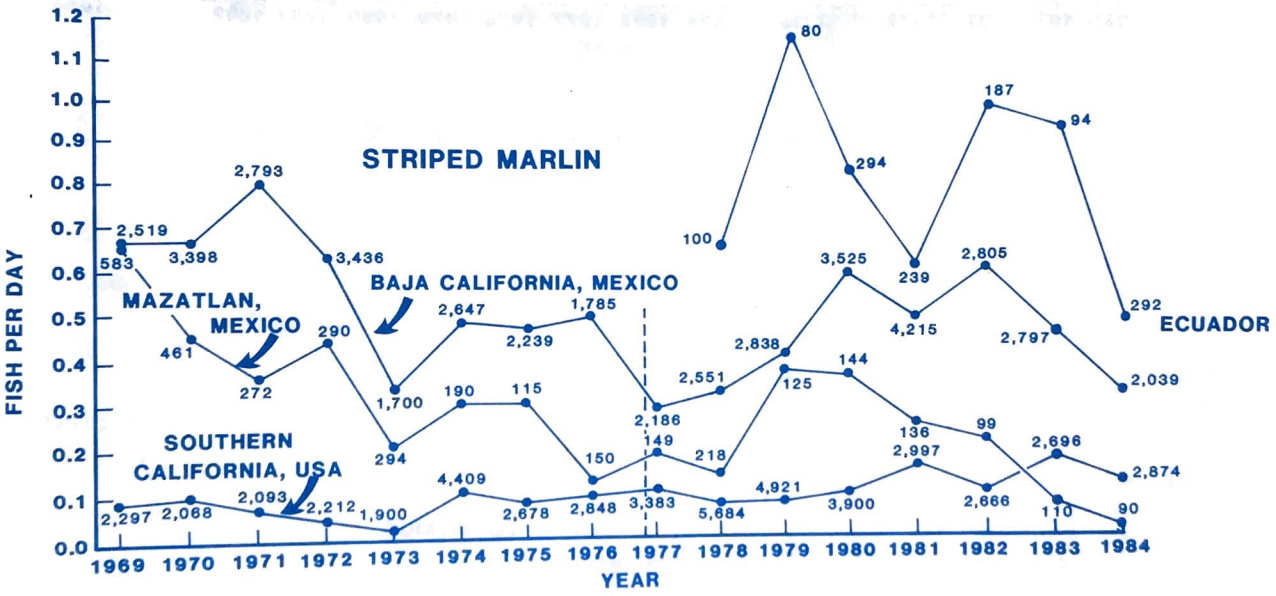


Figure 1. CPUE (#fish/angler day) for striped marlin, 1969 - 1984.

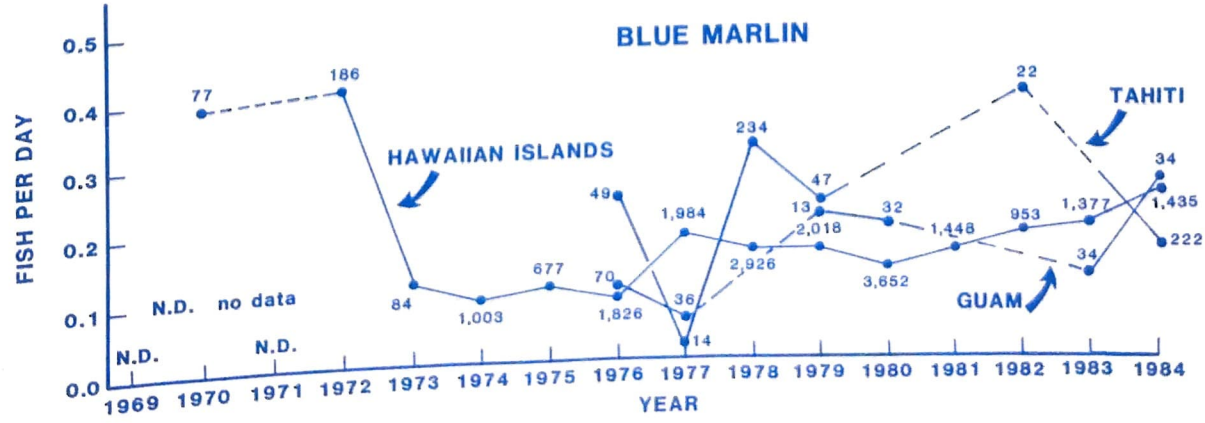


Figure 2. CPUE (#fish/angler day) for blue marlin, 1969 - 1984.

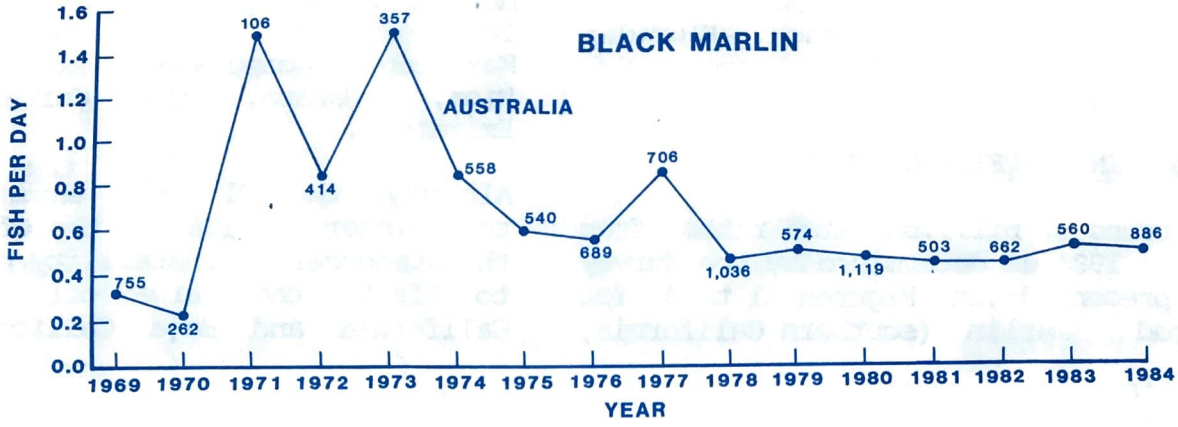


Figure 3. CPUE (#fish/angler day) for black marlin, 1969 - 1984.

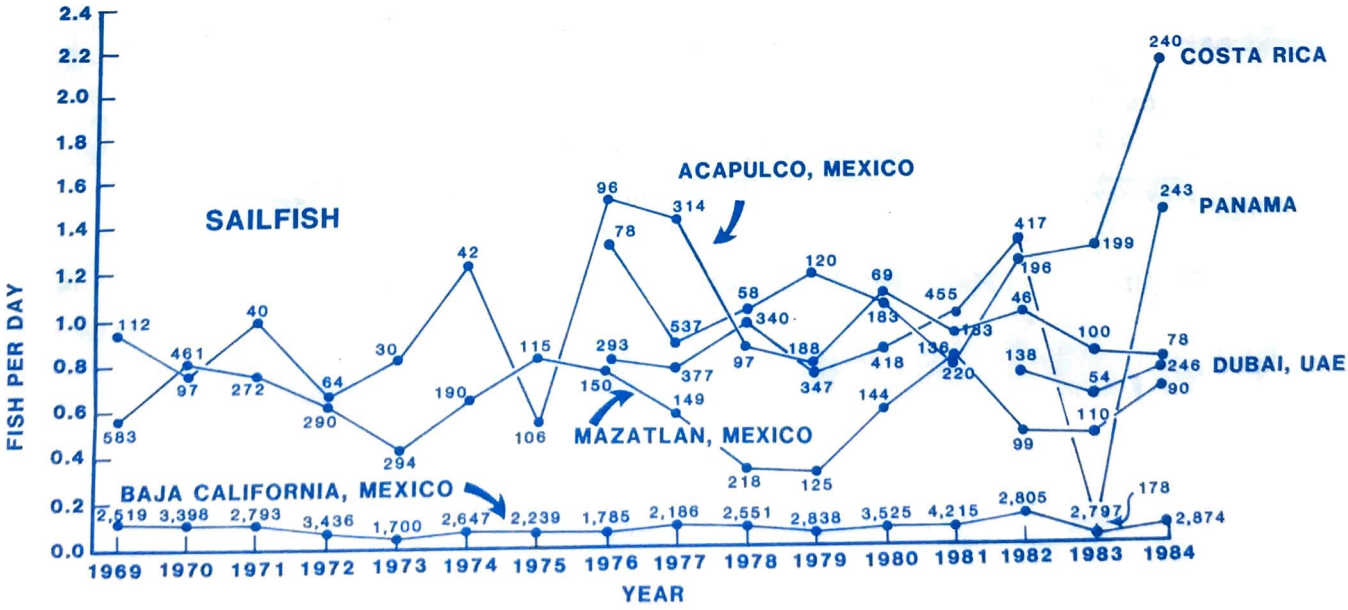


Figure 4. CPUE (#fish/angler day) for sailfish, 1969 - 1984.

very warm sea-surface temperatures were recorded off southern California in 1984. Catch rates for striped marlin were well above average off southern California. They also increased off Baja California and a slight decrease was observed for Ecuador compared to the catch rates observed in 1983. Catch rates for blue marlin about Hawaii declined slightly, but an increase was noted for Guam and Mauritius. Black marlin catch rates observed for Australia increased in 1984. Sailfish catch rates decreased off Guaymas-Kino, Puerto Vallarta, and Manzanillo, Mexico, and Costa Rica. Incrases in catch rates were noted for Mazatlan, with a substantial increase off Panama. Increased responses by billfish anglers fishing in the Indian Ocean area reported a decline in catch rates for sailfish off the United Arab Emerates, but an increase off South Africa. Increases were reported for both sailfish and striped marlin off Kenya and blue marlin off Mauritius.

COOPERATIVE MARINE GAME FISH TAGGING PROGRAM--1984

Anglers participating in the Cooperative Marine Game Fish Tagging Program tagged and released a total of 839 fish (all species) in 1985. The number of billfish tagged and released in 1985 totaled 653, which was 195 fewer than in 1984. The 217 billfish tagged off southern California in 1985 exceeded the number tagged in 1984 (188 striped marlin).

Table 2. Summary of releases reported in 1985.

Australia	
Black Marlin	4
	4
New Zealand	
Yellowfin Tuna	13
Striped Marlin	1
Mako Shark	87
Yellowtail	50
Blue Shark	5
Dolphin Fish	1
Hammerhead Shark	1
Shark	1
	159
Hawaii	
Yellowfin Tuna	7
Skipjack tuna	5
Striped Marlin	1
Blue Marlin	1
Short-billed spearfish	3
Barracuda	1
	18
Southern California	
Yellowfin Tuna	3

Table 2. (continued)

Bigeye Tuna	1
Striped Marlin	216
Short-Billed Spearfish	1
Bonito Shark	1
	222

Baja California Sur, Mexico

Sailfish	75
Striped Marlin	225
Blue Marlin	26
Marlin	5
Billfish	2
Dolphin Fish	2
	335

Mazatlán-Puerto Vallarta

Sailfish	4
	4

Manzanillo/Acapulco

Yellowfin Tuna	2
Sailfish	3
	5

Costa Rica

Sailfish	51
Striped Marlin	1
Black Marlin	6
Blue Marlin	1
Billfish	1
	60

Panama

Sailfish	4
Striped Marlin	2
Blue Marlin	4
	10

Ecuador

Yellowfin	1
Sailfish	1
Wahoo	1
Striped Marlin	8
	11

Table 2. (continued)

Others

Yellowfin	2
Sailfish	2
Striped Marlin	5
Black Sea Bass	1
Hammerhead Shark	1
	11

In 1986 a new type of billfish tag is being distributed to anglers active in tagging and releasing billfish. This new tag is similar in many respects to the "Floy Tag" used since 1971 but it features a vinyl sleeve molded on a stainless steel wire. It does not use the bulky monofilament line which holds the vinyl sleeve and the associated clamps. It should produce less of a wound in the fish upon application and we expect the new tag to give us a better rate of return as a result of fewer tags lost. The tag may be used with the currently used applicator tip. These tags are manufactured for us by Mr. Michael Hall of South Australia. Mr. Hall has made a detailed study of fish tags used throughout the world and has conducted considerable testing of tagging materials and has developed new innovations in tag design.

SOUTHERN CALIFORNIA TAGGING OF STRIPED MARLIN

In 1983 the National Coalition of Marine Conservation - Pacific region, gave its full support to the tagging program to tag and release billfish (striped marlin) off southern California. In 1985, 216 striped marlin and 1 short-billed spearfish were reported tagged in 1984, despite the fact that environmental conditions were more favorable to striped marlin in 1984 (total catch and CPUE rates were higher).

Table 3. Names of anglers and captains, reporting tagging 3 or more striped marlin in 1985 and number of releases

Ranking	Angler	#Fish
1.	Dave Denholm	25
2.	Mike Callan	11
3.	Bill Lescher	10
4.	Robbie Bailor	7
5.	Mark Wish	6
	Ken Bottram	6
6.	William Hagen	4
7.	Jim Cleland	3
	Marshall Hugo	3
	Mark Campbell	3

Ranking	Captain	#Fish
1	Joe Mike Lopez	29
2.	Mike Callan	21
3.	Dick Sieminski	10
4.	Don Smith	8
	Gene Grimes	8
5.	Ed Cleland	5
	Joe Houck	5
	Ron Dixon	5
6.	Jim Sieminski	4
7.	Tom Shaver	3
	Bill Lescher	3
	Robbie Bailor	3
	Mark Wisch	3
	William Hagen	3
	Tony Escalderon	3
	Martin Morris	3
	Matt Campbell	3
	Bob Ford	3

A total of 125 individual billfish anglers and 93 captains reported tagging the 217 billfish. Tagging a billfish is not an easy task and to the anglers and captains that have tagged billfish we would like to express our appreciation of a job well done!

TAG RECOVERIES IN 1985

Tags recovered and reported to the Southwest Fisheries Center in 1985 accounted for only 3 marlin and 3 yellowfin tuna. This is only 1/3 the number of billfish reported recovered in 1984. However, 2 of the 3 billfish returns were long-distance returns. Mike Callan tagged a striped marlin on August 31, 1984, at the "17 Fathom Spot" (about 16 mi 300° from Santa Barbara Island) and this marlin was recovered 116 days later by the Korean longliner Kwang myung No 61 at 20°17'S Latitude and 128°35'W Longitude. This location is approximately 360 nm NNE of Pitcairn Island in the south Pacific, about 3,360 miles from the point of tagging. The marlin averaged 28.9 nm per day on a projection of a straight-line distance between the tagging and recovery points. This is close to the record of 32 nm per day observed for a striped marlin tagged about the southern tip of Baja California, Mexico several years ago.

The second major billfish recovery was briefly reported in the 1984 Billfish Newletter. This was was for the world's longest distance recovery of a tagged billfish -- a black marlin tagged off Cabo San Lucas, Mexico by J. P. Carlier of Paris, France, on January 6, 1983. The marlin was recaptured on September 11, 1984, by the Japanese longliner No.10 Kinnei-maru at 31°27.7'S Latitude and 170°52.3'E Longitude which is near Norfolk Island, north of New Zealand. This recovery was not reported to us until early in 1985. The fish traveled approximately 5,763 nm (straight line) and the release time was 613 days. Average speed per day (based on straight-line distance) was 9.4 nm per day.

A second striped marlin recovered was tagged and released by Mr. Dave Denholm and Captain Joe Mike Lopez (1984 and 1985 tag award winners) on August 18, 1985, also near the "17 Fathom Spot" off southern California. This fish was recovered 32 days later by a drift gill net boat about 10 nm west of the location of tagging.

The yellowfin tuna recoveries (3) were all from small yellowfin tuna (Ahi) tagged and released by Mr. Richard Johnson of Rancho Santa Fe, California, near fish aggregating devices (FAD's) off the Kona coast of Hawaii. Mr. Johnson tagged 10 yellowfin (Ahi) and 3 were recovered, all at the same locations as tagged, up to 13 days later.

In addition to the tag recoveries reported in this Newsletter, Mr. Peter Saul of the New Zealand Ministry of Agriculture and Fisheries reports that 9 yellowtail (S. grandis) and 2 mako shark were recovered off of New Zealand in 1985. The New Zealand tagging program is now fully supported by the Ministry of Agriculture and Fisheries and great progress is being made in tagging many of the coastal species of importance to New Zealand.

BILLFISH TAGGING SUPPLIES

For the 1986 billfish season we will have billfish tags available for southern California at the following locations:

San Diego:

The Marlin Club (San Diego Bay)
Mission Bay Marlin Club (Mission Bay)

Newport/Balboa:

Balboa Angling Club

(Newport Beach)
Bisbee's (Balboa Island)

Catalina Island, Avalon, CA.

Catalina Seafood (Rose Cadman), Avalon Pier
The Tuna Club (Avalon)

Channel Islands Area:

Harbor Bait & Tackle, Ventura, CA.

For tags in the Hawaiian area and the central and western Pacific area, contact the Pacific Gamefish Foundation at Kailua Kona, Hawaii (P.O. Box 3189). The Pacific Gamefish Foundation is cooperating in the tagging of billfish in the mid-Pacific area.

INSTRUCTION FOR RECEIVING THE NEWSLETTER AND INFORMATION ON THE PACIFIC INTERNATIONAL ANGLER SURVEY FORM.

This Newsletter is sent to individuals who: 1) have recently tagged and released billfish and other oceanic species, 2) have submitted the billfish angler survey form during the past year, and/or 3) requested a copy of the survey form. United States Government Regulations require an annual revision of our mailing list for this report.

IF YOU WISH TO RECEIVE THE 1987 BILLFISH-NEWSLETTER,

Return the angler survey card with your name, current address, and zip code, if applicable, to the Southwest Fisheries Center.

If you did not fish for billfish in 1985 and wish to continue to receive this Newsletter, indicate on the Billfish Angler Survey form "no billfish fishing." Also, print your name an address and return the form. Your name will be retained on the mailing list. Those individuals who report billfish fishing in 1985 by returning the Billfish Angler Survey form will automatically remain on the mailing list.

Individuals reporting tagging and releasing fish in 1986 will be placed on the mailing list for this Newsletter for the year following tagging.

Again, thank you for your cooperation and interest in the billfish angler survey and tagging program.

Sincerely,

James L. Squire, Jr.
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