

## IN MEMORIAM: ROBERT LOUIS DRYFOOS, 1939-1974



A modest and understanding man, an unselfish and loving husband, an affectionate father, a devoted son and grandson, and a dedicated and accomplished scientist, this is a rich life of accomplishment, Robert Louis Dryfoos.

He was always willing to lend a hand to his many friends and colleagues, always dependable in responsibilities, and solid in his accomplishments. He could achieve, whether it meant leading a local centennial parade high up on a Rotarian float as an old New England sea captain, or elucidating the complexities of the migrations of a million fish from Cape Cod to the Gulf of Mexico. His quiet nature belied his status as a respected fisheries expert and research administrator. As an authority on the dynamics of fish populations he made significant contributions to a better understanding of the complex fisheries in the northeast Pacific, the Atlantic

coast, and in his most recent work, the fishery resources of the entire United States.

He had a natural curiosity that led him to the ocean at an early age. As a young boy in San Francisco he was never far from the sea, the fresh wet-smell of the surf, the screeching gulls, and the small fishing boats plying their catches under the Golden Gate. His curiosity and his willingness and ability to help others was to be satisfied in a decade of productive fisheries research. Not esoteric problem solving for problem sake, but rather a dedication to learn about the sea and unravel its vagaries of protein production. He collected, sifted, and synthesized previously unknown bits of information, pieced them together meticulously, systematically, and with keen intelligence and patience he would tell us more about how to develop and maintain our fragile fisheries. He teamed with other young and dedicated men, in Seattle, in Beaufort, at Charleston, Woods Hole, La Jolla, Narragansett, and in Washington. He was intent on learning how to better define and manage the wild populations in their tempest environment. And this was a pressing national need, not headline stuff, but the necessary and critical steps to be taken for the fisheries, that all too often are abused, overexploited, and in some cases damaged beyond repair. He chose this direction. He worked. He sweated. He persevered, and he accomplished.

His earliest work was done as a young college undergraduate with the International Halibut Commission in Seattle. He spent months at a time in the north Pacific, rubbing shoulders with halibut fishermen on the banks. They ran their trawls from Seattle up to Sitka in the Aleutians and into the Bering Sea. Bob's affinity to help and make a significant contribution was evident in his interest in going to sea with all the discomforts of tossing ship, hip boots deep in gurry, fish filled checkers, and cold night watches. He learned first hand about fishermen, their problems, the declining stocks, and pondered on how best to rebuild their catches. This early work began a decade of scientific output. While an undergraduate at the University of Washington in 1960 he published his first paper on new range extensions of fish in the north Pacific. His next contribution was made during his graduate

studies, while working part-time and summers for the College of Fisheries at the University. He and his professor reported on their discovery of the egg maturation, embryo development, and birth rates of the ocean perch of the northeast Pacific.

It was at the University of Washington, as an undergraduate that he caught the eye of his senior colleagues as a "comer." They saw in Bob, that all-too-rare combination of an individual with the ability to detect a problem, the desire to get the job done, and the mental prowess to have it done correctly. He was one of the few selected as a Bureau of Commercial Fisheries Fellow, and worked under this fellowship grant from 1962 to 1964, earning his doctorate in fisheries in 1965 from the University of Washington. His doctoral thesis is an important contribution on the life history and ecology of populations of smelt in Lake Washington. This study of the smelt and associated limnetic species in Lake Washington also has provided a data base for future examinations of changes in the fauna. The study was conducted at a peak of eutrophication in Lake Washington. Public concern, aroused in 1956, culminated in the creation of the Municipality of Metropolitan Seattle (Metro) in 1958 which was charged to develop an effective sewage-disposal system for the entire area. The Metro Program, at a total cost of about \$121 million, began diverting sewage from the lake in 1963 and was completed in 1968. In 1968 experts described Lake Washington as a classic case history study of eutrophication and recovery. Changes in the lake's fish populations since this study of the smelt have been marked and are the subject of more recent studies at the College of Fisheries, University of Washington.

The young scientist then moved from Seattle to Beaufort, N. C., to take up the challenge of Government efforts to assist in the revitalization of an ailing menhaden industry. Under his supervision, an ambitious and successful program was undertaken to solve the mystery of menhaden migrations. His team tagged an unprecedented number of fish, some one million, from Long Island to Florida. They proved conclusively that menhaden move north in spring and summer and south in fall. Vital information on fishing mortality and natural mortality was obtained for this resource. His menhaden work for the 7 yr from 1965 to 1971 laid the foundation for what is to become the model program for State-Federal partnership in managing our domestic fisheries.

During early 1974 in Washington, an historic meeting took place where his former colleagues presented the first comprehensive plan for managing this valuable but overexploited resource, worth some \$50 million a year to the economy. This plan could not have been prepared without the inspired and dedicated work of Bob Dryfoos.

With his menhaden work completed, Bob moved on to greater responsibility at Narragansett, R. I. He was instrumental in developing the first comprehensive national program for assessing the important living resources of our coastal and continental shelf waters. The new initiative is called MARMAP for the Marine Resources Monitoring, Assessment, and Prediction Program. In his April 1972 budget message to Congress, the President cited this program as one of the more significant contributions to our civilian oceanographic effort. MARMAP was another "first" for Bob Dryfoos. He helped shape the concept, and mold the national fiber. Like other new initiatives it was subjected to criticism and doubt. But Bob believed in the concept, and with his colleagues he persevered. Nationally coordinated assessments of fishery resources are now being made from the Gulf of Maine to the Caribbean, the Florida Keys to the Bay of Campeche, from Baja California to the east Bering Sea and in the oceanic waters of the tropical Atlantic and Pacific. The results of his MARMAP efforts are just now bearing fruit, and will continue to yield more important results in the latter half of this decade, in the 1980's and beyond.

Bob will be missed by his many friends and colleagues. His accomplishments were considerable. A fine heritage for his dedicated wife Carol, son Ricky, daughter Janet, and his parents. He always found time in a busy schedule for civic activities, Rotary, the kids' skating, Cub Scouts, swimming, and clamming, and all those wonderful pursuits that bring enrichment to a family and their friends, and their community. He leaves behind many wonderful memories. We are all richer from our association with him.

His outstanding record remains with us, and from his contributions we will move on, we will keep building, for a better and rational and more enlightened tomorrow.

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