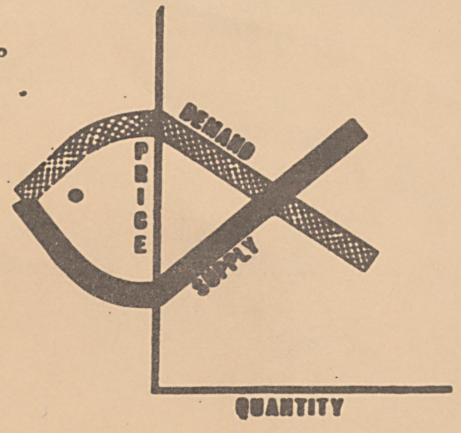

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The Marine Sportfisheries - Statistics and Economics

by

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The Marine Sportfisheries - Statistics and Economics

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In 1970, the responsibility for Federal activities related to marine game fish was transferred from the Bureau of Sport Fisheries and Wildlife in the Department of Interior to the newly created National Marine Fisheries Service in the Department of Commerce. Included in this responsibility is the collection of statistics on the marine sport fisheries in the United States. These activities also include economic and biological studies, and management programs for sport fishery resources. A combination of all these activities are necessary for sound management and conservation of the resources to achieve maximum benefits to the public. Economic and social statistics are necessary to determine the extent of the benefits to society from our activities on marine sport fisheries, and how to best achieve maximum benefits. Catch and effort statistics, coupled with biological studies, are needed to develop plans to effectively manage the fishery resources. This morning, I would like to first discuss the growth of the marine sport fisheries in the United States.

National Surveys of Fishing and Hunting have been conducted for the Department of Interior by the Bureau of Census at 5-year intervals since 1955 to estimate, for broad geographical areas, participation and expenditure data on all fishing and hunting activities in the

United States. In 1955, according to this survey, 4.6 million salt-water anglers fished in the United States, and the number more than doubled in 15 years, with 9.5 million anglers in 1970. This increase in participation, at an annual rate of 5 percent per year, may be attributed to various factors including an increase in the population, in real income per capita, in improved travel facilities and total travel per capita. However, the major contributor is very likely the increased amount of leisure time since 1955, with increased participation in various outdoor activities, including salt-water fishing.

Salt-water anglers spent 489 million dollars during 58 million recreation days in 1955. By 1970, total expenditures increased to 1 billion 225 million dollars and days fished to 114 million. The average daily expenditure was 11 dollars. In the Middle Atlantic Region, extending from the New York - New Jersey border to Cape Hatteras, North Carolina, 1.8 million anglers fished during 1970 and spent about 215 million dollars during 22 million recreation days.

Collection of statistics on the catch of marine sport fish has been attempted only in recent years, largely because collecting such statistics is difficult and expensive. Anglers are dispersed along the coast fishing from boats, piers, jetties, docks, and from shore. They may fish day or night, several days a week throughout the year. Both field sampling and indirect sampling methods, such as household interviews, have been used to collect catch statistics. Both approaches are expensive and have serious limitations, particularly on a national

basis. Most states do not have a salt-water fishing license, which would provide a suitable sampling frame. Several states have occasionally collected catch statistics, although only the Pacific States collect catch data continuously, but they do so for only part of their sport fishery.

Until 1960, no catch statistics were available on marine sport fisheries for the nation as a whole. Each 5 years since 1960, the Bureau of Census has conducted Salt-water Angling Surveys as a supplement to the National Surveys of Fishing and Hunting. Those persons identified as salt-water anglers in the National Survey were asked to report the number and average weight of fish caught, by species, during the year for seven geographical regions of the United States, excluding Hawaii.

Results of the 1960 survey showed the 6.2 million anglers in the United States caught an estimated 633 million fish weighing 1.4 billion pounds. The catch increased in 1965 and again in 1970, when 9.4 million anglers caught 817 million fish weighing 1.6 billion pounds. Anglers fishing in the Middle Atlantic Region during 1970 accounted for 168 million fish weighing 246 million pounds.

Most species of fish are now harvested by both sport and commercial fishermen. In 1970, United States commercial fishermen landed 4.0 billion pounds of finfish, including 1.84 billion pounds of menhaden, a species not taken by anglers. Now if you exclude the catch of menhaden as well as the catch in Hawaii, the Great Lakes and the Mississippi River, the commercial finfish catch in 1970 was 2.01

billion pounds. The catch by sportsmen in 1970 was 1.58 billion pounds, or 44 percent of the total U.S. finfish landings of 3.59 billion pounds.

Combining the sport and commercial catches in the United States by species, it is evident that with some exceptions, there is little direct competition for the same species in some fisheries. For example 95 percent of the tuna, 93 percent of the salmon and 91 percent of the haddock were taken by commercial fishermen. Sportsmen caught 95 percent of the bluefish, 90 percent of the croakers, and 88 percent of the striped bass. However, in local areas, there is certainly some direct competition for these or other species.

I would like to now discuss the value of the marine sport fisheries. The resource manager is frequently called upon to determine the value of a fishery for various reasons, including conflicting uses of the coastal zone, allocation of a fishery resource between user groups or for allocation of public funds. Various techniques have been proposed to assess the value of sport fishing as well as other recreational activities. Evaluation of a recreational activity is difficult, since the intangible values do not fit well into conventional market mechanisms. We might ask "what is the output of the marine sport fishery?" The fish caught are certainly important, although the value of the entire recreational experience must be considered.

When we think of fishing, it is usually the on-site activity that comes to mind, although this is only a part of the entire experience.

First there is the planning of the trip, then the travel to the site, the on-site activity, and the return trip home. The last and important part of the experience is the recollection; the memory value, if you will. If all the satisfactions outweigh all the costs of the trip, we then plan another trip. The total satisfaction, total benefits, are therefore a function of the entire experience. Thus, although the actual catching of fish is part of the value of the trip, the chance to get away from the work-a-day world, to have peace and quiet, or the companionship of others may be much more important as measures of the value of the fishing experience. In a sense, we are asking, how much would an angler be willing to pay to use the resource above what it costs to participate in fishing.

A part of the National Marine Fisheries Service effort in the sport fisheries program is to develop data for the evaluation of benefits to society derived from sport fisheries resources. Another effort is to develop standardized procedures with which to assess these values. Given the limitations of data and methods available, some value estimates have been prepared by National Marine Fisheries Service economists. These estimates result from adding estimates of the primary and secondary benefits of the the marine sport fisheries.

The primary or net economic value that should be assigned to a recreational day has been estimated between 75 cents and 25 dollars, by the United States Water Resources Council and others. The value within this range would depend on the type of recreational activity.

Our economists have estimated that a day of marine sport fishing has a net economic value of about 13 dollars. Thus, multiplying 13 dollars by the 114 million days fished during 1970, the primary economic benefit of the marine sport fishery would be about 1.5 billion dollars.

The secondary economic benefits of the fishery, in the form of income and employment, result from the total expenditures of anglers, or the cost of participating in the fishery. These secondary benefits might, in a sense, be a measure of the maximum loss that might be sustained by a local economy if the fishery were to disappear from the area. The actual loss to the local area would then depend on what alternative attractions it has or could develop, and the proportion of expenditures going to the local area. Total expenditures in 1970 by salt-water anglers were 1.2 billion dollars, which represents the secondary economic value of the fishery. Thus, adding the primary and secondary benefits, the gross value of the marine sport fishery in the United States is estimated by be 2.7 billion dollars. Similar calculations for sport fishing in the Middle Atlantic Region produce an estimated gross value of 500 million dollars. These estimates do not include recreational shellfishing, which for some areas, would add a substanial amount to the gross value of the fishery.

I would like to close with some statements about the Sport Fisheries Statistics Program, the program in which I work. The National Marine Fisheries Service recognizes the need for the continuous collection of catch, effort, and economic data on the marine sport fisheries.

The statistics available to date have been collected at 5-year intervals, using household surveys to interview anglers throughout the country. As these surveys are based on a sample rather than on a complete census, the results are subject to various errors. Since 1970, the Statistics and Market News Division has devised improved survey techniques to obtain data through household surveys, and we recently developed alternative plans to collect sportfish catch and effort data on an annual basis.

As I indicated earlier, the collection of statistics is a costly business for both individual states and the Federal Government. However, data on marine sport fisheries are needed. Projections indicate that by the year 2000 there will be 29 million salt-water anglers in this country, or three anglers for each one today. The future demands that will be placed on the fishery resources by these recreational anglers and commercial fishermen require the development of rational fishery management plans. The basic data necessary for formulating these plans must include adequate catch, effort, and economic statistics on the sport fisheries.