

MARIE SANDERSON (1921–2010)

Marie Sanderson, pioneer geographer, climatologist, and Arctic enthusiast, passed away on July 12, 2010 at the age of 88. Born in Chesley, Ontario, she enrolled at the University of Toronto in 1940, at a time when few women went on to higher education. Her favourite course in the first year of her Social and Philosophical Studies program was geography, taught by Griffith Taylor. In second year, she registered in honours geography and was one of only three students in her year. She graduated in 1944.

It was Taylor who first taught Marie climatology and also inspired in her an interest in the polar regions. Taylor was one of the scientists on the ill-fated 1910–12 Antarctic Expedition, led by Captain Robert Falcon Scott, so the students no doubt heard all about his experiences on that expedition. Marie said that “behind his gruff exterior, [Taylor] was a kind and considerate man.” It was Taylor who suggested that she enroll in graduate school. He heard that Maryland was looking for graduate students in geography; Marie successfully applied for a scholarship.

The defining graduate course for Marie at Maryland was climatology, taught by C. Warren Thornthwaite. Marie loved the course! She said that Thornthwaite was “an inspiring lecturer, disliking formal presentation and preferring a mentor-student relationship.” With Thornthwaite as her advisor, Marie studied the climatic factors limiting crop production in the Canadian Northwest. In her analysis, she used climate data from the Northwest Territories (NWT) and Thornthwaite’s water-budget technique to determine water need and supply.

The year 1946 was a pivotal one in Marie’s life. In June, she successfully defended her Master’s thesis; in August, she married her high school sweetheart; and in September, she started work at the Ontario Research Foundation in Toronto, studying agriculture and climate. One of her first tasks was field measurements of potential evapotranspiration using a Thornthwaite-designed evapotranspirometer. After successful experiments in Mount Pleasant Cemetery, Toronto, Thornthwaite was keen to see further experiments conducted in the NWT. As the NWT was not within the mandate of the Ontario Research Foundation, the project required the acquisition of research funding and the selection of a study site.

To mount a field experiment in the NWT was not going to be easy, but Marie approached the task with typical determination. On the advice of geophysicist Tuzo Wilson, Norman Wells on the Mackenzie River was selected as the field site. Marie was successful in obtaining funding from the Arctic Institute of North America, as well as logistical support from Imperial Oil that included free flights and accommodation! The Meteorological Branch of the Department of Transport agreed to assist by continuing daily readings after Marie’s departure. Two evapotranspirometers were installed, and 65 days of readings were obtained in the summer of 1949—the first climate experiment in the NWT.



Marie Sanderson wearing her Inuit parka at Inverhuron on Lake Huron, her “favourite place in the world,” in September 2009.

Marie loved the work and the Arctic environment, and this sealed her lifelong interest in the North.

In 1950, Marie moved with her husband to Windsor. The next 10 years were focused on family responsibilities, but she did not entirely leave research behind. In her garden, she established a small meteorological station, which included two evapotranspirometers, and became an official Canadian weather observer.

But academic life beckoned, and in 1960 Marie was accepted into the PhD program at the University of Michigan. In her thesis, she investigated the factors influencing water levels in the Great Lakes. She successfully defended her thesis in 1965, the same year that she was appointed an assistant professor in the “Section of Geography” at the University of Windsor.

Marie’s second visit to the Arctic was in 1973. Marie’s daughter Susan and four of her friends from university were canoeing the Mackenzie from Hay River to Tuktoyaktuk. Marie joined them in Inuvik for the final stage. All went well until the weather deteriorated. After several days, they found themselves near an Imperial Oil camp. They were offered hot meals and warm beds, and the next day they and their canoes were flown by company helicopter to Tuktoyaktuk.

Marie’s next visit to polar regions was a three-week trip to the Russian Arctic in 1975, with support from the Natural Sciences and Engineering Research Council of Canada and the Soviet Academy of Sciences, to confer with climatologists in Yakutsk. She also visited Tbilisi. The following year, Marie returned to Leningrad and Moscow with the Canadian delegation to the International Geographical Union.

It was Marie’s experiences in the Soviet Arctic, where most of the scientists were local people, that made her

consider running a university course in Arctic Canada to interest Inuit students in environmental science. With the assistance of colleagues John Jacobs and Paul Hebert, the blessing of the University of Windsor, the cooperation of the NWT Department of Education, and partial financial support from a Windsor donor, a 21-day, full-credit course was held in Iqaluit (then Frobisher Bay) in August 1977. Two additional faculty members and an Inuit elder also provided instruction to 12 Inuit students and 12 students from southern Canada. Lectures took place in the morning, with fieldwork in the afternoon. The highlight was a five-day camping trip to Ward Inlet, where the students did individual projects. The course was repeated in Iqaluit in 1978, 1979, and 1981, and in Igloolik in 1980.

Marie's greatest accomplishment during her 23 years as a faculty member at Windsor came in 1980, when she and colleague Paul Hebert established the Great Lakes Institute. As founding director of this research institute, Marie enlisted faculty members from several departments at Windsor to participate in multidisciplinary projects, such as the study of toxic contaminants in Essex County and the implications of climate change for navigation and power development in the Great Lakes.

After retiring from Windsor in 1988, Marie had no intention of leaving academia. She was invited by Bruce Mitchell, chair of the Department of Geography, to come to the University of Waterloo as an adjunct professor and, with the assistance of the Grand River Conservation Authority, establish a water resources institute. Marie planned the Water Network and in one term had 43 faculty members from the universities of Waterloo, Wilfrid Laurier, and Guelph signed up as members! She organized applications for research funding and planned symposia.

While at Waterloo, Marie's love of the North encouraged her to organize another university course in the Arctic at Igloolik in 1993. Nineteen students heard lectures and presentations by faculty and local Inuit leaders; they also undertook fieldwork and projects.

Marie loved to travel. Mention has already been made of her trip to the Soviet Arctic. She was also invited to visit China in 1987. She attended meetings of the International Geographical Union in India, the USSR, Japan, Paris, and Hawaii. She spent sabbatical leaves in Oxford and at the University of Hawaii. She visited Australia to gather material for her biography of Griffith Taylor. Travelling for pleasure, Marie visited many countries, particularly in Europe. If asked, however, her "favourite place in the world" was always her cottage and the beach at Inverhuron on Lake Huron.

Writing about climate was one of Marie's major contributions. For example, she wrote about the climate of the Essex Region, weather and climate in southern Ontario and in Kitchener-Waterloo, and weather and water in the Grand River Basin—books suitable for the student and the general public. She also wrote biographies of her mentors. First, it was Griffith Taylor (1988). Then she co-authored books on C.W. Thornthwaite (1996) and Donald Putnam (2000). Her

final book was her autobiography: *High Heels in the Tundra: My life as a geographer and climatologist*, published by iUniverse in 2009. The title comes from a skit performed at an end-of-term party in Windsor by her most famous student, "weather guru" David Phillips of Environment Canada. It acknowledges that Marie was always elegantly dressed.

Marie's academic education and career spanned 60 years during a time when many changes occurred. She was a female in a male-dominated profession, but this did not hold her back, probably because of the enthusiasm with which she lived all aspects of her life. She achieved several "firsts," among them the first climate experiment in Arctic Canada, the first female geography professor in Canada, and the first female president of the Canadian Association of Geographers. In 1988, she was Windsor's "Woman of the Year." She received a Ryerson Fellowship and honorary degrees from the universities of Waterloo, Windsor, and Lethbridge, and in 2010, from her alma mater, the University of Toronto. In 2010, the breast cancer that had afflicted her five years previously had returned, so she was not well enough to attend the ceremony. Instead, the chancellor, president, and the chair of geography at Toronto visited Marie in her apartment in their academic robes to present the degree.

In the final sentence of her book, Marie says, "I have had a rich and rewarding life." It was indeed, and at the same time it was a life that enriched the lives of many others, especially university students, geographers, and climatologists. She is survived by her daughter, Susan; her sons, Hardie and James; two adopted daughters, Sharon and Joan; and 10 grandchildren.

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