

Harold E. (Hal) Malde

July 9, 1923 – November 4, 2007

Hal Malde, 84, died of leukemia on November 4, 2007 at the Hospice Care Facility in Louisville, Colorado. He was born Harold Johnson in Reedsport, Oregon, on July 9, 1923. At the age of five he was adopted by Emil and Bessie Malde. In 1941, he enrolled at Willamette University in Salem, Oregon, but at the onset of World War II he enlisted as an Aviation Cadet in the U.S. Naval Reserve. He earned his wings and was commissioned at Pensacola, Florida, in January 1944. While undergoing further flight training on the Pacific coast, he lost his left eye and was retired for physical disability in January 1945. Hal then returned to Willamette, where he majored in Mathematics and Chemistry and was elected president of the student body. He graduated magna cum laude from Willamette in 1947. The next fall he began graduate study of mathematics at Harvard University. A conversation with Professor Kirk Bryan in the geology department inspired Hal to transfer to the University of Colorado to study geology.

Hal was hired by the U.S. Geological Survey in 1951 and began geologic studies in the western Snake River Plain of Idaho in 1955, a project that would occupy him, intermittently, for the rest of his scientific career. These investigations led to the discovery of the catastrophic late Pleistocene Bonneville Flood, for which he was given the Kirk Bryan Award of the Geological Society of America in 1970. His work on the stratigraphy of the basaltic lava flows was important evidence used by Allan Cox to construct a paleomagnetic time scale, which in turn was used to formulate the theory of plate tectonics.

In 1964 Hal was invited to join a Harvard team investigating Early Man sites at Valsequillo in the Puebla Valley of Mexico. This project, which involved seasonal field work until 1973, resulted in geologic maps of the Valsequillo area and in considerable knowledge of volcanic deposits derived from the nearby volcanoes. To the consternation of archaeologists, however, radiometric dates for fossil bones associated with the artifacts, and for overlying volcanic beds, were determined to be about 250,000 years old – much older than the expected archaeological age of 15,000 years – thus posing a dilemma that is still unresolved. Hal traveled to Puebla again in 2004 when work on the Valsequillo project was revived. Because of his Valsequillo work, Hal was invited in 1975 by the National Academy of

Sciences to join a delegation to the Peoples Republic of China dealing with Chinese discoveries of Early Man.

Hal was an active environmentalist. As a member of committees appointed in the 1970s by the National Academy of Sciences, he helped to write several advisory reports on the geologic impacts of surface mining. During this time he testified frequently to the Congress and to legislatures in Wyoming and Montana on the incompatibility of surface mining and preservation of riparian habitats in alluvial valleys. Hal represented the U.S. Geological Survey on the Department's Oil Shale Environmental Advisory Panel from 1976 to



1980. As a result of his efforts, he was awarded a Meritorious Service Award by the U.S. Department of the Interior in 1979. On a local level, Hal was a founding member of PLAN Boulder. His photograph of children playing in front of the Flatirons became the poster image for the Greenbelt and Open Space campaigns.

Beginning in the 1960s, Hal took field photographs as a means of documenting landscape changes, marking the photo points so that the photographs could be accurately repeated later by other photographers. He also repeated many historical photographs for this purpose and was one of the authors of a book on repeat photography published by the University of Utah Press in 1984. When Hal retired in 1987, he decided to combine his flair for photography with his environmental interests and so began a long-term volunteer effort to provide photographs to the Nature Conservancy. After 19 years he had photographed more than 600 Conservancy preserves and had donated more than 20,000 photographs, distributed among all the states. For this contribution, he was given the Conservancy's Oak Leaf Award in 1993, its highest award for volunteer service.

He is survived by his wife of 52 years, Caroline Elizabeth Malde, his daughters, Melissa Ruth Malde and Margaret Jean Malde-Arnosti, Margaret's husband Donald, and their children, Nicholas Anton Arnosti, Nathan Alexander Arnosti and Elizabeth Marie Arnosti.

A memorial gathering will be held at the Nature Conservancy of Boulder on December 22nd, 2007. In lieu of flowers, donations may be made to the Nature Conservancy or Hospice of Boulder and Broomfield Counties.