Program of Enhanced Research for Billfish

A meeting of a planning group for developing the Program of Enhanced Research for Billfish convened on November 10, 1986, during the 1986 SCRS Meeting. The Group was chaired by Dr. B. Brown (U.S.A.). In attendance were scientists from Ghana, Japan, Cuba, Korea, U.S.A., Senegal, Canada, and Mexico. Also in attendance were the ICCAT Assistant Executive Secretary (Dr. P. Miyake) and the SCRS Chairman (Mr. J. S. Beckett). Dr. E. Prince acted as rapporteur. Objectives of the meeting were to prepare a comprehensive program for billfish assessment, and including the costs of essential research activities as requested by ICCAT (1985 Commission Meeting Report).

The planning group reviewed the 1986 SCRS Report for its statistics and research recommendations for billfishes and swordfish. After a brief discussion of swordfish research needs, the group felt that further comments concerning this species should be delayed pending approval of the 1987 workshop recommended by the SCRS swordfish species group. The group felt that specific research recommendations on swordfish would be best addressed by this workshop. However, the planning group noted that there were common research needs shared for billfish and swordfish. These include the need for: (1) more complete detailed catch and effort statistics, (2) expanded tagging program; and (3) studies on age and growth.

Area/Species Considerations

The planning group identified two fishing areas as being the most potentially important for intensive scientific study. These were off the west coast of Africa where sailfish are the principal billfish taken (Senegal, Ghana and Côte d'Ivoire) and in the Caribbean Sea where blue marlin are known to be abundant. In addition, the Caribbean also holds large localized concentrations of white marlin and swordfish. The Group recognized the occurrence of billfishes throughout the Atlantic but placed a lower priority for conducting research in high-seas fisheries because of cost and logistical problems.

Catch and Effort Statistics, and Biological Samples

The planning group discussed three basic approaches to obtaining catch, effort, and biological statistics: (1) shore-based technicians at unloading areas; (2) observers on board vessels; and (3) logbooks. It was felt that on-board observers would provide the most complete, detailed, and reliable information. This information would include catch and effort statistics, species composition, sampling hard parts for ageing, sex-specific size frequencies, whole/dressed weight conversions, specific capture locations, and information on the survival of longline-hooked billfish. Shore-based technicians would be able to provide data on species composition of the billfish catch, dressed weight and/or length of unsexed landings, and general data on effort and general location of catch. Logbooks provide catch and effort information, as well as various environmental data.

Tagging Program

The planning group suggested that a billfish tagging program would require ICCAT sponsorship and coordination. Recommended adjustments in the present ICCAT tagging program include: (1) provide specialized tagging equipment tailored to target billfish (the plastic anchors of tuna tags now used by ICCAT were considered inappropriate for billfish); (2) adjust the reward system to include a lottery for release, as well as recapture of billfish; (3) provide all necessary tagging program publicity; (4) institute monetary compensation for the market value of billfish tagged and released during longline operations; (5) charter commercial longline vessels for tagging cruises; and (6) place observers aboard longline vessels to tag billfish.

Age and Growth Studies

Information on age and growth will result from acquisition of hard parts, tag-recaptured billfish, or both. These sources of data have already been discussed in the above sections.

Recommendations

1. An SCRS Billfish Coordinator be identified to oversee research activities.

2. An ICCAT billfish tagging program be initiated to include special tags, tagging equipment, reward (lottery) system, and data archival and retrieval.

3. An ICCAT, at-sea observer program on longline vessels be carried out to obtain biological information (size frequency and age frequency measurements, hard parts for ageing studies, sex information, whole/dressed weight conversions, etc.) as well as to tag billfish.

4. Shore-based sampling be done by ICCAT to obtain biological information as well as logbooks from vessels landing in West African and Caribbean Sea ports. This activity is to include data computerization.

The at-sea observer and shore-based sampling programs should be initiated on a limited basis to allow evaluation of the quality of the data collected and feasibility of applying these programs more extensively. In addition, the feasibility of various aspects of the tagging program, particularly tagging by commercial longliners, and the usefulness of available logbook data should be evaluated. The planning group recognized that this program should be a long-term endeavor, but that expansion of individual elements (listed above) would be implemented slowly depending on results of pilot studies. The current budget proposed refers to the first year. Upon approval by the Commission, a target date for initiation of the program could be January 1, 1987.

Budget for the Program of Enhanced Research for Billfish

Activities	US $
(1) Tagging supplies/rewards	$6,000
(2) Shore-based sampling	3,000
(3) Observer costs (5 x 30 days)...	25,000
(4) Data processing	1,000
(5) Purchase of fish for tagging...	20,000
TOTAL	$55,000