

**T**he Tuna and Billfish Assessment Programme is a three-year program designed to provide a better understanding of the stocks of tuna and billfish throughout the central and western Pacific and to determine the status of the stocks of the commercially important species. It will provide information on the distribution and availability of exploitable concentrations of tuna and billfish and document recent changes in yields and harvesting techniques. It will also provide data as a basis for the assessment of optimum yields and will provide governments with information upon which sound fisheries development and resource management can be based.

Much of the information necessary will be obtained from coordination of national statistical programs and in the centralized accumulation of all available fisheries

statistics from both coastal states and distant-water fishing nations. These figures and relevant biological data will be analyzed and presented in a format readily usable by fisheries planners.

Organizations with which cooperative studies are envisaged include all of the Fisheries Departments in the area of the South Pacific Commission, the Forum Fisheries Agency, the Inter-American Tropical Tuna Commission, the International Commission for the Conservation of Atlantic Tuna, the Japanese Fisheries Agency, National Marine Fisheries Service (U.S.A.), the Commonwealth Scientific and Industrial Research Organization (Australia), the Ministry of Agriculture and Fisheries (New Zealand), and the Office de Recherches Scientifiques et Techniques Outre-Mer (France).

Specific topics to be covered by the Programme have already been set in

priority order by the fisheries officers of the Island countries of the region at the Twelfth Regional Technical Meeting on Fisheries, held in Noumea in November 1980. These are as follows:

**1. Development of a regional statistical program.**

It has been accepted that the South Pacific Commission be responsible for all fisheries survey and assessment in the region. Computer programming has already commenced and additions to the Skipjack Programme computer facilities have been ordered to enable the statistical program to be fully implemented. Processing of data commenced before the end of 1981.

**2. Estimation of the degree of interaction between pole-and-line and purse-seine fisheries and assessment of the impact of each on tuna resources, principally of skipjack and yellowfin tuna.**

A good deal of the information required for these studies can be taken from the results generated by the Skipjack Programme. Additional data will be required from the statistics accumulated from the distant-water fishing nations. It is possible that a new data-generation program may be necessary, but modifications of existing or proposed national observer programs may be all that is required to generate the additional data.

**3. Assessment and monitoring of the levels of exploitation of the stocks of the commercially important billfish species, especially black marlin, blue marlin, striped marlin, sailfish and swordfish.**

There is an urgent need for the assessment of the status of the stocks of the major, highly migratory species in the region. Specific tasks include the assessment of the validity and accuracy of all available, published and unpublished, biological data and other information required for the assessment of the dynamics of the populations or stocks of the numerous tuna and billfish species.

## South Pacific Tuna and Billfish Program

**R.E. KEARNEY**

South Pacific Commission, Noumea

On 30 September 1981, the South Pacific Commission's 3-year Skipjack Survey and Assessment Programme ended. That day also marked the beginning of a new, broader project—the Tuna and Billfish Assessment Programme. Funding support for this 3-year program has already been confirmed by the Governments of Australia, France, New Zealand and the U.S.A.



**4. Continued analyses of the data generated by the Skipjack Programme and evaluation of the impact of this data on resource management.**

Tag-recovery information will continue to be accumulated until well into 1983. The assessments of the skipjack resources of the region made by the Skipjack Programme will need to be updated in the light of this additional information.

**5. Assessment and monitoring of the levels of exploitation of the stocks of the commercially important tuna species, especially yellowfin tuna, bigeye tuna and albacore.**

**6. Assessment of the biological information necessary for the study of population dynamics of the dominant species.**

There is not at this time any centralized repository for biological data on tunas and billfishes in this region. It is not as yet known what biological data is necessary to assist with the assessment of the stocks of species other than skipjack, nor is it known how much of this data already exists.

**7. Studies of the biology and ecology of the most important baitfish species used for catching tunas.**

Adequate supplies of suitable bait are essential for any viable, large pole-and-line fishery. Lack of bait or irregularities in supply are the major problems limiting the development of sizeable skipjack fisheries in many countries of the western Pacific.

**8. Comparison of the biological data on major species with relevant oceanographic and environmental information, with a view to obtaining a description of the habitat available to each species, and hopefully predicting abundance in certain areas.**

The necessary oceanographic data will be accumulated and evaluated and the physiological requirements of each species being studied will be reviewed. It is likely that cooperative projects with organizations with major oceanographic programs will need to be instigated.

It is not known if the study will enable reliable predictions of abundance to be made, but it should at least increase the understanding of why fish aggregate in the areas where they do.

**9. Evaluation of the use of anchored rafts as tuna aggregating devices.**

Anchored rafts are being used increasingly as tuna aggregation devices and while there is no doubt that skipjack and other tunas do congregate in the vicinity of these rafts, little is known of the possible impact of their increased use.

The impact of the increased availability and vulnerability of tuna when they associate with rafts also needs evaluation, particularly with regard to effects on long-term abundance.

**10. Estimation of the degree of interaction between surface and longline gears exploiting yellowfin tuna, bigeye tuna and albacore, and assessment of optimal exploitation of each species by gear type.**

**11. Coordination of observer programs on distant-water fishing vessels.**

While the placement of observers on foreign fishing vessels will probably remain a national prerogative, the Tuna Programme will play an integral role in evaluating the regional significance of the

data accumulated and advising additions to or modifications of the type of information accumulated by observers.

**12. Assessment of the impact on the stocks of changes in the type of longline gear used, especially the trend towards gear which fishes at greater depth.**

In recent years, an increasing number of longline vessels have begun using deep longline gear in order to improve landings of bigeye tuna and large albacore. As this is the most revolutionary change in longlining which has occurred in the last 25 years, assessment of its impact is of high priority.

**13. Evaluation of alternative fish-attractant devices.**

Several fish-attracting devices, in addition to anchored rafts, have been proposed for use in the western Pacific, the most notable being sonic attractants. Critical evaluation of the feasibility of using such devices to increase tuna catches is required.

The budget for the program has been estimated at \$517,750 for the first year.



Catching, catchers and catch (opposite, left and above) in the South Pacific. The program will provide governments with reliable information upon which can be based sound fisheries development and management programs for the region.