

WOODS HOLE LABORATORY REFERENCE DOCUMENT NO. 85-14

100 YEARS OF PUBLICATIONS

BY WOMEN IN FISHERIES

AT THE

WOODS HOLE LABORATORY

1885-1985

IN CELEBRATION OF THE CENTENNIAL

JUDITH BROWNLOW,
SUSAN ROCKWELL,
LINDA DESPRES-PATANJO,
CHERYL D. WINDSOR

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<i>Nancy B. Jeffrey</i> (APPROVING OFFICIAL)	
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U.S. Department of Commerce
National Oceanic and Atmospheric Administration
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Northeast Fisheries Center
Woods Hole Laboratory
Woods Hole, Massachusetts 02543

The following bibliography records the written and published contributions of women at the Woods Hole Laboratory from 1885 to 1985. It was compiled to coincide with the Laboratory's Centennial in August of 1985. The listing represents part of the effort of the Woods Hole Laboratory's Federal Woman's Program to summarize contributions of women to the scientific programs of the Laboratory for the Centennial. The publications show the changing research emphasis of the Laboratory: from descriptive and "pure" biology in the early part of the century to stock assessments of commercially and recreationally important fisheries in the later years. The research that was done to compile the bibliography and write the text revealed some interesting careers in science of women who worked at or were closely associated with the Woods Hole Laboratory.

1880 - 1900

For the first 60 years of its existence, the Woods Hole Laboratory was open for research only during the summer months. During this time employees of the Bureau of Fisheries carried out the research of the agency while guest investigators were allowed to use the Laboratory for basic research in marine biology. Women were part of the scientific staff from the very beginning. The Laboratory proved to be a starting point for many women who later developed notable scientific careers in other places.

In the late 1880's, Katherine J. Bush analyzed deepwater molluscs dredged by the research vessel FISH HAWK. The taxonomic paper she wrote was published in the U.S. Fish Commission Report for 1883. She later became the first woman to earn a doctorate in Zoology from Yale University. In addition to her paper on deepwater molluscs, which is the first entry on the bibliography, she published 18 other papers on marine invertebrates. (Rossiter. Women Scientists in America.)

In the summer of 1881, Mary Jane Rathbun volunteered to assist Spencer Baird at the Woods Hole Laboratory. In 1884, she began receiving a salary. In 1886, she transferred to the U.S. National Museum in Washington, DC. Although her job titles remained subordinate, she took over the general supervision of the invertebrate collection at the National Museum. Two of her notable monographs are: The Grapsoid Crabs of America, U.S. National Museum Bulletin 97 and The Cancroid Crabs of America, U.S. National Museum Bulletin 152. By the time she died in 1943, she was one of the world's leading experts on crab taxonomy and had written 158 publications on the subject.

1904 - 1920.

Rose MacDonaid, a librarian in Woods Hole from 1904 to 1905, has the distinction of compiling the first index to all the publications of the Bureau of Fisheries from 1871 to 1920. The index took 8 years to compile. The task required

her to have a personal knowledge of all the Bureau's publications, which by 1920 numbered several thousand. Her career with the federal government spans the years from 1904 to 1920; the first two having been spent in Woods Hole and the last 12 in Washington, DC. In addition to her work on the Analytical Subject Index of Bureau Publications, Rose MacDonald was also required to catalog by subject each scientific article received in the Washington, DC library, purchase and catalog all books, compile subject bibliographies, and handle library correspondence. As part of her job she had to make site visits every summer to field locations in Woods Hole, Beaufort, NC, Fairport, Ohio, and Key West, Florida.

1922 - 1931

Information on the next period, 1922 - 1931, was found in a register of investigators who occupied tables in the Laboratory during the summers. Many summer guest investigators were women with titles such as micro-technician, instructor, associate professor of biology, junior nematologist, research assistant, and scientific illustrator. Louella Cable, a junior aquatic biologist who worked on larval fish studies, became an author of a major paper on reproduction and development of the Sciaenidae in 1940. Another woman, Marie Poland Fish, who registered in the summers of 1922 through 1926 worked on identification of

larval and juvenile fishes. She published a paper on the early life history of fishes in 1935. Both of these women published in the Bulletin of the Bureau of Fisheries.

1932 - 1948

The Laboratory experienced a period of low activity from 1932 to 1948. The long established policy of the Bureau in supporting basic marine research began to decline. Guest investigators were no longer supported in the summer months. The Depression and World War II curtailed the research activities of the Laboratory.

In 1948, the Woods Hole Laboratory experienced a rebirth, caused by the government's renewed interest in fisheries research and the fishing industry's concern over the decline in abundance of New England's valuable groundfish resources. The Laboratory was opened full-time in 1948. The North Atlantic Fisheries Investigations moved from Cambridge to Woods Hole the same year.

Rachel Carson

A woman scientist of international renown, Rachel Carson, was associated with Woods Hole in two ways: she used the Marine Biological Laboratory Library as a post graduate student in the early 1930's and she was the first woman to go out on a fisheries research vessel in 1949. She is best

known for her books Under the Sea Wind (1941), The Sea Around Us (1951), The Edge of the Sea (1955), and Silent Spring (1962). She also wrote several popular articles for the Bureau of Commercial Fisheries: Food from the Sea; Fish and Shellfish of New England, Conservation Bulletin No. 33 (1943); Fish and shellfish of the Middle Atlantic Coast, Conservation Bulletin No. 38 (1945); and Fish and Shellfish of the South Atlantic and Gulf Coasts, Conservation Bulletin No. 37 (1944).

The federal government made use of Rachel Carson's talents as a biologist and a writer: she worked her way up the bureaucratic ladder in the Fish and Wildlife Service, going from Assistant Aquatic Biologist in 1943 to Biologist and Chief Editor in 1949. She retired in 1952.

The following quotation is from Rachel Carson's account of how she came to go out on the ALBATROSS III:

While I was doing information work for Fish and Wildlife, the Service required a research vessel for work at sea, specifically on the famous fishing ground known as Georges Bank, that lies some 200 miles east of Boston, and south of Nova Scotia. Some of the valuable commercial fishes are becoming scarce on the Bank, and the Service is trying to find the reason. The ALBATROSS III, as this converted fishing trawler was called, operated out of Woods Hole, making repeated trips to Georges. She was making a census of the fish population; this was done by fishing according to a systematic plan over a selected series of stations. Of course, various scientific data on water temperature and other matters were collected too.

It was decided finally - and I might have had something to do with originating the idea - that I could do a better job of handling publications about the ALBATROSS if I had been out on her. But there was one great obstacle.

No woman had ever been on the ALBATROSS. Tradition is important in the government, but fortunately I had conspirators who were willing to help me shatter precedent. But among my male colleagues who had to sign papers, the thought of a woman on a ship with some fifty men was unthinkable. After much soul searching, it was decided that maybe two women would be all right, so I arranged with a friend, who was also a writer, to go with me.... And so one July day we sailed from Woods Hole into ten days of unusual adventure.... There is something deeply impressive about the night sea as one experiences it from a small vessel far from land. When I stood on the after deck on those dark nights, on a tiny man-made island of wood and steel, dimly seeing the great shapes of waves that rolled about us, I think I was conscious as never before that ours is a water world dominated by the immensity of the sea. (Brooks. The House of Life, pp. 114-115)

1948 - present

Eugenia Galtsoff, a Russian emigrant and wife of the Laboratory Director, Dr. Paul Galtsoff, co-authored several papers on experimental studies of the toadfish, Opsanus tau between 1947 and 1953.

There were notably few women scientists in the period from 1948 to 1971. Harriet Elizabeth Murray was the only woman at the Laboratory publishing from 1960 to 1968. She wrote or co-authored 15 papers from 1958 to 1982. The papers were on the cod fishery, the deep sea red crab, and invertebrates in the Middle Atlantic Bight region.

After 1970, the Laboratory increased its hiring of woman scientists. The increased hiring of women after 1970 is indirectly the result of the passage of the Civil Rights Act of 1964 and the growing need of the federal government to comply with Equal Employment Opportunity and Affirmative Action regulations. The Federal Women's Program was started at the Laboratory in 1975.

1972 was a watershed year for women scientists publishing at the Woods Hole Fisheries Laboratory. Judith Brennan-Hoskins was an author on her first paper in that year. Publications in the 13 year period of 1972 to 1985 account for over 80% of the bibliography. Judith Brennan-Hoskins, one of the first woman scientists to be hired in the early 1970's, was a Fisheries Statistician. She authored 22 papers from 1972 to 1978. Her papers dealt basically dealt with: total fishing effort and the relation to maximum sustainable yield; effect of fishing on the total finfish biomass; effects of by-catch on management of fisheries; evaluation of USA sampling scheme; effects of vessel efficiency on effort regulation; linear programming simulation of efforts of by-catch on national catches; changes in efficiency of fishing fleets; procedure of estimating catch from overflights and inspection boardings; variance of age composition; variations in daily catch effort.

Her distinguished career was cut short by her early death in 1978.

The most prolific woman scientist currently writing at the Laboratory is Ann Lange. She wrote or co-authored 59 papers between the years 1975 to 1985. She is recognized as an international expert on squid biology and assessment. Her papers also include the subjects multispecies fishery trends and assessments, and by-catch of non-target species.

It should be noted that publications are only one way of showing the contributions that women have made to the Laboratory's research programs over the years. Women have worked in many vocations which enhanced and supported research programs and indirectly contributed to the quality of publications. Women have worked at the Woods Hole Laboratory in many vocations, such as, statistician, fishery biologist, biological oceanographer, operations research analyst, economist, librarian, writer-editor, editorial assistant, graphic arts technician, photographer, budget analyst, secretary, program analyst, biological laboratory technician, administrative officer, research assistant, personnel assistant, purchasing agent, fisherman, messman, second cook, NOAA Corps Officer.

Woman scientists working here are now publishing in a variety of subjects, for example: multispecies fisheries interactions, remote sensing as applied to marine ecology, and economic status of the New England fishing industry, in addition to fisheries stock assessments. There have been overwhelmingly more women publishing in the past 10 years than at any other period in the history of the Laboratory. It is expected that women will continue to contribute significantly to the published scientific output at the Woods Hole Laboratory as an important and visible aspect of their professional achievement.

J.B.

7 March, 1986

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