

An Overview of U.S. Management of Large Pelagic Resources in the Atlantic, Gulf of Mexico and Caribbean

CRAIG R. O'CONNOR
Acting Regional Director
National Marine Fisheries Service,
Southeast Region
9450 Koger Boulevard
St. Petersburg, Florida 33702

INTRODUCTION

The United States' management responsibilities for large pelagic resources are carried out under the Magnuson Fishery Conservation and Management Act (swordfish and billfishes) and the Atlantic Tunas Convention Act (tunas) pursuant to recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT). The following is a brief overview of the current U.S. management strategies and supporting activities regarding these species.

SWORDFISH

The Atlantic swordfish fishery within the U.S. Exclusive Economic Zone (EEZ) is managed in accordance with the Fishery Management Plan for Atlantic Swordfish (FMP) that was prepared by the South Atlantic Fishery Management Council in cooperation with the New England, Mid-Atlantic, Gulf of Mexico and Caribbean Fishery Management Councils. This FMP was partially approved by the Secretary of Commerce and was implemented accordingly in September, 1985. The principal problem in the fishery is "growth overfishing" associated with the increasing harvest of small swordfish, *i.e.*, less than 50 pounds dressed weight. The major management measures in the approved FMP are:

1. A provision for variable season closures designed to reduce the harvest of small fish.
2. Permit requirements.
3. A voluntary observer program.
4. Mandatory reporting via logbooks.

In addition, it is anticipated that the Councils recent proposal for mandatory dealer reporting will be implemented in early 1988. To date the variable seasonal closures proposed by the South Atlantic Council have not been implemented because of anticipated adverse impacts on other U.S. fishermen.

Without implementation of the variable season closure, the FMP serves primarily monitoring and data collection functions. However, the plan has significantly improved the available fisheries statistics. Logbooks implemented in October, 1986 provide detailed information on catch, effort, and area fished.

A limited voluntary longline observer program in the Gulf and Caribbean supplies additional data regarding incidental catches, biological samples for age and sex determination, and opportunities for tagging swordfish and billfishes. The proposed mandatory dealer reporting will provide individual carcass weights of all swordfish landed and, thus, accurate size composition as well as total landings.

Over the last few years there have been a number of notable changes in the swordfish fishery including: a steady increase in the number of permitted vessels (*i.e.*, 451 in 1985 to 604 as of November, 1987); a general trend toward increased U.S. fishing effort beyond the EEZ including pronounced shifts to the Caribbean and Grand Banks areas; and an increase in the number of vessels targeting a combination of swordfish and tuna particularly in the Gulf of Mexico and Mid-Atlantic areas. These trends in landings are reflected in Table 1. Landings from the Caribbean have increased from 25.4 metric tons in 1984 to more than 1150 metric tons in 1986. The influx of U.S. swordfish vessels into the Caribbean has generated substantial concern about the harvest of swordfish and other incidental species and the impact on local fisheries and markets.

Table 1. Annual U.S. swordfish landings in metric tons live weight for five geographical regions in the North Atlantic. The regional percentage of annual total landings is listed.

Area	78	79	80	81	82	83	84	85	86
Caribbean	0	0	0	0	0	0	25.4	394.7	1152.6
Percent(%)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.6)	(8.6)	(23.6)
Gulf of Mexico	25.6	252.5	861.5	588.5	627.9	367	367.2	575	422.3
Percent(%)	(0.7)	(6.0)	(15.3)	(13.0)	(12.4)	(7.6)	(8.1)	(12.5)	(8.7)
Southeast U.S.	527.2	1817.9	2324.9	2021.1	2220.3	2071.2	1738.6	1500.5	902.6
Percent(%)	(14.3)	(39.4)	(41.3)	(44.6)	(43.7)	(43.1)	(38.3)	(32.5)	(18.5)
Northeast U.S.	3063.6	1720.8	1913.6	1464.3	1604.3	1670.7	1460.6	889.2	1012.9
Percent(%)	(83.2)	(37.3)	(34.0)	(32.3)	(31.5)	(34.8)	(32.2)	(19.3)	(20.7)
Grand Banks	67.5	826.9	524	454.7	633.8	691.9	946.2	1258.3	1393.3
Percent(%)	(2.0)	(17.9)	(9.3)	(10.0)	(12.5)	(14.4)	(20.9)	(27.3)	(28.5)
TOTAL	3684	4618	5624	4529	5086	4801	4538	4618	4884

Source: Hoey and Bertolon (1987)

As Table 1 indicates, total U.S. landings have been relatively stable in recent years; however, there is a continuing trend of decreasing average size and increasing harvest of swordfish less than 50 pounds dressed weight. This trend represents a significant loss of potential yield from the fishery and is a major concern in the fishery.

The South Atlantic Council will initiate development of an amendment to the swordfish FMP upon receipt of an updated stock assessment from the National Marine Fisheries in early 1988. The amendment will focus on alternative strategies for resolving the increasing harvest of small swordfish.

TUNAS

Tunas, being defined as highly migratory species, are excluded from management under the Magnuson Act. Rather, they are regulated under the Atlantic Tunas Convention Act of 1975 (Act) which authorizes the Secretary of Commerce to implement the recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT). Although ICCAT also addresses swordfish and billfishes, no regulations have been proposed to date for those species.

The heavily exploited Atlantic bluefin tuna, *Thunnus thynnus*, has been the focus of most regulations implemented under the Act to date. Total catches (all countries combined) from the west Atlantic averaged approximately 6100 metric tons (mt), from 1976 to 1981. In 1983, allowable catches were severely restricted to prevent further overfishing of the resource. Total west Atlantic catches were limited to 1160 mt, and since 1984, total catches have been capped at 2,660 mt. Directed fishing on the spawning stock in the Gulf of Mexico has been prohibited since 1982. Since 1984, the total annual U.S. quota has been restricted to 1,387 mt (2,539 st) which is subdivided among various categories of users. Additional regulations pertaining to Atlantic bluefin include: vessel permits, dealer permits, specific catch limits, reporting requirements, and requirements for attachment of numbered tags to all medium and giant bluefin. Despite continued restrictive quotas, the west Atlantic stock of bluefin has not exhibited significant rebuilding, and the spawning biomass continues to decline.

The only regulations under the Act currently applicable to yellowfin tuna, *Thunnus albacares*, and bigeye tuna, *Thunnus obesus*, are a minimum size limit of 3.2 kg (7 lbs) with 3% by weight by-catch allowance and reporting requirements. U.S. fishing vessels operating primarily within the EEZ have recently increased effort relative to both species. Effort directed at bigeye has increased substantially in the Mid-Atlantic area and a significant longline fishery for yellowfin tuna has developed in the Gulf of Mexico.

The rapid development of the yellowfin fishery in the Gulf of Mexico has been described in a summary report by Fable (1986). Prior to 1984, most yellowfin landings in the Gulf of Mexico resulted from by-catch in the

swordfish fishery. However, in the last four years landings from the directed longline fishery for yellowfin have increased dramatically (Table 2). The estimated number of longline vessels in the directed, Gulf yellowfin fishery has increased steadily as follows: 12 (1984), 50 (1985), 75 (1986 and approximately 150 (1987). The average boat is 54 feet long with a capacity to set 25 miles of gear and 500 hooks per day. In 1986, the average soak time was 16 hours, and the average trip involved 4.9 sets.

Table 2. Yellowfin Tuna Landings, Gulf of Mexico. (in thousands of pounds)

Year	FI West Coast	AI	Ms	La	Tx	Total
1981	14.0	0.7	0.0	0.0	12.3	27.0
1982	50.1	0.2	0.0	0.0	6.8	57.1
1983	148.0	0.0	0.0	0.0	5.4	153.4
1984	757.2	2.3	0.0	0.0	9.3	768.8
1985	2,880.0	10.1	0.0	226.9	139.6	3,256.6
1986*	3,429.0	28.0	0.0	2,435.0	502.0	6,394.0

*Data are preliminary.
Source: Fable (1986)

The Gulf yellowfin fishery supplies a fresh fish market directed at a sushi grade product. The overall average ex-vessel price for yellowfin ranged from \$1.00 to \$3.00 per pound in 1986 with substantial variance based on product quality. The total estimated ex-vessel value of the fishery in the Gulf of Mexico in 1986 was \$8,831,000.

The bycatch associated with this fishery has become a significant issue. Because the gear is fished primarily during daylight hours, the potential for incidental catch of billfishes is greater than in the swordfish fishery. Preliminary information indicates a bycatch of white marlin equal to 1- 2 percent by weight of the total catch; blue marlin represents less than 1% by weight. The National Marine Fisheries Service, Southeast Fisheries Center has initiated a limited, voluntary on board observer program in the Gulf of Mexico and has provided funds to the University of Puerto Rico for observer coverage aboard longline vessels in the Caribbean in an effort to further evaluate the bycatch issue. Incidental catch of Atlantic bluefin tuna is also a major concern and is being addressed through research on gear modification (*i.e.*, alternative gangion strengths) that would minimize retention of bluefin tuna.

BILLFISHES

The management of billfish resources are being addressed by the Regional Fishery Management Councils and by a recently initiated ICCAT program. The

South Atlantic, New England, Mid-Atlantic, Gulf of Mexico, and Caribbean Fishery Management Councils have jointly prepared a draft fishery management plan for Atlantic Billfishes. The plan addresses the fishery for blue marlin, *Makaira nigricans*; white marlin, *Tetrapturus albidus*; sailfish, *Istiophorus platypterus*; and longbill spearfish, *Tetrapterus pfluegeri* in the Atlantic, Gulf of Mexico, and Caribbean EEZ. The principal objective of the plan is to maintain the highest availability of billfishes to the recreational sector and the traditional fishery in the continental United States; however, the plan also acknowledges and provides for continuation of the small-scale, traditional handline fishery in the Caribbean. The major management measures in the draft plan include:

1. A prohibition on sale of all billfishes
2. A prohibition on possession of billfishes aboard pelagic longline and drift gill net vessels
3. A prohibition on importation of billfish harvested from the same stocks managed under the plan
4. Minimum size limits for blue marlin (200 lbs.), white marlin (50 lbs.) and sailfish (30 lbs.)
5. Mandatory reporting requirements for tournament directors
6. Restrictions on foreign fishing including no retention of billfishes, closed areas, and mandatory observer and reporting requirements

Concern over the incidental catch of billfishes in the swordfish and tuna longline fisheries and subsequent development of a commercial market for billfishes was a primary impetus for development of this management plan. As the longline fisheries continue to expand, there is, no doubt, a proportional increase in the unavoidable bycatch of billfishes, and commercial landings of billfishes are increasing. NMFS's data indicate that commercial landings of marlin in the Gulf of Mexico alone increased from approximately 57,000 pounds in 1985 to more than 140,000 pounds in 1986, and landings in the Caribbean exceeded 110,000 pounds in 1986. With the prohibition on the sale of billfishes, except for those caught in the traditional Caribbean handline fishery, and elimination of the commercial market, the Councils believe that a significant number of the billfishes caught incidentally in the longline fisheries will be released alive. This release of fish will increase availability to the traditional recreational fishery and maximize benefits to the nation because of the substantially greater value associated with the recreational use of this resource in the continental United States. If the billfish plan is approved by the Secretary of Commerce, it could be implemented in early 1988.

An additional, significant contribution to billfish management will result from the Enhanced Billfish Research Program initiated at the 1986 ICCAT meeting. The initial funding for this program was provided by ICCAT and through substantial contributions from private U.S. recreational interests. The overall objective of the program is to collect the data necessary for billfish stock

assessments and thus, to improve our understanding of these valuable resources. Primary emphasis will be on fisheries operating in the Caribbean, off the west coast of Africa, and the area off Brazil through Uruguay. Efforts will include: collection of catch and effort statistics and biological samples through port sampling and at-sea observers aboard both small and high seas longline vessels; age and growth studies; and tagging studies to address stock structure, migration, as well as growth and mortality rates.

CONCLUSION

Despite significant efforts, we are, in most cases, only in the early stages of developing comprehensive management plans for our pelagic resources. While we are progressing, we have a long way to go. In some instances, such basic elements as stock structure and status are poorly understood or unknown, and complex issues such as incidental catches are only partially addressed.

The migratory nature of these resources and the mobility of fleets pursuing them further complicate the process. Because these species range throughout the jurisdictions of many countries, it is obvious that the management efforts of any one country can not be totally successful without basic support and cooperation of other involved countries. Of course it is unlikely that all countries would agree on all aspects of any comprehensive management plan, but it is most likely that all could agree on the need and mechanisms for basic data collection and analysis and the fundamental measures necessary for basic conservation of the resources. With a stronger collective commitment to cooperation, sharing of information and expertise, and sincere efforts to discuss regional objective, needs, and capabilities, I am confident that we can make substantial progress in management of our pelagic resources.

REFERENCES

- Fable, Deborah. 1986. Status of the yellowfin tuna fishery in the northern Gulf of Mexico. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Center, Panama City Laboratory, unpublished manuscript. 3p.
- Hoey, J. and A. Bertolion. 1987. Review of the U.S. fishery for swordfish, 1978 to 1986. ICCAT Working Document SCRS/87/47. 17p.