NOAA Technical Memorandum
NMFS-SEFSC-433

# LARGE PELAGIC LOGBOOK NEWSLETTER - 1998

**Jean Cramer and Heather Adams**

**U.S. DEPARTMENT OF COMMERCE**
**National Oceanic and Atmospheric Administration**
**National Marine Fisheries Service**
**Southeast Fisheries Science Center**
**75 Virginia Beach Drive**
**Miami, Florida 33149**

**January 2000**

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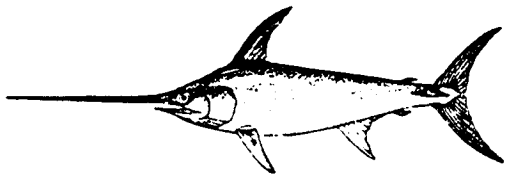
by

Jean Cramer and Heather Adams



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D. James Baker, Under Secretary For Oceans and Atmosphere

National Marine Fisheries Service
Penelope D. Dalton, Assistant Administrator for Fisheries

January 2000

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(703)605-6007
http://www.ntis.gov

This is the ninth annual Large Pelagic Logbook Newsletter. The primary purpose of this report is to summarize data and activities related to the mandatory large pelagics logbook and observer programs. This newsletter serves as a vehicle for dissemination of information to those directly involved in the fishery. In addition to updating catch, effort, CPUE, and location information, and detailing revisions to logbook reporting in 2000, this year's newsletter includes sections pertaining to swordfish, yellowfin, bigeye and albacore stock status, bycatch, mandatory dealer reporting, the longline observer program, and other related studies.

Comments and suggestions are invited; see section "WHOM TO CONTACT FOR WHAT."

## COMPARISON OF 1996 - 1998 LOGBOOK CATCH AND EFFORT DATA

Nine summary tables are included in this newsletter. The numbers of swordfish, tunas, and billfish reported caught, by area, for 1996, 1997 and 1998 (preliminary) are given for longline (Tables 1a-1c) and gillnet (Tables 2a-2b). Longline effort is reported in hooks and numbers of boats and gillnet effort is reported in sets and numbers of boats. The longline boat statistics are from logbook reports that were considered to represent all pelagic longline sets including summary records; bottom longline records were excluded. Exclusion of bottom longline records does not exclude all set targeting species other than swordfish and tuna.

Between 1997 and 1998 reported longline effort (hooks set) decreased in all areas except the MAB and NCA. The only increased reported effort was for the NCA and this may reflect a shift of effort from the SAR rather than an actual increase in overall fishing effort.

Total reported longline effort for 1998 was lower than reported for 1997. The total number of longline boats decreased in 1998 from the levels reported in 1996 and 1997.

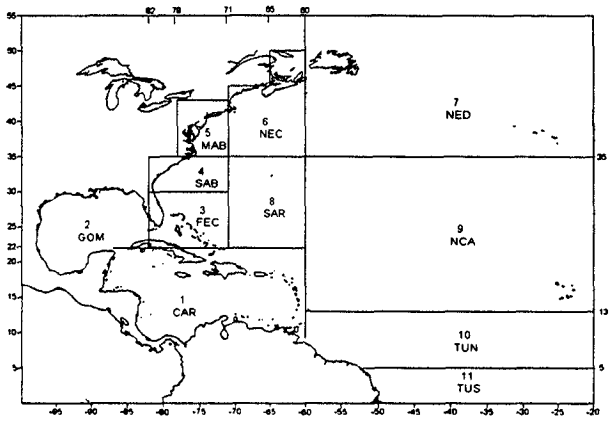



Figure 1. Map designating the eleven areas used in analysis of the swordfish logbook data.

Locations of areas are shown in Figure 1. Definitions are as follows: area 1 - Caribbean[1] (CAR), area 2 - Gulf of Mexico (GOM), area 3 - Florida East Coast[1] (FEC), area 4 - South Atlantic Bight[1] (SAB), area 5 - Mid Atlantic Bight[1] (MAB), area 6 - Northeast Coastal[1] (NEC), area 7 - Northeast Distant[1] (NED), area 8 - Sargasso [1] (SAR), area 9 - North Central Atlantic[1] (NCA), area 10 - Tuna North[1] - (TUN), and area 11 - Tuna South[1] (TUS).

The reported yellowfin tuna catch for the three-year period was approximately 65,000 (1996), 75,000 (1997), and 55,000 (1998) fish, respectively. Numbers of yellowfin tuna reported caught decreased by 27% from 1997 to 1998 (Tables 1a-1c).

In the GOM, the reported catch of yellowfin in numbers increased annually from 1990 through 1992 and decreased annually from 1992 to 1995. GOM catches of yellowfin increased annually from 1996 through 1997, but have declined slightly in 1998. In the MAB, the reported yellowfin catch in numbers generally increased until 1998 when the number caught decreased by 24%. In 1996 yellowfin catches decreased and remained at that level in 1997. Yellowfin tuna catches in 1998 decreased from 1996 and 1997 (Tables 1a-1c).

footnote[1]
These are arbitrary areas and do not constitute official geographic areas.

In 1996 there were approximately 96,000 swordfish tabulated from longline records (caught = kept + discarded). There were approximately 89,000 swordfish reported in 1997; and 91,000 reported in 1998(preliminary). Reported swordfish catch declined annually from 1995 to 1997. In 1998 swordfish catch increased slightly from 1997. The corresponding reported fishing effort for the three years was roughly 10.2, 9.5, and 7.7 (preliminary) million hooks, respectively (Tables 1a-1c). The preliminary number of reported hooks fished decreased by 19%, in 1998 compared to 1997.

Vessels operating in the CAR, GOM, SAR, TUN and TUS (Tables 1a-1c), reported decreases in annual swordfish catch by longline boats in 1998 compared to 1997. All other areas reported an increase in annual swordfish catch in 1998.

The gillnet fishery was closed from December 1996 through July 1998 in order to address a suite of fishery management issues including the reduction of marine mammal interactions. Table 2a and 2b contain the reported gillnet effort and catch for 1996 and 1998.

## REPORTED FISHING LOCATIONS IN 1996, 1997, AND 1998

The location of reported commercial pelagic fishing effort by year for 1996-1998 is shown in Figures 2-4. The general pattern for reported sets is similar across the three years along the U.S. coastline. Fishing effort increased and expanded geographically in the southern offshore areas in 1996. Overall reported effort was reduced in 1998 with the greatest reductions in the offshore areas (NED, SAR, TUN, and TUS).

## CPUE DATA

Tables 3a-3c represent 1996, 1997, and 1998 (preliminary) data, respectively, for swordfish and yellowfin tuna. These data are yearly totals, by areas as (defined in Figure 1) for: number of fish Kept; number Discarded dead and Discarded alive; Kept+Discarded; effort in HOOKS; the Number of sets; and the average of the individual catch rates, AV(C/E) (equivalent to average CPUE). This summary includes all gears that reported fishing with hooks that were not thought to be summary records. As such, this would include effort directed at species other than swordfish or tunas.

The totals reported in Tables 1a through 1c are different from the totals in Tables 3a through 3c because different criteria were used in selecting the records to be used. Tables 1a through 1c represent data from longline boats only, including summary reports filed by longline boats. Tables 3a through 3c represent all records that reported hooks except summary reports. Gears represented include, but are not limited to, longline, bottom longline, and rod and reel boats.

The data summarized here are considered to represent nominal CPUE. No attempt has been made in this summary to standardize the data for factors not related to fish abundance, but known to affect the CPUE values. Those analyses are carried out for the purpose of stock assessments, and are reported elsewhere.

The reported swordfish catch rates in 1996 for the CAR, FEC, SAB, NED and the NCA were, respectively, approximately 2.0 fish/100 hooks, 2.7 fish/100 hooks, 1.2 fish/100 hooks, 2.5 fish/100 hooks and 1.4 fish/100 hooks (Table 3a); in 1997 approximately 2.0 fish/100 hooks, 2.1 fish/100 hooks, 1.5 fish/100 hooks, 2.1 fish/100 hooks and 1.6 fish/100 hooks (Table 3b; and in 1998 (preliminary) approximately 2.0 fish/100 hooks, 2.8 fish/100 hooks, 3.2 fish/100 hooks, 3.2 fish/100 hooks and 1.9 fish/100 hooks (Table 3c). The highest reported 1998 swordfish catch rates (3.2 fish/100 hooks) were in the NED and SAB.

Average reported CPUEs for yellowfin, on an annual basis, have been consistently high and increasing in the GOM fishery since 1996. The reported catch rates in the GOM in 1996 were approximately 1.1 fish/100 hooks (Table 3a); in 1997 approximately 1.3 fish/100 hooks(Table 3b); and in 1998 approximately 1.5 fish/100 hooks (Table 3c). The highest CPUE reported for 1998 was 2.8 fish/100 hooks in the MAB.

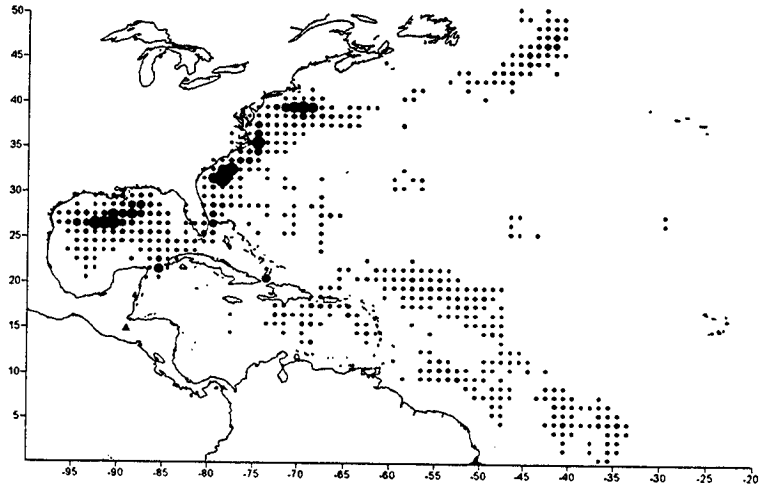


*Figure 2. Location and density of reported longline effort in 1996.*

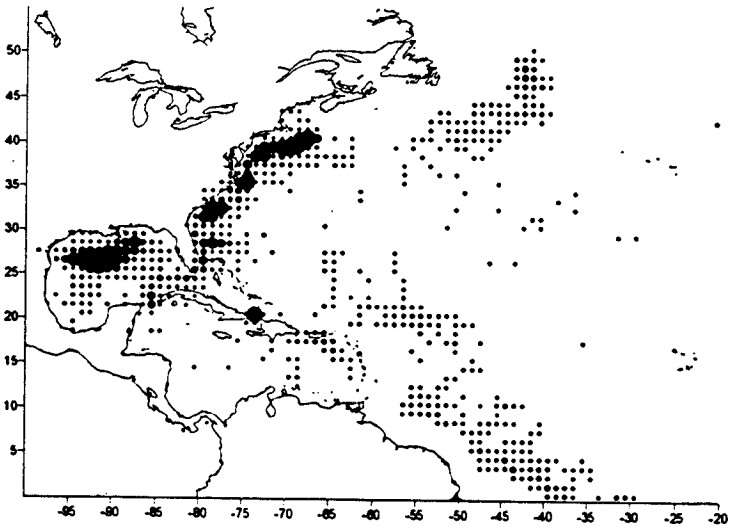


*Figure 3. Location and density of reported longline effort in 1997*

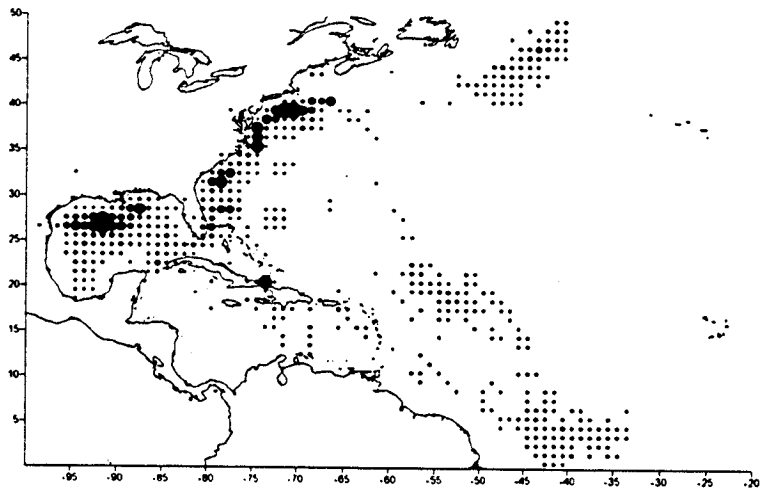


*Figure 4. Location and density of reported longline effort in 1998*

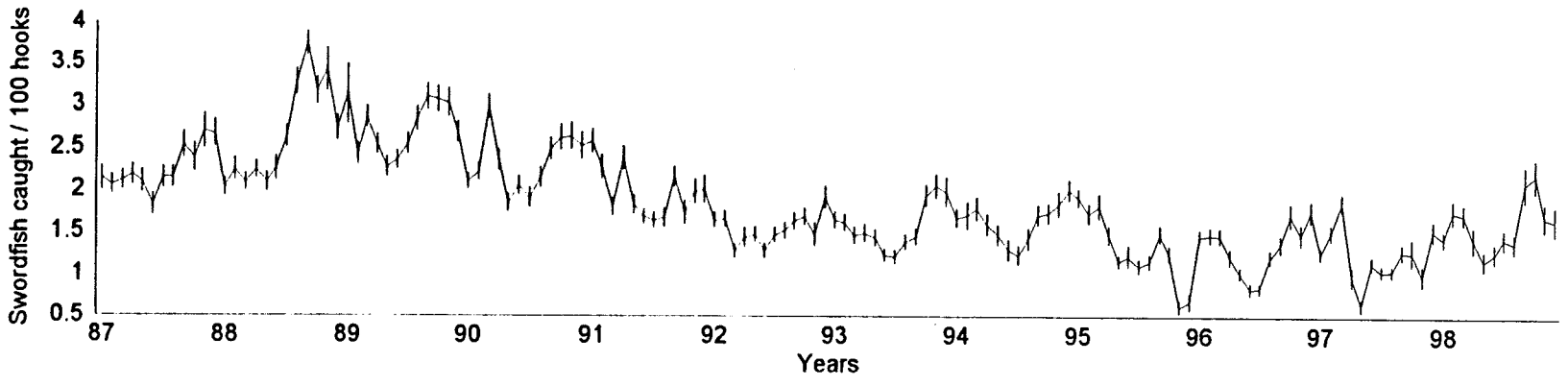



**Figure 5a. Monthly Swordfish CPUE's**
1987 -1998

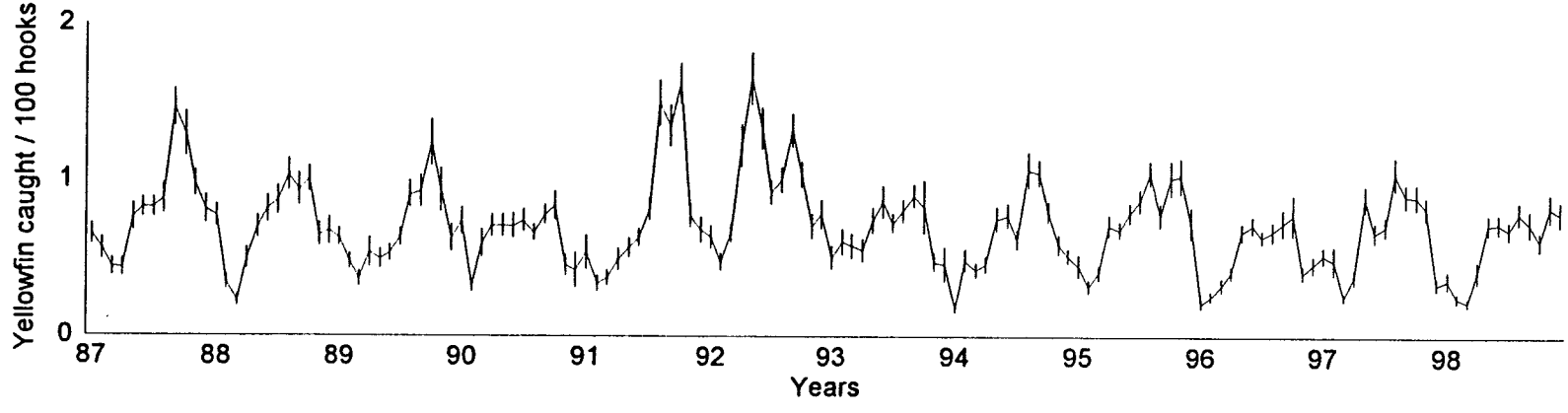



**Figure 5b. Monthly Yellowfin CPUE's**
1987 -1998

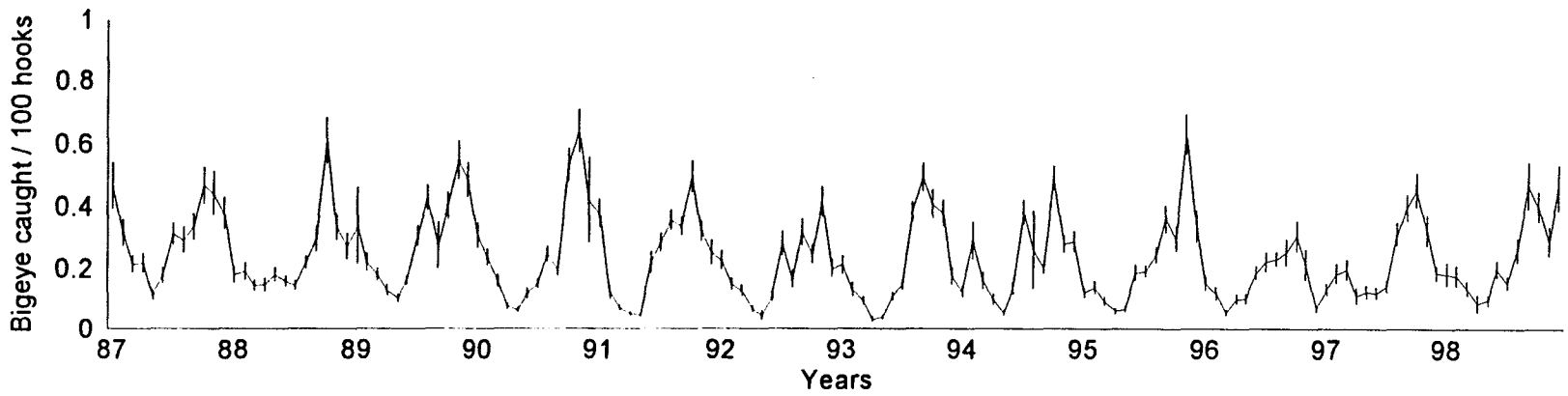



**Figure 5c. Monthly Bigeye CPUE's**
1987 -1998

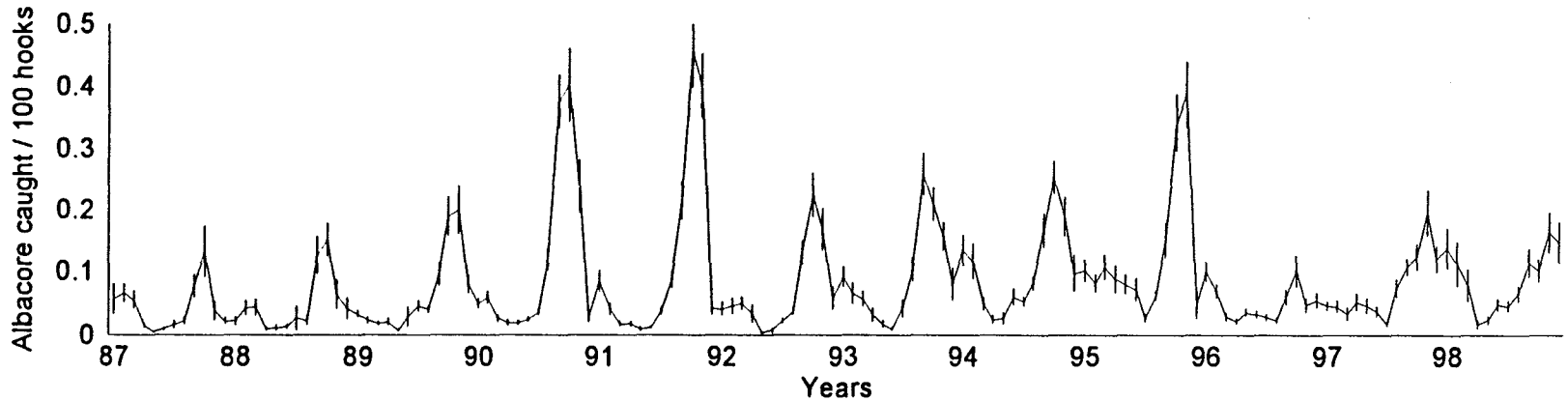



**Figure 5d. Monthly Albacore CPUE's**
1987 -1998

Monthly reported CPUEs for swordfish, yellowfin, bigeye, and albacore from 1987 to 1998 are shown in Figures 5a -5d. The error bars represent + 2 standard errors from the mean.

*SWORDFISH STOCK STATUS*

Sex and age specific (north Atlantic) and biomass standardized catch rates (north and south Atlantic) were updated and northern and southern Atlantic swordfish stocks were assessed in 1999. A summary of these assessments are shown in the Table 4.

The base case assessments for north Atlantic swordfish indicate that recent reductions in reported catch have slowed or arrested the decline in swordfish biomass. Furthermore estimated high recruitment could promote improvement in future spawning stock biomass, if these year classes are not heavily harvested. Biomass at the beginning of 1999 was estimated to be 65% (range: 51 to 105%) of the biomass needed to produce MSY, and the 1998 fishing mortality rate was estimated to be 1.34 (range: 0.84 to 2.05) times the fishing mortality at MSY. The replacement yield for the year 2000 was estimated to be about 11,700 MSY Anticipated 1999 catches are expected to be close to replacement levels given the recent fishery performance and current regulations. Recovery is likely to occur when catches are below replacement level.

The base case assessment for the South Atlantic stock assumption indicated that the biomass at the beginning of 1999 was estimated to be 110% (range: 84% to 104%) of the biomass needed to produce MSY, and the 1998 fishing mortality rate was estimated to be 0.81 (range: 0.47 to 2.54) times the fishing mortality at MSY . However, some of the sensitivity analyses were much more pessimistic than the base case. The status of the south Atlantic stock is more uncertain than the status of the north Atlantic stock due to the limitations of the indices of abundance and the absence of age and growth data.

*ALBACORE STOCK STATUS*

No new stock assessment for albacore was conducted in 1999. However, relevant catch and fishery information were updated. A summary of these updates and the 1998 assessments are shown in the Table 5.

Equilibrium yield per recruit and spawning potential ratio analysis made by the SCRS in 1998 indicated that the northern stock is not growth overfished. Equilibrium yield analyzes, made on the basis of an estimated relationship between stock size and recruitment, indicated that current fishing mortality may be about 25% higher than that which would generate MSY. ICCAT concluded that the northern stock is probably fully-exploited, but neither the possibility that it is over-exploited nor the impact of environmental variation should be dismissed.

The base case results from the 1998 assessment of south Atlantic albacore were different from the 1997 results. The main difference being that the 1998 results indicate a stock at biomass levels above those at MSY, whereas previous results indicated that the stock was below the biomass level at MSY. Since the variability associated with both estimates and the uncertainties of the assessments was large the 1988 Committee could not reach a definite conclusion on the status of this resource.

*BIGEYE STOCK STATUS*

An Atlantic bigeye stock assessment was conducted in 1999. A summary of the resource status from that assessment is shown in the Table 6.

Results of the production model analysis indicate that the estimated current biomass is likely to be below biomass at MSY. The VPA's indicated that the spawning stock biomass has rapidly and substantially declined over the past 5 years and fishing mortality rates have increased quickly since the early 1990s.

Yield-per-recruit analyses suggests that there is no substantial increase in yield by intensifying fishing effort of any sector, however, yield -per-recruit can be increased by a reduction of fishing effort in the small-fish fisheries.

Although the outlook for this stock is highly uncertain, the trends suggest that the stock will continue to go down if the current catch levels are maintained.

## *YELLOWFIN STOCK STATUS*

No new assessment was conducted for yellowfin tuna in 1999. A summary of the 1998 assessment and updated yields are shown in the Table 7.

The 1998 production model analyzes imply that although yellowfin tuna catches are silghtly lower than equilibrium MSY levels, effort may be either above or below the MSY level. VPA analyses indicate that fishing mortalities on juvenile yellowfin exhibited a pronounced increasing trend in the late 1980's and early 1990's, but estimates for recent years are uncertain. Preliminary deterministic projections from two of the VPA runs indicated that current catches are sustainable if recruitment continues at or above the average magnitude observed over the last decade. Yield-per-recruit analyses indicate that current (1997) fishing mortality may be close to the level of $F_{max}$ and that an increase in effort is likely to decrease the yield-per-recruit, while reductions in fishing mortality on fish less than 3.2 kg could result in substantial gains in yield-per-recruit and modest gains in spawning biomass -per-recruit.

In summary, yellowfin landings appear to be close to MSY level and fishing effort and fishing mortality may be in excess of the levels associated with MSY. It is important to ensure that effective effort does not increase further.

## *MANDATORY REPORTING IN THE ATLANTIC LARGE PELAGIC FISHERY*

Federal regulations require that both fishermen and dealers assist the conservation and management of large pelagic species by providing statistics on fishing activity and seafood production respectively. Fishermen are required to submit data on daily fishing activity and catch, which includes individual carcass weights for the swordfish and other large pelagic species. Dealers are required to provide summary data on the landings (purchases) by market or size category and the price or value for the respective categories. Both fishermen and dealers are required to maintain an active Federal permit to fish for or purchase swordfish.

*Fishermen Reporting.*

All fishermen that fish for and land swordfish are required to have an active permit and report the catches from every set or daily trip. In addition to a completed logbook sheet for every set, fishermen are required to submit a copy of the weigh-out or sales receipt that provide the weights for the individual swordfish and other large pelagic species that are caught on the fishing trip. If either of these requirements are not met, the vessel is not in compliance and the vessel's permit can be revoked or denied at the annual renewal.

If the vessel did not fish during a calendar month, a "no-fishing" report must be submitted.

All logbook reports and weigh-outs are to be submitted to the

Southeast Fisheries Science Center
Logbook Program
P.O. Box 491740
Key Biscayne, Florida 33149-9915

Questions or requests for clarifications can be directed to Logbook Program at the Southeast Fisheries Science Center, telephone number (305) 361-4581.

During 1998, an active permit for the large pelagic fishery was issued to 1,152 vessels. These permits were not necessarily active during the entire calendar year, nor did all of these vessels actively fish for or catch large pelagic species. If logbooks and weighouts were not submitted for the catch of the 12 months in the reporting period prior to the expiration of the permit, the application

for renewal was denied until all reporting was brought up to date.

As of July 1 , 1999 access to swordfish permits was restricted to individuals qualifying on the basis of historic catch in the fishery. As of November 29, 1999, 239 directed, 205 incidental, and 43 hand gear swordfish permits have been issued.

*Dealer Reporting.*

Permitted dealers are required to provide reports twice a month to the Science and Research Director for either the Northeast Region or the Southeast Region, depending on the dealer's geographical location. Complete and timely information from dealers is critical because these data are used to monitor the fishery quota for swordfish. Dealers are instructed to provide the U.S. Coast Guard documentation or state registration number for every vessel from which they purchased swordfish during each two week reporting period. This information is used to check the dealer data against the daily catch data submitted by fishermen. This cross reference helps the SEFSC determine that all landings are included in the quota monitoring process and it also guards against potential double counting.

Reports should be mailed to:

Science and Research Director
Southeast Fisheries Science Center
National Marine Fisheries Service
75 Virginia Beach Drive
Miami, Florida 33149
Attention: A. Bertolino

except for a dealer whose principal place of business is in an Atlantic coastal state from Maine through Virginia. The appropriate address for those dealers is:

Northeast Regional Office
National Marine Fisheries Service
1 Blackburn Dr, Gloucester, MA 01930
Attention: Greg Power

For most dealers in the Northeast Region, NMFS port agents contact and collect the dealer reports.

At sometime during calendar year 1998, a Federal dealer permit was held by 255 dealers. Of this total, 73 dealers had their primary location in the Northeast Region and the remaining 182 dealers had their primary location in the Southeast Region, which includes the Caribbean. Overall, compliance with the reporting requirements has been good in this area. However, dealers that do not cooperate with the NMFS and do not submit the required bi-monthly reports will have their application for a permit renewal denied, and NMFS Law Enforcement will be notified. It should be noted that a report is required for every two week period, even if large pelagic species were not purchased. If no purchases were made, the respective Center Director must be informed. In the Southeast Region, a form so-stating must be submitted.

## SWORDFISH LANDINGS

The Southeast Fisheries Science Center (SEFSC), Miami Laboratory, is responsible for compiling the landings of U.S caught Atlantic swordfish from mandatory reporting data. The monthly reported landings for 1990 -1998 may be found in Table 9. U.S. Atlantic swordfish landings decreased each year from 1990 to 1994, increased somewhat in 1995, then decreased again from 1996 to 1998.

Monthly cumulative annual landings of U.S. Atlantic swordfish are compared in Figure 6 for years 1990-1998. Yearly U.S. Atlantic swordfish landings from 1991 to 1998 were lower than 1990 landings. These lower levels are, in part, the result of the minimum size regulation and due to fishery closures when allowable landing levels for the directed fishery were achieved.

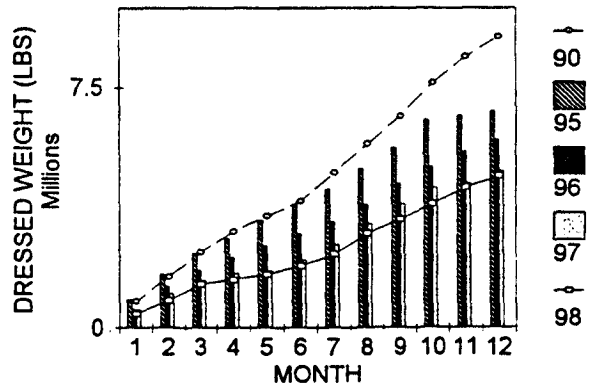



**Figure 6. SWORDFISH LANDINGS**

## SWORDFISH LANDED IN THE U.S.

| Year | 1,000 lbs. Dressed wt. | 1,000 lbs. Whole wt. |
|---|---|---|
| 1989 | 10,582 | 14,075 |
| 1990 | 9,107 | 12,112 |
| 1991 | 7,142 | 9,499 |
| 1992 | 6,383 | 8,489 |
| 1993 | 6,274 | 8,345 |
| 1994 | 5,578 | 7,419 |
| 1995 | 6,764 | 8,996 |
| 1996 | 5,889 | 7,832 |
| 1997 | 4,933 | 6,561 |
| 1998 | 4,754 | 6,323 |

## SWORDFISH < 41 LBS. DRESSED WEIGHT - NUMBER AND PERCENT LANDED BY MONTH BY AREA

The cumulative percent of fish landed less than 41 lbs dressed weight from all areas and all months fell from 38% in 1990 to 13% in 1993 and then went up to 21% in 1998 (Table 11). The within area percentage landed catch of fish less than 41 lbs decreased in most areas between 1991 and 1995, but increased since 1996 (Table 11). The highest numbers of undersize fish landed in 1998 were from the SAB region (Tables 10, 11 & 12).

## SWORDFISH < 41 LBS. DRESSED WEIGHT - PERCENT LANDED

The proportion of U.S. Atlantic swordfish landed which were smaller than 41 lbs dressed weight has decreased since 1990 (Figure 7). In 1990 the highest number of fish landed were in the 21-41 lb category. In 1991 this peak shifted to the 41-60 lb category where it has since remained.

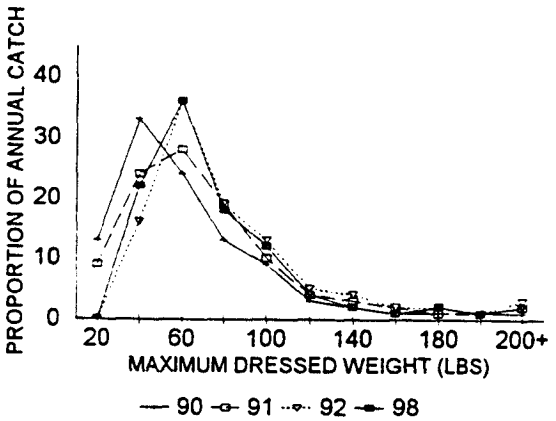



**Figure 7. U.S. CATCH AT SIZE**

## SWORDFISH SIZE FREQUENCY

The proportion of swordfish landed which were less than 41 lbs dressed weight in size frequency samples from U.S. longline vessels, decreased from 1989 through 1995, but has increased since 1996 (Figure 8a). The initial decrease resulted from the minimum size measure put in place in mid 1991. The increase since 1996 is probably the result of lowering the minimum size from 41lbs to approximately 33lbs in mid 1996. The proportion of swordfish landed which were less than 33 lbs dressed weight is shown in Figure 8b. The 1998 percentage of landed fish below 33 lbs dressed weight was equal to 0.0% in each area.

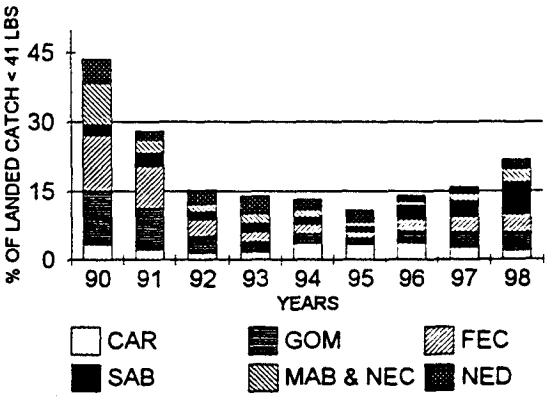



**Figure 8a. SWORDFISH SIZE FREQUENCY**

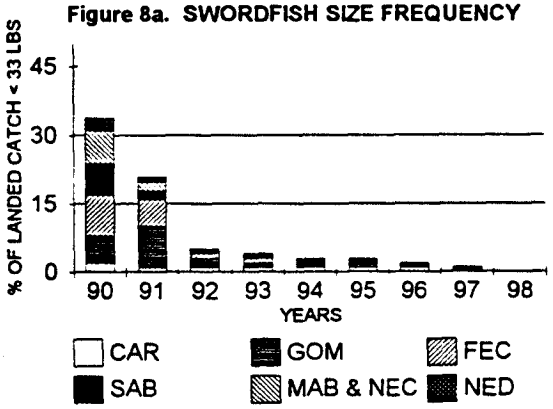



**Figure 8b. SWORDFISH SIZE FREQUENCY**

## BYCATCH ESTIMATION

The 1998 observer and 1998 logbook records were used to estimate the number of discarded dead swordfish (29,467), blue marlin (935), white marlin (1,641), and sailfish (1,350), dusky sharks (1,265), silky sharks (1,050), hammerhead sharks (565), night sharks (921), coastal sharks (552), blue sharks (5,295) and pelagic sharks (707).

## TAGGING HIGHLIGHTS

Two hundred and ninety five swordfish were tagged and released and 30 tagged swordfish were recaptured in 1998. In 1999, 199 swordfish were tagged and released and 9 tagged swordfish were recaptured. For the recaptured swordfish, the maximum interval between tagging and recapture was 6.5 years, the minimum interval was 91 days and the average interval was 3.0 years. In Figure 9 straight lines are drawn between release and recovery locations of swordfish that were recovered in 1998 or 1999 in cases where release and recovery locations were significantly different

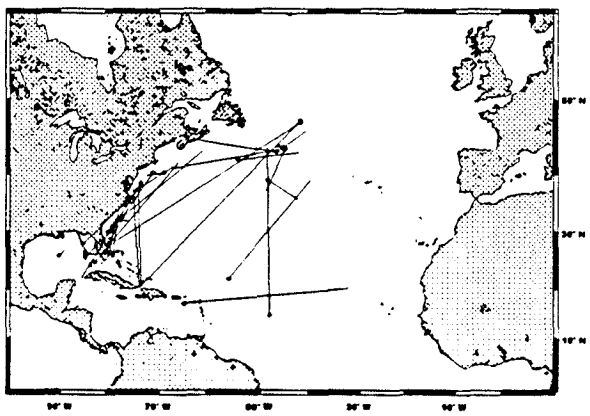


Figure 9. Long range swordfish migrations from 1997 and 1998 tag returns.

There were several noteworthy billfish recaptures during 1998. The longest reported sailfish movement (i.e. minimum straight distance traveled) was 1,120 nautical miles (NM) from a fish released off South Florida (24 degrees N, 80 degrees W) and recaptured off La Guaira, Venezuela (11 degrees N, 65 degrees W) after 981 days at large.

The longest distance traveled for a blue marlin recaptured in 1998 was 2,643 NM from a fish released off La Guaira, Venezuela (11 degrees N, 65 degrees W) and recaptured off Sierra Leone (7 degrees N, 22 degrees W). The longest distance traveled by a white marlin in 1998 was 1,558 NM from a fish released off Hatteras, North Carolina (36 degrees N, 75 degrees W) and recaptured off La Guaira, Venezuela, after 1,649 days.

For bluefin tuna, the longest movement during 1998 (4,376 NM) was from a fish released off Hatteras, North Carolina (36 degrees N, 75 degrees W) and recovered off the Ghana coast (4.3 degrees N, 3.5 degrees W) 178 days later. There were also several trans-Atlantic movements of yellowfin tuna, the longest released off Cape Hatteras (35 degrees N, 75.5 degrees W) and recaptured off the Ivory coast off west Africa (1.7 degrees N, 11.5 degrees W), a distance of about 4,924 NM, in 739 days.

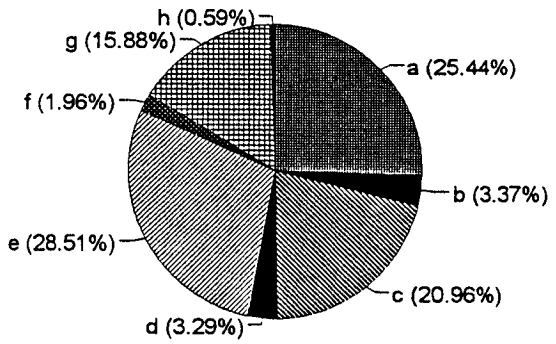
## PELAGIC OBSERVER PROGRAM

The National Marine Fisheries Service (NMFS) continues its scientific observer sampling of the U.S. large pelagic fleet, as mandated by the U.S. Swordfish Fisheries Management Plan. Scientific observers are placed aboard vessels participating in the Atlantic large pelagic fisheries by the Southeast Fisheries Science Center (SEFSC) and the Northeast Fisheries Science Center NEFSC) since 1992. Over this time period, coverage by the SEFSC Pelagic Observer Program (POP) took place, but is not limited, to vessels fishing in the Atlantic south of Virginia. The scientific observer program contracted and monitored by the NEFSC was responsible for large pelagic fleet fishing the waters of the Mid-Atlantic Bight[1] to the Grand Banks. Beginning in 1996, the SEFSC assumed the responsibility of covering all of the geographical areas of the northwest Atlantic.

A scientific observer is placed on board the vessel to record detailed information on gear characteristics, the location and time of the gear set and retrieval, environmental conditions, the condition and status of the animals caught by the gear (alive or dead, kept or discarded), as well as morphometric measurements (length and weight) and sex identification when possible (Figure 9). Observers also record the occasional interaction of marine mammals and sea turtles. The collection of biological samples (anal finrays, heads, reproductive, heart tissue, etc.) from some animals are used to support research studies to learn more about fish biology and life history behavior.

Catch data collected between May of 1992 and December of 1996 by the POP has been summarized in a newsletter (NOAA Technical

Memorandum, NMFS-SEFSC-408) which are available upon request. The POP has continued its coverage and data through mid-1999 are now computerized for analysis. Of the 78,801 fish and protected species recorded by POP observers from 1992-1998 and summarized in various species groups, (Figure 9), swordfish was the highest percent (27%) occurrence species.




1992 - 1998

Figure 10. Catch reported by scientific observers on U.S. longline vessels: swordfish (a); billfish (b); yellowfin, bigeye and bluefin tuna (c); other tunas (d); sharks and rays (e); unknown species (f); finfish (g); marine turtles, marine mammals, and birds (h)

## INSTRUCTIONS FOR USING THE PELAGIC LOGBOOKS FOR 2000

Samples of forms and directions for filling out forms are presented in Figures 11 - 16. There are 4 forms used for pelagic logbook reports in 2000: (1) a "trip summary" form, (2) a voluntary cost and earnings form, (3) a "set" form, and (4) a "no fishing " form. The trip summary form must be completed for every fishing trip when swordfish are caught and retained on board. A set form must be completed for ever set made. A trip summary, set forms and a "tally" sheet must be submitted for every completed trip.

The voluntary cost and earnings form is used to provide information on the costs associated with the fishing trip. This information is voluntary.

The "no-fishing" form may be used to report no fishing in the swordfish/large pelagic, South Atlantic snapper-grouper, Gulf of Mexico reef fish, and shark fisheries. If the vessel did not fish in more than one of these fisheries, **ONLY SUBMIT ONE "NO-FISHING" FORM.** Check the space by each of the fisheries in which the vessel did not fish. Do NOT check fisheries for which your vessel does not have an active permit.

All forms are to be mailed in the pre-addressed, postage-paid envelopes that are included. If you mail the forms in another envelope, please use the following address:

NATIONAL MARINE FISHERIES SERVICE
ATTN: LOGBOOK PROGRAM
P.O. BOX 491500
KEY BISCAYNE, FLORIDA 33149-9916

If there are question regarding completion of this form, please contact the Logbook Program at (305) 361-4581.

Monthly reporting for individuals holding a Swordfish permit will be considered complete and in compliance with the regulations only if 1) the trip summaries for each trip completed during the month, individual set records for each set made during the trip(s), and tally records for all fish sold are provided or, 2) a no fishing report is provided.

Again, as noted on the new logbook forms, **use of the current year forms will be necessary for compliance**. Further, **all old forms should be destroyed** upon receipt of the 2000 forms.

## WHOM TO CONTACT FOR WHAT

Any questions concerning Atlantic large pelagic resources swordfish projects at the Southeast Fisheries Science Center, NMFS, can be directed to Dr. Gerald Scott at (305) 361-4220 questions concerning processing and analyzing the logbook data can be directed to Dr. Jean Cramer at (305) 361-4493. Information concerning permits can be directed to (727) 570-5326. Those needing 2000 logbooks can contact the logbook program at (305) 361-4581. Questions about the observer program should be directed to Dennis Lee (305) 361-4247 or Cheryl Brown (305) 361-4275. If you have comments on this newsletter, or other comments, you can write them on your logbook reports or send them to Dr. Jean Cramer, SEFSC, NMFS, 75 Virginia Beach Drive, Miami, FL 33149.

**Figure 11. 2000 PELAGIC LOGBOOK - TRIP SUMMARY FORM (The Blue Book)**

Use **BLACK** Ink Only !

OMB 00648-0018 Exp 9/30/2000

2000 PELAGIC LOGBOOK
TRIP SUMMARY

NOAA Received Date

NOAA Schedule # 20038116

Vessel Name: _____

Vessel No: | | | | | | | | | |

Contact Phone Number (____) _____

Capt Signature: _____

Port & State Departure: _____ | |

Port & State of Landing: _____ | |

Number of Crew Members | | *(excluding captain)*

Dealer Names: _____

_____

_____

Month / Day / Year

Date of Departure: | | / | | / 2000

Date of First Set: | | / | | / 2000

Date of Last Set: | | / | | / 2000

Number of Sets | |

Number of Fishing Days | |

Date of Landing: | | / | | / 2000

First Day Offload: | | / | | / 2000

Federal Dealer Permit No. | | - | | | | | | | | |

| | - | | | | | | | | |

| | - | | | | | | | | |

## Figure 12. INSTRUCTIONS FOR PELAGIC LOGBOOK TRIP SUMMARY FORMS

*Please use a ballpoint pen and print clearly.*

Record the following on the **BLUE** form

Vessel Name

Vessel No.: U.S. Coast Guard vessel identification number or state registration number as recorded on permit application

Contact Telephone: telephone number of person responsible for the records

Capt. Signature: signature of the captain for the trip

Port & State of Departure: location of port from which the trip commenced

Port & State of Landing: location of port that vessel arrived in

Number of Crew Members: number of persons paid as crew (excluding captain)

Dealer Name(s): list of names of dealers purchasing the harvest

Date of Departure: calendar date (mm/dd/2000) on which the trip was started

Date of First Set: calendar date (mm/dd/2000) of first set made on trip

Date of Last Set: calendar date (mm/dd/2000) of last set made on trip

Number of Sets Placed: number of times the fishing gear was set during the trip

Number of Days Fished: number of days that the fishing gear was used

Date of Landing: the date the vessel arrived back at port. This date can be different from the offloading date

First Day Offload: calendar date (mm/dd/2000) that vessel began offloading fish

Federal Dealer Permit Number(s)

**NOTE: All data provided are CONFIDENTIAL and will be used to determine the impact of existing and proposed management policies on fishery participants. Consistent and accurate reporting is critical to the success of future policies in achieving the stated objective of increasing net benefits. The trip expense and payment data are not mandatory.**

Record the following on the **GREEN** sheet:

Fuel: price per gallon paid for fuel used during trip. *(If did not refuel for trip, record price paid last time purchased fuel.)*

Fuel: gallons of fuel **used** during trip. *(Note that this is not quantity purchased.)*

Bait: price per box of bait

Bait: number of boxes **used** during trip.

Bait: size of box of bait purchased in pounds

Light sticks: price per light stick

Light sticks: number of light sticks **used** during trip *(If a light stick was re-used, only count it once.)*

Ice: complete either price per pound **or** price per block of ice. *(If you purchase ice by the ton, please divide price paid per ton of ice by 2000 to get price per pound.)*

Ice: Number of pounds or blocks purchased of ice. *(If you purchase ice by the ton, please multiply tons purchased by 2000 to get quantity purchased in pounds.)*

Gear Expenses: record total cost of gear expenses on trip, including hooks replaced, line gangions, buoys, etc.

Grocery expense

Repair/Maintenance: Record all repair and maintenance expenses incurred **prior** to each trip, excluding dry dock.

Total Shared Costs: Record the sum of all costs incurred for this trip that are subtracted from gross revenues prior to calculating crew share payments. If vessel does not use crew share system, record zero (0).

Total Costs: All costs incurred for this trip excluding payments to owner, captain, crew and broker but including expenditures on items cited above and any other trip-related expenditures, e.g., docking/offloading fees (if separate from broker fee).

Owner Share: Percentage of net revenue (gross revenue less total shared costs) paid to owner.

Captain Share: Percentage of net revenue paid to captain.

Crew Share: Average share (percentage of net revenue) paid to crew, excluding captain. If vessel does not use crew share system, then calculate payments as a percentage of (estimated) gross revenue.

Broker/Selling Expense or Broker Percentage: Report either the (estimated) broker/selling fee or the percentage of gross revenue charged by the broker. *(If catch is sold to multiple brokers, please report for broker handling majority of catch or report the average charged across brokers.)*

***Remove page, attach corresponding set forms and tally sheet, and mail within 7 days after last offloading date. Retain the white sheet for your records.***

**Figure 13. 2000 PELAGIC LOGBOOK - VOLUNTARY TRIP EXPENSE & PAYMENT SUMMARY**

## TRIP EXPENSE & PAYMENT SUMMARY

| | | UNIT COST | QUANTITIES USED | |
|---|---|---|---|---|
| Fuel | Price per gallon | $ . | Gallons used | |
| Bait | Price per box | $ . | Boxes used | Box size (LBS) |
| Light Sticks | Price per stick | $ . | Light Sticks used | |
| Ice | Price per pound | $ . | Price per block $ . | Quantity Ice (lbs /blocks) |

| | TOTAL COSTS |
|---|---|
| Gear Expenses (hooks, gangions, etc.) | $ . |
| Grocery Expense | $ . |
| Repair/Maintenance (expense incurred **prior** to trip) | $ . |
| Total Shared Costs *(Includes only those costs subtracted from gross revenues to calculate payments to crew.)* | $ . |
| Total Cost *(All costs incurred for this trip excluding payments to owner, captain, crew and broker but including items above and any other trip expense.)* | $ . |

| | | Share |
|---|---|---|
| Crew Share | Owner | % |
| | Captain | % |
| | Crew (average) | % |
| Broker/Selling Expense $ | or Broker Percentage | % |

Remove page, attach corresponding set forms and tally sheet and mail in the pre-addressed envelope. Forms are to be post-marked no later than the 7th day after last offloading date.

**Figure 14. PELAGIC LOGBOOK SET FORM (The White Book)**

NOAA Form 88-191 (Revised 9/99)

OMB Number 0648-0016 Exp 9/30/2000

Use Black Ink only !

**2000 PELAGIC LOGBOOK - Set Form** 20028876

Official Vessel Number:

TARGET: ○ Swordfish ○ Yellowfin ○ Bigeye ○ Mixed Tuna ○ Sharks ○ Dolphin ○ Other (list) _____

GEAR: ○ Pelagic Longline ○ Bottom Longline ○ Handline ○ Harpoon ○ Gillnet ○ Bandit

○ Rod & Reel ○ Pair Trawl ○ Otter Trawl ○ Squid Trawl ○ Green Stick(tuna) ○ Other (list)

Set Date: / / 2000 Haulback Date: / / 2000

| Begin Set: | End Set: | Begin Haulback: | End Haulback: |
|---|---|---|---|
| : ○ am ○ pm | : ○ am ○ pm | : ○ am ○ pm | : ○ am ○ pm |

Latitude at beginning: ○ Loran-Y Deg Min North Longitude at beginning: Deg Min West Surface Water Temp: . F

**LONGLINE:**

No. of Hooks

No of Hooks between Floats

No. of lights sticks

Mainline Length (nm)

Gangion Length (fm)

Floatline Length (fm)

Use Line Thrower ○Yes ○ No

Were You Tending/Rebaiting hooks before haulback?

○Yes ○No If yes then - # of hooks rebated:

Bait Used: ○ Live ○ Dead ○ Artificial

**GILLNET:**

Mesh size (in):

Total Net Length (fm)

Fishing Depth Range (fm): to

**SWORDFISH and TUNA**

| | No. Kept | No. Thrown Back Alive | No. Thrown Back Dead | Est. Lbs. Kept |
|---|---|---|---|---|
| Swordfish | | | | |
| Bonito Tuna | | | | |
| Bluefin Tuna | | | | |
| Skipjack Tuna | | | | |
| Yellowfin Tuna | | | | |
| Blackfin Tuna | | | | |
| Albacore Tuna | | | | |
| Bigeye Tuna | | | | |
| Other Tuna | | | | |

**SHARK**

| | No. Kept | No. Thrown Back Alive | No. Thrown Back Dead | Est.Lbs Kept |
|---|---|---|---|---|
| **PELAGIC SHARK** | | | | |
| Blue | | | | |
| Mako, Longfin | | | | |
| Mako, Shortfin | | | | |
| Oceanic Whitetip | | | | |
| Porbeagle | | | | |
| Thresher, Bigeye | | | | |
| Thresher, Common | | | | |
| Other Pelagic | | | | |

**OTHER SPECIES**

| | | | | |
|---|---|---|---|---|
| White Marlin | | | | |
| Blue Marlin | | | | |
| Sailfish | | | | |
| Spearfish | | | | |
| Escolar | | | | |
| Dolphin (Mahi) | | | | |
| Wahoo | | | | |
| King Mackerel | | | | |
| Greater Amberjack | | | | |
| Banded Rudderfish | | | | |
| Other Species1 | | | | |
| Other Species2 | | | | |
| Other Species3 | | | | |

**COASTAL SHARK**

| | | | | |
|---|---|---|---|---|
| Bignose | | | | |
| Blacktip | | | | |
| Dusky | | | | |
| Hammerhead, Great | | | | |
| Hammerhead, Scalloped | | | | |
| Hammerhead, Smooth | | | | |
| Night | | | | |
| Sandbar | | | | |
| Silky | | | | |
| Spinner | | | | |
| Tiger | | | | |
| White | | | | |
| Other Coastal | | | | |

**SEA TURTLES**

| | Involved | Injured | Dead | | Involved | Injured | Dead |
|---|---|---|---|---|---|---|---|
| Leatherback | | | | Kemp's Ridley | | | |
| Loggerhead | | | | Hawksbill | | | |
| Green | | | | Other Turtles | | | |

## Figure 15. INSTRUCTIONS FOR PELAGIC LOGBOOK SET FORM

Revised (9-99)

IMPORTANT INSTRUCTIONS

Please print all information clearly.

DESTROY OLD FORMS. USE ONLY CURRENT YEAR FORMS.
→→→Please use a separate log sheet for each set. If using a gear that is not fished in sets, use one sheet for each day of fishing.
Record the, Official Vessel Number.
Designate primary Target species.
Record Gear Used.
Record Set Date (calendar day when set began) and Haulback Date.
Enter Times when using longlines or gillnets for:

- -- Begin Set and Begin Haulback (designate AM or PM)
- -- End Set and End Haulback (designate AM or PM)

At the start of each set, record the location to the nearest degree and minutes of LAT (Latitude) and LON (Longitude), and the Surface Water Temperature, in degrees Fahrenheit.
Enter the following data for each set if using Longline gear:

- -- Number of hooks set
- -- Number of hooks between floats
- -- Number of light sticks
- -- Length of Mainline (in miles)
- -- Length of Gangions (in fathoms)
- -- Length of Floatline (in fathoms)
- -- Did you use a line thrower?
- -- Were you tending or rebaiting hooks before haulback? If yes, specify how many hooks were rebaited.
- -- Bait: indicate Live, Dead or Artificial.

Enter the following data for each set if using Gillnet:

- -- Mesh Size (in inches)
- -- Total drift gillnet net length (in fathoms)
- -- Fishing Depth Range (Depth of top and of Bottom of net in fathoms)

Record Estimated total dressed weight (in pounds) of fish kept.
Record NUMBERS OF SWORDFISH, TUNAS, SHARKS AND OTHER SPECIES KEPT AND THROWN BACK.
Specify the number of fish that were thrown back Alive and the number thrown back Dead.
Record NUMBERS OF SEA TURTLES INVOLVED

- -- Total Number Involved. Write down the total number of each sea turtle species that were caught in, or interacted with, your fishing gear for the period of your report.
- -- Number Injured. Write down the number of each sea turtle species that were injured while in, or by, your fishing gear.
- -- Number Dead. Write down the number of each sea turtle species that were observed to be dead while in, or by, your fishing gear.
- -- Est. Lbs Kept. Write down estimated dressed weight in pounds of fish kept for each species.

Mail original logs to NMFS at the end of the fishing trip in pre-addressed envelopes along with the Trip Summary Form and weighout slip.
Mailing should be postmarked not later than the 7th day after the sale of the catch.

Monthly reporting for individuals holding a Swordfish permit will be considered complete and in compliance with the regulations only if 1) the trip summaries for each trip completed during the month, individual set records for each set made during the trip(s), and tally records for all fish sold are provided or 2) a no fishing report is provided.

**Figure 16. NO FISHING FORM.**

## NO FISHING REPORTING FORM

Vessel ID. NO. | | | | | | | | | Vessel Name: _____

During the entire month of | | | , year | | | | | this vessel DID NOT FISH in the fisheries checked below:

› more than on fishery may be checked
› DO NOT check any fishery if your vessel does not have a permit for it
> Use Black Ink

- ○ Pelagic (Swordfish)
- ○ South Atlantic Snapper-Grouper
- ○ Gulf of Mexico Reef Fish
- ○ Shark
- ○ King Mackerel
- ○ Spanish Mackerel

Signature _____ Phone ( ) _____ - _____

**Table 1.** TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY LONGLINE BOATS, BY AREA, AND EFFORT IN NUMBER OF HOOKS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR (a) 1996, (b) 1997 and (c)1998 (PRELIMINARY). NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED (DEAD OR ALIVE). SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

**1a. 1996**

| Area | SWD | YFT | BET | BFT | ALB | WHM | BUM | SAI | HOOKS | BOATS |
|---|---|---|---|---|---|---|---|---|---|---|
| CAR | 12911 | 814 | 865 | 0 | 295 | 171 | 463 | 44 | 648693 | 56 |
| GOM | 18316 | 34523 | 359 | 93 | 122 | 490 | 646 | 586 | 3505591 | 134 |
| FEC | 13779 | 772 | 1432 | 29 | 263 | 109 | 204 | 303 | 569251 | 73 |
| SAB | 15999 | 6200 | 1054 | 81 | 594 | 290 | 386 | 248 | 1578690 | 82 |
| MAB | 2199 | 10692 | 2434 | 201 | 520 | 315 | 53 | 20 | 1032106 | 83 |
| NEC | 1707 | 5993 | 5196 | 1472 | 987 | 459 | 262 | 10 | 1127098 | 65 |
| NED | 14553 | 363 | 3569 | 15 | 896 | 12 | 3 | 0 | 597782 | 22 |
| SAR | 796 | 88 | 397 | 16 | 401 | 33 | 6 | 2 | 88085 | 12 |
| NCA | 7056 | 604 | 625 | 0 | 905 | 162 | 137 | 21 | 496745 | 31 |
| TUN | 4503 | 4577 | 1718 | 0 | 214 | 423 | 819 | 188 | 357631 | 16 |
| TUS | 4113 | 759 | 806 | 0 | 83 | 37 | 120 | 44 | 165311 | 9 |
| TOTAL | 95932 | 65385 | 18455 | 1907 | 5280 | 2501 | 3099 | 1466 | 10166983 | 264 |

**1b. 1997**

| Area | SWD | YFT | BET | BFT | ALB | WHM | BUM | SAI | HOOKS | BOATS |
|---|---|---|---|---|---|---|---|---|---|---|
| CAR | 8340 | 341 | 557 | 2 | 221 | 154 | 295 | 40 | 439725 | 45 |
| GOM | 16015 | 38238 | 431 | 115 | 300 | 392 | 512 | 623 | 3410236 | 118 |
| FEC | 13501 | 1952 | 2923 | 44 | 746 | 100 | 171 | 192 | 784615 | 73 |
| SAB | 11620 | 2769 | 198 | 18 | 263 | 142 | 156 | 121 | 946495 | 67 |
| MAB | 4518 | 11108 | 5556 | 174 | 1939 | 274 | 38 | 3 | 1202002 | 81 |
| NEC | 5406 | 15018 | 6124 | 465 | 2666 | 419 | 54 | 3 | 1227266 | 59 |
| NED | 14591 | 85 | 3190 | 50 | 1011 | 8 | 3 | 1 | 688844 | 22 |
| SAR | 396 | 25 | 64 | 1 | 42 | 16 | 1 | 0 | 21640 | 7 |
| NCA | 3356 | 181 | 230 | 2 | 184 | 105 | 70 | 7 | 214596 | 24 |
| TUN | 1567 | 1845 | 533 | 0 | 78 | 251 | 605 | 222 | 202696 | 21 |
| TUS | 9435 | 3766 | 3283 | 0 | 204 | 589 | 398 | 550 | 390951 | 21 |
| TOTAL | 88745 | 75328 | 23089 | 871 | 7654 | 2450 | 2303 | 1762 | 9529066 | 257 |

**1c. 1998**

| Area | SWD | YFT | BET | BFT | ALB | WHM | BUM | SAI | HOOKS | BOATS |
|---|---|---|---|---|---|---|---|---|---|---|
| CAR | 5124 | 309 | 361 | 1 | 200 | 118 | 156 | 38 | 284546 | 30 |
| GOM | 11920 | 37215 | 406 | 173 | 82 | 418 | 558 | 434 | 2905484 | 99 |
| FEC | 14306 | 1000 | 3135 | 77 | 1019 | 210 | 246 | 183 | 665657 | 69 |
| SAB | 20003 | 1678 | 92 | 17 | 94 | 126 | 130 | 108 | 710125 | 53 |
| MAB | 8216 | 8442 | 6549 | 932 | 3875 | 166 | 25 | 8 | 1213910 | 63 |
| NEC | 5904 | 4644 | 5317 | 312 | 1474 | 146 | 44 | 4 | 849009 | 39 |
| NED | 15641 | 96 | 1548 | 27 | 103 | 18 | 3 | 1 | 503579 | 15 |
| SAR | 25 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3500 | 3 |
| NCA | 4495 | 150 | 278 | 3 | 332 | 112 | 46 | 3 | 246517 | 12 |
| TUN | 1117 | 722 | 784 | 0 | 97 | 138 | 58 | 30 | 104741 | 12 |
| TUS | 4410 | 956 | 656 | 0 | 31 | 42 | 29 | 26 | 174525 | 11 |
| TOTAL | 91161 | 55215 | 19126 | 1542 | 7307 | 1494 | 1295 | 835 | 7661593 | 210 |

**Table 2.** TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY GILLNET BOATS, BY AREA, AND EFFORT IN NUMBER OF SETS AND NUMBER OF BOATS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR (a) 1996, (b) 1998 (PRELIMINARY). GILLNET FISHERY WAS CLOSED IN 1997. NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED (DEAD OR ALIVE). SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

**2a. 1996**

| Area | SWD | YFT | BET | BFT | ALB | WHM | BUM | SAI | SETS | BOATS |
|---|---|---|---|---|---|---|---|---|---|---|
| MAB | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 2 |
| NEC | 877 | 64 | 10 | 35 | 20 | 0 | 0 | 0 | 135 | 9 |
| TOTAL | 880 | 64 | 11 | 35 | 20 | 0 | 0 | 0 | 146 | 11 |

**2b. 1998**

| Area | SWD | YFT | BET | BFT | ALB | WHM | BUM | SAI | SETS | BOATS |
|---|---|---|---|---|---|---|---|---|---|---|
| NEC | 648 | 58 | 0 | 4 | 24 | 11 | 6 | 0 | 106 | 10 |
| TOTAL | 648 | 58 | 0 | 4 | 24 | 11 | 6 | 0 | 106 | 10 |

**Table 3.** YEARLY TABULATIONS FOR SWORDFISH AND YELLOWFIN TUNA FOR (a) 1996, (b) 1997 AND (c) 1998 (PRELIMINARY). THE AREAS ARE DEFINED IN FIGURE 1. INFORMATION INCLUDES NUMBER OF FISH KEPT PLUS DISCARDED (K&D); PERCENTAGE KEPT (%K), PERCENTAGE DISCARDED DEAD (%D DEAD, PERCENTAGE DISCARDED ALIVE (%D LIVE); EFFORT IN HOOKS (HOOKS); NUMBER OF SETS (N); AND AVERAGE OF THE INDIVIDUAL CATCH RATES [AVG(C/E)] , EQUIVALENT TO CPUE IN # OF FISH/100 HOOKS.

| 3a. 1996 | | | SWORDFISH | | | | | YELLOWFIN | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AREA | HOOKS | N | K&D | %K | %D DEAD | %D LIVE | AVG C/E | K&D | %K | %D DEAD | %D LIVE | AVG C/E |
| CAR | 649443 | 1244 | 12924 | 80 | 10 | 9 | 2.03170 | 815 | 86 | 0 | 13 | 0.12482 |
| GOM | 3901735 | 5463 | 19671 | 67 | 18 | 13 | 0.83502 | 35517 | 97 | 1 | 1 | 1.07005 |
| FEC | 602784 | 1950 | 13845 | 55 | 31 | 13 | 2.66436 | 769 | 96 | 1 | 1 | 0.11729 |
| SAB | 1675746 | 2943 | 16459 | 67 | 18 | 13 | 1.23953 | 6185 | 95 | 1 | 3 | 0.43581 |
| MAB | 1084412 | 1711 | 2138 | 76 | 10 | 13 | 0.21907 | 10740 | 96 | 1 | 2 | 2.57561 |
| NEC | 1144069 | 1406 | 1742 | 80 | 9 | 10 | 0.16675 | 6034 | 97 | 0 | 1 | 0.54020 |
| NED | 598982 | 710 | 14520 | 87 | 7 | 5 | 2.46355 | 363 | 96 | 0 | 2 | 0.06776 |
| SAR | 88085 | 144 | 796 | 87 | 6 | 6 | 1.02768 | 88 | 97 | 0 | 2 | 0.10624 |
| NCA | 496172 | 678 | 7085 | 93 | 2 | 3 | 1.41854 | 346 | 97 | 0 | 2 | 0.13696 |
| TUN | 362431 | 495 | 4519 | 87 | 5 | 6 | 1.18782 | 4762 | 96 | 0 | 2 | 1.34756 |
| TUS | 165311 | 192 | 4113 | 95 | 2 | 2 | 2.53808 | 759 | 91 | 0 | 7 | 0.45508 |
| TOTAL | 10769170 | 16936 | 97812 | 75 | 14 | 9 | 1.20903 | 66378 | 96 | 1 | 2 | 0.80239 |

| 3b. 1997 | | | SWORDFISH | | | | | YELLOWFIN | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AREA | HOOKS | N | K&D | %K | %D DEAD | %D LIVE | AVG C/E | K&D | %K | %D DEAD | %D LIVE | AVG C/E |
| CAR | 443025 | 898 | 8452 | 85 | 7 | 7 | 1.98184 | 348 | 88 | 3 | 8 | 0.07600 |
| GOM | 3771147 | 5237 | 17002 | 68 | 17 | 13 | 0.68934 | 40461 | 98 | 1 | 0 | 1.32546 |
| FEC | 799814 | 2376 | 13502 | 66 | 19 | 13 | 2.13516 | 1925 | 95 | 2 | 1 | 0.21750 |
| SAB | 1000090 | 1784 | 11596 | 72 | 16 | 10 | 1.46183 | 2762 | 96 | 0 | 3 | 0.27577 |
| MAB | 1255396 | 1940 | 4508 | 55 | 23 | 20 | 0.41662 | 11086 | 97 | 2 | 0 | 1.69940 |
| NEC | 1228001 | 1511 | 5386 | 69 | 15 | 14 | 0.46587 | 14924 | 98 | 1 | 0 | 1.24830 |
| NED | 688844 | 762 | 14529 | 88 | 7 | 4 | 2.14153 | 85 | 88 | 9 | 2 | 0.01222 |
| SAR | 23640 | 33 | 396 | 91 | 3 | 4 | 1.70462 | 25 | 100 | 0 | 0 | 0.09634 |
| NCA | 216506 | 279 | 3367 | 94 | 2 | 3 | 1.56225 | 181 | 100 | 0 | 0 | 0.07574 |
| TUN | 202696 | 265 | 1566 | 85 | 7 | 7 | 0.79702 | 1836 | 91 | 7 | 0 | 0.90090 |
| TUS | 390951 | 474 | 9367 | 91 | 4 | 3 | 2.44793 | 3760 | 98 | 0 | 0 | 0.97783 |
| TOTAL | 10020110 | 15559 | 89671 | 76 | 13 | 10 | 1.16193 | 77393 | 97 | 1 | 0 | 0.89577 |

| 3c. 1998 | | | SWORDFISH | | | | | YELLOWFIN | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AREA | HOOKS | N | K&D | %K | %D DEAD | %D LIVE | AVG C/E | K&D | %K | %D DEAD | %D LIVE | AVG C/E |
| CAR | 284046 | 517 | 5114 | 81 | 11 | 7 | 1.90781 | 309 | 91 | 2 | 5 | 0.10083 |
| GOM | 2798022 | 3766 | 11306 | 74 | 13 | 11 | 0.57830 | 32386 | 97 | 1 | 1 | 1.48701 |
| FEC | 651258 | 1838 | 13954 | 65 | 19 | 14 | 2.84567 | 996 | 93 | 0 | 5 | 0.12445 |
| SAB | 740463 | 1422 | 20008 | 71 | 15 | 12 | 3.22997 | 1678 | 92 | 1 | 6 | 0.20269 |
| MAB | 1217671 | 1758 | 7894 | 62 | 17 | 19 | 0.67339 | 8558 | 94 | 1 | 3 | 2.80343 |
| NEC | 849009 | 1018 | 5877 | 68 | 16 | 14 | 0.68119 | 4609 | 97 | 0 | 1 | 0.54339 |
| NED | 503579 | 618 | 15621 | 84 | 7 | 7 | 3.20042 | 96 | 96 | 0 | 3 | 0.01872 |
| SAR | 3500 | 4 | 25 | 100 | 0 | 0 | 0.87500 | 3 | 100 | 0 | 0 | 0.10000 |
| NCA | 241017 | 316 | 4381 | 93 | 3 | 3 | 1.90676 | 137 | 97 | 0 | 1 | 0.06404 |
| TUN | 104741 | 126 | 1117 | 79 | 11 | 9 | 1.09164 | 722 | 97 | 1 | 1 | 0.69460 |
| TUS | 174525 | 221 | 4410 | 91 | 4 | 3 | 2.60617 | 956 | 96 | 0 | 3 | 0.53786 |
| TOTAL | 7567831 | 11604 | 89707 | 75 | 13 | 11 | 1.56517 | 50450 | 96 | 1 | 2 | 1.02459 |

**Table 4.** ATLANTIC SWORDFISH RESOURCE STATUS SUMMARY

| | North Atlantic | South Atlantic |
|---|---|---|
| Maximum Sustainable Yield[1] | 13,370(7,625-15,900MT)[4] | 13,650 MT (5,028-19,580MT) |
| Current (1998) Yield | 12,175 MT | 13,486 MT |
| Current (2000) Replacement Yield[2] | 11,720 MT (6,456-15,040 MT) | 14,800 MT (5,328-16,240 MT) |
| Relative Biomass($B_{1999}/B_{msy}$)[1] | 0.65 (0.51-1.05 MT) | 1.10 (0.84-1.40) |
| Relative Fishing Mortality: | | |
| $F_{1998}/F_{MSY}$[3] | 1.34 (0.84-2.05) | 0.81 (0.47-2.54) |
| $F_{1998}/F_{max}$[3] | 1.60 (1.52-1.68) | not estimated[5] |
| $F_{1998}/F_{0.1}$[3] | 3.52 (3.44-3.70) | not estimated[5] |
| Management Measures in Effect | 125/119 cm LJFL minimum size; Country-specific quotas | 125/119 cm LJFL minimum size; Limit catch to 1993 or 1994 levels |

[1] Base case production model results based on catch data 1950-1998
[2] For next fishing year
[3] Base case sex-specific SPA results based on catch data 1978-1998; Statistics computed based on females only
[4] 80% confidence intervals are shown
[5] Production model results do not provide basis for these estimates

**Table 5.** ATLANTIC AND MEDITERRANEAN ALBACORE RESOURCE STATUS SUMMARY

| | North Atlantic | South Atlantic | Mediterranean |
|---|---|---|---|
| Maximum Sustainable Yield[1] | 32,000(30,600-33,400) | 28,400 (15,800-51,100) | - |
| Current (1998) Yield | 25,697 | 30,046 | 2,520 |
| Current (1998) Replacement Yield[1] | - | 28,200 (17,200-46,300) | Never Calculated |
| Relative Biomass | | | |
| $B_{1997}/B_{MSY}$ | 0.47 (0.34-0.63) | 1.28 (0.37-4.3) | Never Calculated |
| $R_{1990-94-93}/R_{75-80}$ | 0.72 | 0.98 | Never Calculated |
| Relative Fishing Mortality[1] | | | |
| $F_{1997}/F_{MSY}$ | 1.39 (uncertain) | 0.75 (uncertain) | Never Calculated |
| $F_{1997}/F_{max}$ | 0.91 | 0.62 | Never Calculated |
| $F_{1997}/F_{0.1}$ | 1.60 | 1.80 | Never Calculated |
| Management Measures in Effect | Limit number of vessels to average number 1993-1995 | Limit catches to 28,200 MT for 1999 | None |

[1] Estimated by the Committee in 1998.

**Table 6.** BIGEYE TUNA RESOURCE STATUS SUMMARY

| | |
|---|---|
| Maximum Sustainable Yield (likely range) | 79,000-94,000 MT* |
| Current (1998) Yield | 94,800 MT |
| Current (1998) Replacement Yield** | 72,000-85,000 MT*** |
| Relative Biomass($B_{1998}/B_{msy}$) ** | 0.57 - 0.63*** |
| Relative Fishing Mortality:$F_{1998}/F_{MSY}$** | 1.50-1.82*** |
| $F_{0.1}$*** | 0.22 |
| $F_{max}$*** | 0.35 |
| Management Measures in Effect | - 3.2 kg minimum size<br>- 25% of FADs fishing vessels and 5% others to be covered with observers<br>-Provide a list of vessels (>80 GRT) fishing Atlantic bigeye.<br>-Limit on number (associated with GRT) of Atlantic BET fishing vessels (>24 m LOA) to average number in 1991-1999. Not applicable to countries catching less than 2,000 MT average over recent five years.<br>-Provide a list of vessels (> 24 m LOA) fishing Atlantic BET by August 31.<br>-Limit number of Chinese Taipei BET fishing vessels to 125.<br>-Catch limit (16,500 MT) for Chinese Taipei.<br>-Moratorium on FAD fishing, Nov. 1999 to Jan 2000 in eastern tropical area. |

* This range is representative of MSY ranges predicted by ASPIC and PRODFIT models.
** ASPIC estimate
*** These area ranges of point estimates obtained and no confidence limits are given.
**** Yield-per-recruit estimate based on the 1998 selectivity pattern

**Table 7.** YELLOWFIN TUNA RESOURCE STATUS SUMMARY

| | Results of the 1998 Assessment |
|---|---|
| Maximum Sustainable Yield (MSY)[1,3] | 147.5-155.8 |
| Current (1998) Yield | |
| Current (1999) Replacement Yield | 147.4 |
| Relative Biomass($B_{1997}/B_{msy}$)[2,3] | Unknown |
| Relative Fishing Mortality ($F_{1997}/F_{MSY}$)[3] | 92-135% |
| Management Measures in Effect | 3.2 kg minimum size<br>Effective effort not to exceed 1992 level |

[1] 1475-155.8 for the PRODFIT model and 151.7 for the ASPIC model.
[2] Result from ASPIC model
[3] Result from 1998 SCRS

**Table 8.** NUMBERS OF ACTIVE VESSELS

| YEAR | FISHED | CAUGHT SWORDFISH | CAUGHT SWORDFISH IN 5 MONTHS | HOOKS REPORTED |
|---|---|---|---|---|
| 1987 | 297 | 273 | 180 | 6,557,776 |
| 1988 | 387 | 337 | 210 | 7,010,008 |
| 1989 | 455 | 415 | 250 | 7,929,927 |
| 1990 | 416 | 362 | 209 | 7,495,419 |
| 1991 | 333 | 303 | 175 | 7,746,837 |
| 1992 | 337 | 302 | 183 | 9,056,908 |
| 1993 | 434 | 306 | 175 | 9,721,036 |
| 1994 | 501 | 306 | 176 | 11,270,632 |
| 1995 | 489 | 314 | 198 | 10,976,048 |
| 1996 | 367 | 276 | 189 | 10,213,223 |
| 1997 | 350 | 264 | 167 | 9,649,315 |
| 1998 | 286 | 230 | 132 | 7,825,138 |

**Table 9.** MONTHLY SWORDFISH LANDINGS AS REPORTED FROM TALLY SHEETS AND DEALER REPORTS IN LBS DRESSED WEIGHT FROM 1990 TO 1998.

| | MONTH | | | | | |
|---|---|---|---|---|---|---|
| YEAR | JAN | FEB | MAR | APR | MAY | JUN |
| 1990 | 839,178 | 794,926 | 760,177 | 631,254 | 493,183 | 449,220 |
| 1991 | 613,177 | 619,188 | 554,422 | 465,789 | 416,747 | 432,630 |
| 1992 | 514,101 | 575,942 | 520,299 | 374,432 | 358,252 | 317,612 |
| 1993 | 561,698 | 648,585 | 470,918 | 341,690 | 365,752 | 337,134 |
| 1994 | 484,972 | 472,599 | 458,475 | 327,608 | 299,262 | 383,626 |
| 1995 | 889,512 | 811,460 | 630,410 | 488,293 | 554,793 | 467,913 |
| 1996 | 596,262 | 738,304 | 509,953 | 388,765 | 363,694 | 351,284 |
| 1997 | 578,730 | 502,856 | 435,735 | 213,070 | 72,897 | 325,980 |
| 1998 | 445,171 | 417,488 | 531,255 | 134,234 | 157,908 | 266,512 |

| | MONTH | | | | | | ANNUAL |
|---|---|---|---|---|---|---|---|
| | JUL | AUG | SEPT | OCT | NOV | DEC | TOTAL |
| 1990 | 895,303 | 888,258 | 851,158 | 1,053,476 | 806,843 | 644,159 | 9,107,135 |
| 1991 | 709,718 | 773,515 | 816,558 | 766,909 | 527,175 | 446,311 | 7,142,139 |
| 1992 | 561,906 | 731,830 | 727,037 | 891,336 | 423,457 | 387,010 | 6,383,214 |
| 1993 | 582,835 | 585,084 | 647,994 | 755,021 | 589,865 | 387,627 | 6,274,203 |
| 1994 | 290,811 | 539,202 | 560,993 | 672,465 | 592,585 | 495,542 | 5,578,140 |
| 1995 | 493,062 | 651,421 | 654,380 | 850,667 | 145,897 | 126,307 | 6,764,115 |
| 1996 | 370,895 | 568,722 | 635,336 | 525,918 | 455,680 | 384,352 | 5,889,165 |
| 1997 | 496,323 | 649,695 | 630,832 | 499,048 | 125,042 | 403,040 | 4,933,248 |
| 1998 | 349,726 | 661,549 | 440,544 | 495,460 | 488,716 | 365,696 | 4,754,259 |

**Table 10.** PERCENTAGE OF ANNUAL U.S. SWORDFISH LANDED CATCH BY AREAS (TOTAL ANNUAL CATCH OF SWORDFISH IN AREA/ TOTAL ANNUAL CATCH OF SWORDFISH IN ALL AREAS).

| YEAR | CAR[1] | GOM | FEC | SAB | MAB | NEC | NED |
|---|---|---|---|---|---|---|---|
| 1989 | 20 | 13 | 21 | 6 | 7 | 8 | 24 |
| 1990 | 15 | 11 | 22 | 4 | 12 | 11 | 25 |
| 1991 | 15 | 19 | 23 | 4 | 10 | 4 | 24 |
| 1992 | 14 | 15 | 18 | 8 | 6 | 8 | 31 |
| 1993 | 18 | 14 | 15 | 10 | 7 | 7 | 30 |
| 1994 | 28 | 10 | 14 | 10 | 10 | 4 | 25 |
| 1995 | 34 | 17 | 10 | 8 | 5 | 5 | 21 |
| 1996 | 31 | 21 | 11 | 15 | 2 | 3 | 16 |
| 1997 | 30 | 19 | 13 | 11 | 4 | 5 | 18 |
| 1998 | 18 | 14 | 14 | 20 | 7 | 7 | 19 |

1. CAR includes SAR, NCA, TUN, and TU'S

**Table 11.** PERCENTAGE OF ANNUAL US SWORDFISH LANDED CATCH < 41 LBS BY AREAS (ANNUAL OF CATCH OF SWORDFISH < 41 LBS IN AREA / TOTAL ANNUAL CATCH OF SWORDFISH IN ALL AREAS).

| YEAR | CAR[1] | GOM | FEC | SAB | MAB | NEC | NED | SUM |
|---|---|---|---|---|---|---|---|---|
| 1989 | 5 | 6 | 11 | 3 | 3 | 2 | 7 | 37 |
| 1990 | 3 | 7 | 12 | 2 | 6 | 3 | 5 | 38 |
| 1991 | 2 | 10 | 9 | 3 | 2 | 0 | 2 | 28 |
| 1992 | 1 | 4 | 4 | 2 | 1 | 1 | 3 | 16 |
| 1993 | 2 | 3 | 2 | 1 | 1 | 1 | 3 | 13 |
| 1994 | 4 | 2 | 2 | 2 | 1 | 0 | 2 | 13 |
| 1995 | 3 | 3 | 1 | 1 | 0 | 1 | 3 | 12 |
| 1996 | 4 | 4 | 3 | 3 | 0 | 0 | 2 | 16 |
| 1997 | 3 | 4 | 3 | 3 | 1 | 1 | 1 | 16 |
| 1998 | 2 | 3 | 4 | 7 | 2 | 2 | 2 | 21 |

1. CAR includes SAR, NCA, T3UN, and TUS

**Table 12.** PERCENTAGE OF SWORDFISH LANDED CATCH < 41 LBS WITHIN AREAS (ANNUAL CATCH OF SWORDFISH < 41 LBS IN AREA / ANNUAL CATCH OF SWORDFISH IN AREA).

| YEAR | CAR[1] | GOM | FEC | SAB | MAB | NEC | NED |
|---|---|---|---|---|---|---|---|
| 1989 | 27 | 43 | 49 | 41 | 51 | 24 | 29 |
| 1990 | 22 | 60 | 54 | 60 | 52 | 31 | 21 |
| 1991 | 15 | 54 | 39 | 56 | 24 | 10 | 8 |
| 1992 | 10 | 26 | 21 | 23 | 11 | 11 | 11 |
| 1993 | 9 | 20 | 15 | 16 | 14 | 8 | 12 |
| 1994 | 13 | 21 | 15 | 16 | 13 | 11 | 10 |
| 1995 | 10 | 19 | 13 | 15 | 10 | 11 | 13 |
| 1996 | 12 | 21 | 24 | 21 | 19 | 11 | 9 |
| 1997 | 9 | 23 | 26 | 30 | 22 | 13 | 8 |
| 1998 | 8 | 21 | 29 | 35 | 25 | 22 | 13 |

1. CAR includes SAR, NCA, TUN, and TUS