Warren Wooster Biographies

Scripps Communications, Kevin Bailey, John Knauss

26 November 2008

Warren Wooster marking GEK ‘joglog’ recorder, Transpac Expedition, 1953

IN MEMORIAM

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WARREN S. WOOSTER - International science leader and former Scripps Institution of Oceanography Professor Warren S. Wooster died on Oct. 29, 2008, in Seattle, Wash. He was 87. A chemical and physical oceanographer who earned his doctoral degree from Scripps in 1953, Wooster spent decades fostering collaborative partnerships in oceanography across national and international borders. He published more than 50 papers on oceanography and more than 40 on marine affairs. After earning his Ph.D., Wooster participated in the early stages of the California Cooperative Oceanic Fisheries Investigations (CalCOFI). His Scripps leadership included direction of expeditions such as the Transpac Expedition to Japan in 1953 and Step-1 to South America in 1960. He was chairman of the Scripps Graduate Department from 1967 to 1969. He left Scripps to become the director of the University of Miami¹s Rosenstiel School of Marine and Atmospheric Science. From 1976 to 1991 he was a professor of marine studies and fisheries at the School of Marine Affairs of the University of Washington, where he retired as an emeritus professor. Wooster is survived by Polly, his wife of 60 years, and their three children, Sue, Dana, and Dan, seven grandchildren and one great grandchild.

Warren S. Wooster, Richard Mead and Norris Rakestraw on deck of Spencer F. Baird, July 1953

Warren Wooster

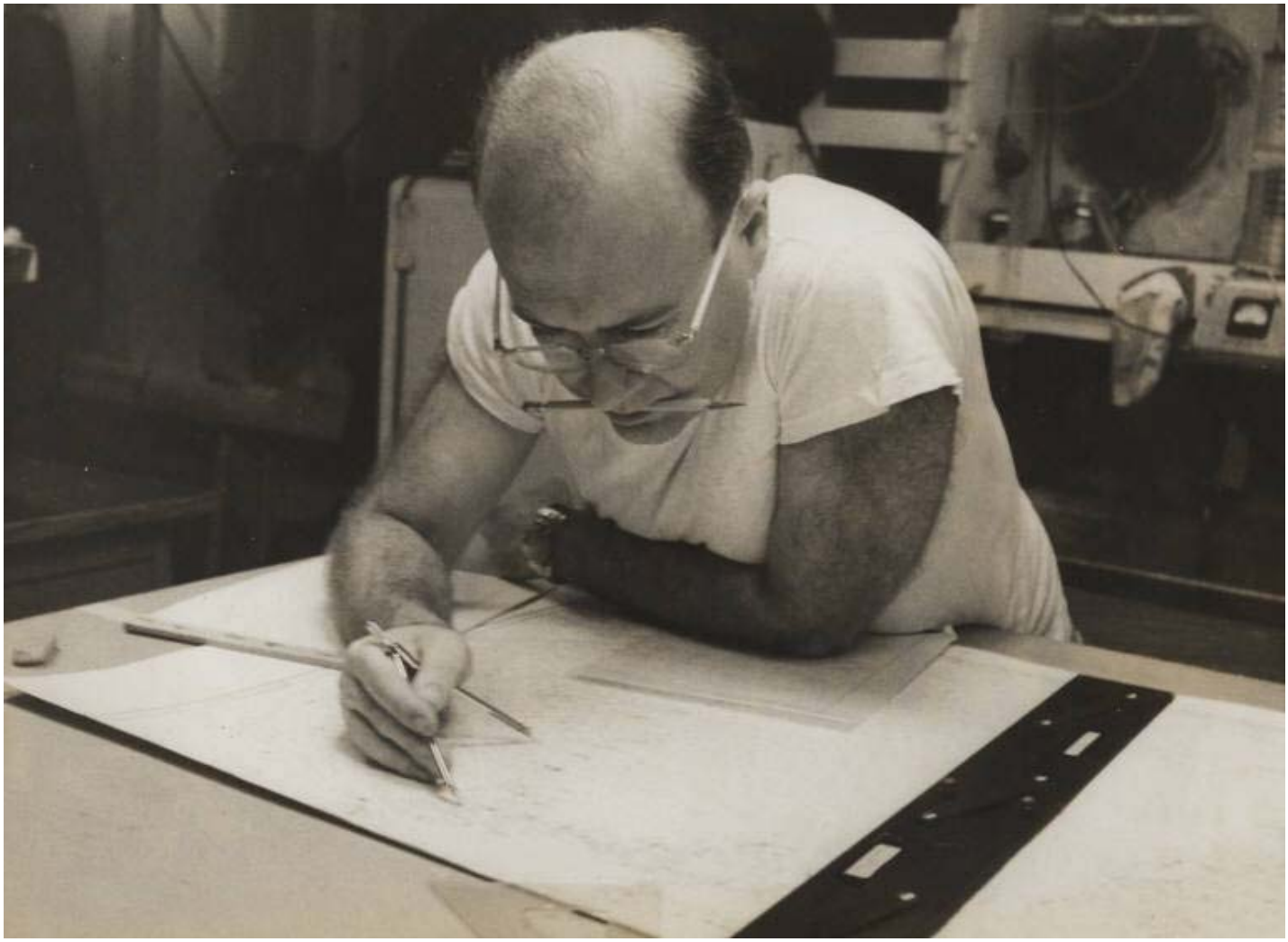
Kevin Bailey

10/31/08

In the early morning hours of Wednesday, 29 October 2008, former chairman of the Graduate Department of the Scripps Institute of Oceanography (1967-1969) and SIO professor WARREN SCRIVER WOOSTER, passed away in his sleep at 87 years of age. He was a (so-called descriptive) chemical and physical oceanographer (B.S. Brown 1943, M.S. Cal. Tech. 1947, Ph.D. Scripps Institute of Oceanography, University of California 1953), later a fisheries oceanographer (coined Fishical by Warren), and from 1976-1991 was a professor of marine studies and fisheries at the School of Marine Affairs of the University of Washington, from which he retired as Emeritus Professor. Warren entered SIO in 1947 under the tutelage of Prof. Norris Rakestraw. He was hired by MLR in the fledgling stages of the CalCOFI program as the chemist, teaming with Joe Reid (physical) and Ed Brinton (biological) to operate the program, which was directed from the top by Sverdrup, Revelle and Sette. For many decades on the national and international stages he struggled to bring the twains, oceanography and fisheries, closer together. He published about 50 papers on oceanography including fisheries and more than 40 on marine affairs. He was an efficient but tactful, persuasive and patient negotiator on many planes, not easily discouraged by adversity, and trusted by students and colleagues at home and abroad.

He distinguished himself in many facets of ocean science and held the offices of: Director de Investigacion, Consejo de Investigaciones Hidrobiologicas of Peru (1957-58); first Secretary of UNESCO's Intergovernmental Office of Oceanography (1961-63); Dean of the Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, FL (1973-76); first Secretary of the Scientific Committee for Oceanic Research (SCOR) of the International Council for Scientific Unions (1963-67) and President (1968-73); Chairman of the Ocean Sciences Board of the U.S. National Academy of Sciences/ National Research Council (1978-81); President of the International Council for the Exploration of the Sea of 1901 (ICES, 1982-85); and Director of the Institute of Marine Science, University of Washington (1979-82). Finally, he was the principal founder (and widely recognized as father) of the North Pacific Marine Science Organization of 1992 (PICES, for Pacific ICES) and served as its first chairman (1992-96). He was a fellow of the American Geophysical Union and the American Meteorological Society.

Warren was a great teacher, wonderful friend, and admirable human being. He met his wife Polly on a blind date after the war, they fell in love, and were married in a grand partnership for 60 years. He is survived by Polly and their three children (Sue, Dana and Dan), seven grandchildren and one and 8/9ths great grandchildren. Warren, Polly and the kids had many adventures living and traveling in the world. The Wooster kids were a familiar sight playing on the beach below the Scripps pier. Warren loved the adventure and camaraderie of doing research at-sea and he was dedicated to understanding the ocean and its resources, and using that knowledge to contribute to a better Earth.



Warren Wooster, Transpac Expedition, 1953

PICES Press 5(1) 1997

Warren S. Wooster

This article is written by Dr. John Knauss (see below) *in appreciation and recognition of the efforts of Dr. Warren Wooster in the establishment of the North Pacific Marine Science Organization and his outstanding service to PICES over many years. In his 75th year he completed over two terms (1992-1996) as the first Chairman of PICES.*

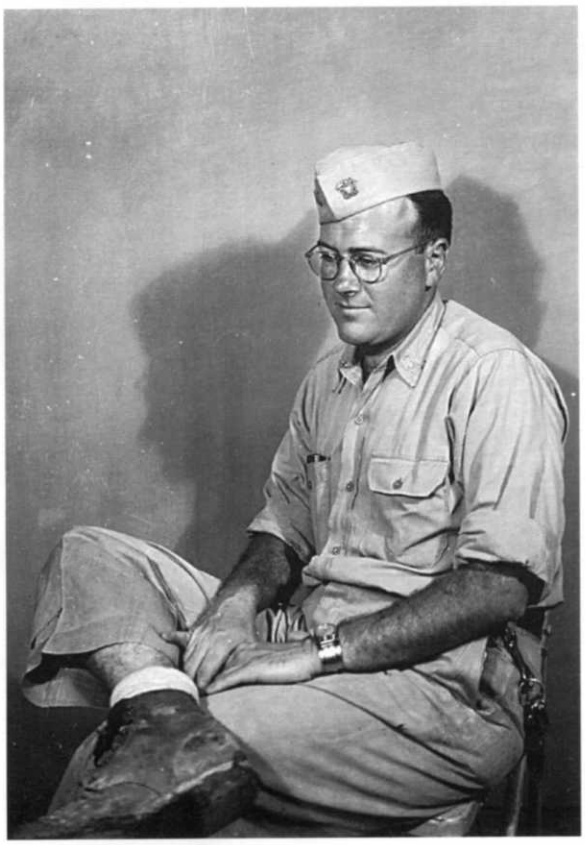
Chairman of PICES, 1992-1996

No one has contributed more widely and deeply to the international infrastructure of marine science than Warren Wooster, and it is unlikely that anyone will match his record in the future. He has served as Director of the UNESCO Office of Oceanography & Secretary to the Inter-governmental Oceanographic Commission (IOC), President of the Scientific Committee on Oceanic Research (SCOR), President of the International Council for the Exploration of the Sea (ICES), and Chairman of the North Pacific Marine Science Organization (PICES).

He was the first IOC Secretary, taking that position in 1961, and it was his task to help guide this fledgling international organization during its formative years. The IOC is housed in the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the verb "housed" is used advisedly. Many within UNESCO consider IOC as simply one more division of its vast Parisian empire. Others note the desire of the IOC founders to have IOC an independent international organization, like the World Meteorological Organization. The relationship has always been ambiguous, but this ambiguity has allowed the United States and the United Kingdom to remain members of the IOC after withdrawing their support for UNESCO. Warren, as first IOC Secretary, had the task of steering the IOC through these uncharted UNESCO waters, and managed to keep the IOC firmly focused on its scientific goals and nearly free of political complications.

Dr. John Knauss received his Ph.D. from the Scripps Institution of Oceanography in 1959 (six years after Dr. Warren Wooster). His research interests have mostly concerned studies of ocean circulation and he has led about a dozen expeditions in the Atlantic, Pacific, and Indian Oceans. Dr. Knauss was the founding Dean of the Graduate School of Oceanography of the University of Rhode Island and led that program for 25 years. Under President George Bush he served as the Administrator of the National Oceanic and Atmospheric Administration (NOAA). This past year Dr. Knauss was elected president-elect of the American Geophysical Union.

Undergraduate student of the Brown University, 1940



U.S. Navy, Okinawa, 1945

Many, and I amongst them, believe that IOC's finest hours were its earliest. It was under IOC auspices that the International Indian Ocean Expedition (IIOE) was organized. Some 40 ships and 23 nations participated in this 1962-64 effort to study what, at that time, was the least understood of our major oceans. Although the 1958 International Geophysical Year may have had more ships and wider participation, nothing of this scale, with its focus on a single area and a single set of problems, had ever been attempted by the marine community. It set the pattern for future focused international marine research efforts. The detailed organizational effort that led to the success of the IIOE was done while Warren Wooster was serving as first Secretary of the International Oceanographic Commission. His opportunity to participate in the IIOE came in 1964 aboard the research vessel *Argo* after he had returned as a Professor to the Scripps Institution of Oceanography.

One consequence of the International Geophysical Year (IGY) of 1957-58 was the realization that marine science as then practiced cut across the various international unions that comprise the International Council of Scientific Unions (ICSU). Oceanography was a significant part of the IGY, but planning lagged some of the other geophysical sciences, and a number of those involved in that planning prevailed upon ICSU to establish a continuing organization dedicated to international cooperation in deep-sea research, with national committees and representatives from several unions with an interest in ocean research. That organization was the Scientific Committee for Oceanic Research (SCOR) whose first task was the organization of the International Indian Ocean Expedition. In principal, the planning for the IIOE was to be done by the scientific committees of SCOR, but, since international science committees seldom control either budgets or ships, the implementation of those plans required the approval of governments, and that meant approval of the IOC.

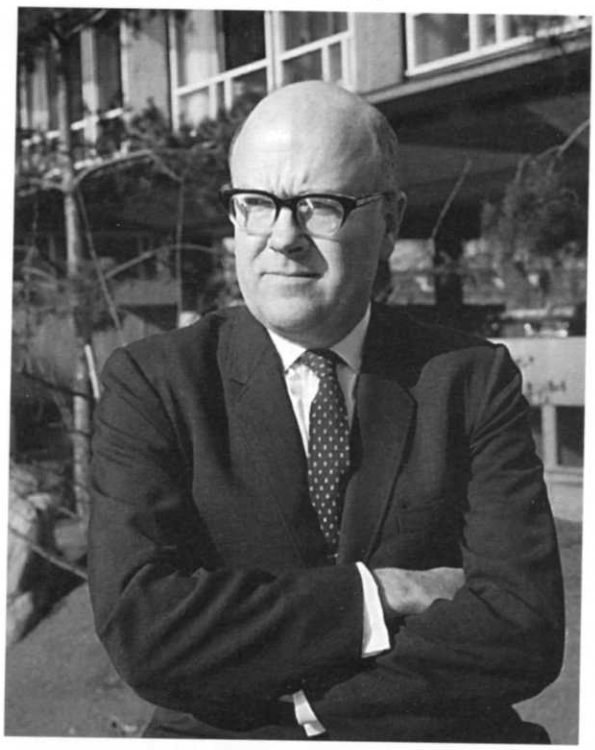
This symbiotic relationship worked well during the early days of both organizations when both were small, and a number of representatives were members of both organizations. When Wooster left the IOC in 1963 to return to Scripps, he was immediately made a U.S. member of SCOR, and almost immediately became SCOR Secretary, a position he held for four years. In 1968 he was elected President of SCOR, and served as SCOR President from 1968 to 1972. There was no full-time SCOR Executive Secretary in those days which meant the officers did all the work; nonetheless this period saw a rapid growth of SCOR working groups

On the Northern Holiday Expedition (manganese concretion), Gulf of Alaska, 1951

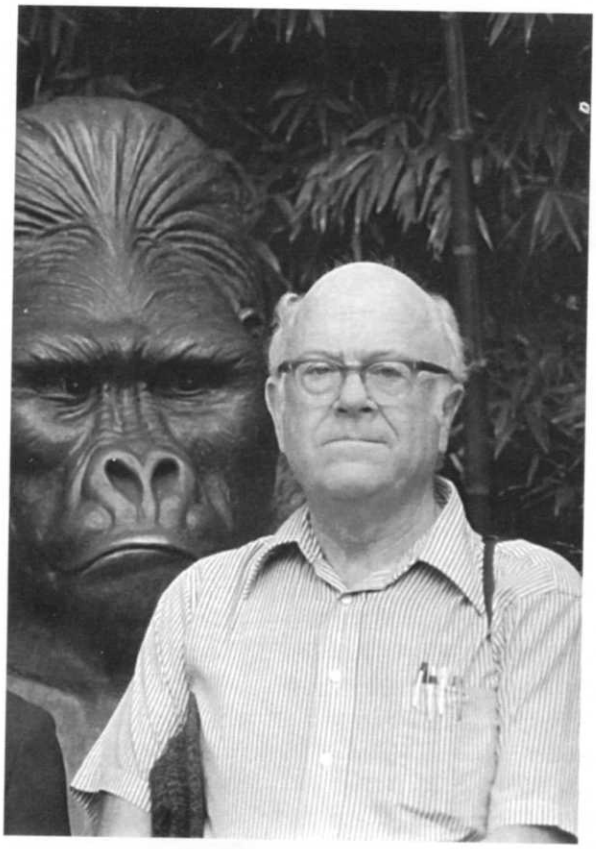
and a vastly increased involvement of the marine community in SCOR activities.

Warren's next major international committment was the International Council for the Exploration of the Sea (ICES). I remember as a young graduate student reading some reference to ICES in The Oceans, that magnificent text by Sverdrup, Johnson and Fleming from which most of my generation, in the United States at least, had their introduction to oceanography. I also remember how surprised I was when, a few years later, I learned that the "sea" of ICES was limited in large measure to the North Sea and its environs. Although the United States was a member for a brief time before World War I, ICES was essentially a northern European club dedicated, as it had been from its beginning in 1902, to understanding the fisheries and oceanography of the Baltic, the North Sea, and the northeast Atlantic.

As the fishing areas of ICES members expanded after World War II, so did the ICES domain, and in 1973 the United States rejoined. Canada having also joined ICES, its focus was significantly broadened. (Another PICES member, Russia, is also a member of ICES.) Each member has two Delegates (although many more scientists serve on ICES committees), and in the United States, at least, traditionally one of those two Delegates is a government representative and one a non-government or academic member. Fortuitously, Wooster had changed oceans the same year, becoming Dean of the University of Miami's Rosenstiel School of Marine and Atmospheric Science, so, of course, he became the non-government representative from the United States. In 1982 he was elected President of ICES, the first, and to date, the only United States representative to hold that position. As President he was faced with issues as mundane as bringing the central office into the computer age to renegotiating the relation of ICES to the European Economic Commission in light of the recently completed Law of the Sea Convention and the formal establishment of Exclusive Economic Zones. After his three-year term as President, Warren served a three-year term as Cha irman of the ICES Consultative Committee, which is similar in its functions to the PICES Science Board.



Secretary of IOC, UNESCO House, Paris, 1963



San-Diego Zoo, 1992

It was his ICES experience that convinced him that the Pacific Ocean would be well served by a similar institution, and with typical Wooster charm, tact, and diligence, and calling upon some 30 years of international experience, he led the effort which resulted in the establishment of the North Pacific Marine Science Organization (PICES) in 1992. It was natural that he became its first Chairman, a position he has held until 1996. PICES began with four members (Canada, China, Japan, and the United States) and expanded by fifty percent (Russia - one of the original negotiating parties and Korea formally became members) during Warren's tenure. PICES now has a wide variety of working groups on subjects ranging from data exchange to the effects of birds and mammals on marine resources, has published one review volume (on the Okhotsk Sea), and has another in preparation (on the Bering Sea). It is well on its way to achieving its goal of providing to its members the same range and quality of services as ICES.

Not all of Warren's contributions to the infrastructure of oceanography have been at the international level. He has logged a dozen years as member or chair of committees and boards of the National Research Council of the U.S. National Academy of Sciences. He chaired a federal committee charged with coordinating the use and structure of the various research vessels controlled by U.S. universities, and in the mid-seventies he served two years on the Presidentially appointed National Advisory Committee on Oceans and Atmosphere. From 1973-76 he was Dean of the Rosenstiel School of Marine and Atmospheric Sciences of the University of Miami, at the time one of the half dozen largest and most important academic oceanographic centers in the United States.

All of this was done while maintaining a continuing record of scholarly activity. His earliest papers, the first of which was published in 1949, were in chemical oceanography. About 1955 he began expanding into regional oceanography, and ten years later his first papers in fisheries oceanography began to appear. And he hasn't stopped! In 1991 he delivered a scientific paper on hydrobiological variability at a symposium honoring the 70th anniversaries of himself and four other senior ICES colleagues.

In all, Warren Wooster has published nearly fifty papers in oceanography on subjects as varied as the Somali current of the Indian Ocean and the Peru Current of the South Pacific; on techniques for measuring phosphate at sea and the definition of salinity; on the relationship of fisheries recruitment to oceanographic conditions; and whether the decline of marine mammals can be

attributed to a lack of food. In 1994 he co-authored two papers describing decadal changes in both ocean and fisheries conditions in the eastern Pacific. He has published an almost equal number of papers (forty) in marine affairs, on subjects as far ranging as law of the sea, marine resources, and international marine science institutions. And finally, he has served as editor of five books on oceanography and marine affairs. In sum, he has a record as a publishing scholar that stretches over more areas and more years than all but a very few, and it is a record established while leading the life of one of this era's premier contributors to the health and well being of international ocean science.

Like most of his generation of oceanographers, Warren Wooster became one almost by chance. He was an undergraduate chemistry student at Brown University, but upon graduation found himself in the U.S. Navy in the middle of World War II. After three years in the Navy he found the graduate chemistry laboratories at the California Institute of Technology too confining and followed one of his Brown professors to the Scripps Institution of Oceanography. He was the only student in chemical oceanography when he arrived in 1947.

Surplus naval vessels became research ships after World War II, and suddenly doing research at sea became possible, but few had any experience. Professors and students all learned together, and Warren soon became one of the best. When I arrived as a student at Scripps in 1951, Warren, still without his PhD, had already led one major expedition to the Gulf of Alaska and was about to lead another to the eastern tropical Pacific, a region where he would make a number of significant contributions over the next twenty years. Much of what I learned about being an expedition leader I learned on that first cruise with Warren. We all knew our responsibilities, and Warren made a point of knowing what each of us was doing. He continued to spot check all the data and oversee all the procedures. One quickly learns that at sea there are few opportunities to repeat botched observations. They are either done correctly, or one must wait for the next ship. Between 1950 and 1970, Warren Wooster led seven oceanographic expeditions, spending more than a year at sea. He never came home empty handed.

During his long and illustrious career Warren Wooster has contributed much to the health and well-being of our science, and he is not finished yet. Although he formally retired from the University of Washington in 1991, he still rides his bike daily to the office. In 1995 he graduated two masters degree and one PhD degree student and has recently taken on a new student. Our community is indeed fortunate that a tour in the Navy transformed a laboratory chemist to a sea-going one.

Warren S. Wooster and Roger Revelle at Spencer F. Baird, July 1953