



IN MEMORIAM

## Fritz L. Knopf, 1945–2015

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He was tall and slim, and many of us remember him in his iconic cowboy hat and boots, leaning against a pickup truck out in the grasslands. Dr. Fritz L. Knopf, senior research wildlife biologist (retired) with the U.S. Geological Survey (USGS) at the Fort Collins Science Center, contributed as much as anyone to our knowledge of the natural history and ecology of the Great Plains, its endemic birds, and the conservation of this threatened landscape. Fritz passed away on October 22, 2015, after battling a brain tumor.

Fritz's long research career was focused largely on understanding how biophysical changes in landscapes influence migratory bird systems, and on ways to translate that research into conservation management and policy. He accomplished this by actively engaging with academics, resource managers, and landowners. His collaborations were distinguished by a mutual trust and respect for people, native bird populations, and the landscapes they share. He attributed his ability to work with and gain the trust of landowners (primarily ranchers on the Great Plains) to his childhood on a dairy farm in northeastern Ohio, where he "actually liked cows." He understood the utility of coming to the conversations without a preconceived negative opinion about the effects of cattle and grazing. Having come to his career during the era when natural history was still an important component of resource management and conservation science, Fritz was fascinated by western history and the history of natural resource conservation. He was quick to relate stories of how the histories of George Bird Grinnell, Teddy Roosevelt, Gifford Pinchot, John Kirk Townsend, and Kit Carson shaped current western landscapes relevant to his research.

In high school Fritz's passion was baseball, and he was the starting varsity pitcher in his freshman year. In 1967 he received his undergraduate degree in biology from Hiram College in Ohio, where his mentor, James Barrow, aroused his interest in behavioral ecology. He "took every biology course they had," but his favorite college course was on the Romantic poets, whose expressions of the spirit of the landscape spoke to him. Although his initial plan was to



become a veterinary student, he decided that he "didn't like the idea of the inside of an animal as much as the outside of an animal." After college he moved west to Utah State University to work with David Balph, a former student of Dr. Barrow, on the behavioral ecology of Uinta ground squirrels. It was during this time that he came to love the Rocky Mountain region, where he was to spend the rest of his life and most of his research focus. In 1969, in the midst of his master's program, he was drafted into the military. He spent time at Fort Ord, California, and at the U.S. Army Research Institute of Environmental Medicine in Natick, Massachusetts, before being discharged in 1970. He returned to Utah State, where he finished his M.S. in wildlife science in 1973. His research on colonial-nesting American White Pelicans on the Great Salt Lake earned him his Ph.D. in wildlife ecology from Utah State in 1975.

Fritz began his career as an instructor in the departments of Wildlife Science and Instructional Development at Utah State (1975–1976) while continuing work on

pelican foraging patterns and their impacts on the fish community in Pyramid Lake. He then worked as an assistant professor in the Department of Ecology, Fisheries and Wildlife at Oklahoma State University (1976–1980). In 1980 he accepted a job as a research wildlife biologist with the U.S. Fish and Wildlife Service (USFWS) at the Denver Wildlife Research Center in Fort Collins, Colorado. He studied riparian bird communities and the importance of riparian systems to biodiversity in the arid West, with a particular focus on the interaction between riparian ecology, riparian birds, and domestic cattle grazing. He transitioned to project leader for nongame and avian studies with USFWS in the newly established National Ecology Research Center, which was later moved to the National Biological Survey and then to the USGS while being renamed the Midcontinent Ecological Science Center and then the Fort Collins Science Center. In 1985, Fritz saw his first Mountain Plover and began what would become a primary focus of the rest of his career. Much of his research on Mountain Plover breeding ecology and population declines (1986–2006) was focused on the Pawnee National Grasslands in northeastern Colorado. This research was expanded across the species' range through collaborative work with graduate students who subsequently became colleagues, continuing their research on Mountain Plovers in Montana, Wyoming, Colorado, California, and Mexico. With this change in focus, Fritz moved from studying an ecosystem (riparian) where avian biodiversity is concentrated in the arid West to ecosystems (grasslands and other arid habitats) that are characterized instead by small numbers of unique and frequently endemic species of birds, of which the Mountain Plover is a key example. In 1996 Fritz was promoted to GS-15 research wildlife biologist, the position he held until his retirement in 2006. Throughout all the name and administrative changes in his professional landscape, Fritz continued to conduct research while also maintaining academic affiliations with the departments of Biology and Fish & Wildlife Biology at Colorado State University, the Department of Environmental, Population and Organismic Biology at the University of Colorado, and the Department of Zoology at the University of Wyoming. In 1999 he received the Outstanding Alumni Professional Achievement Award from Utah State University. After his retirement he continued to work as an ornithological and ecological consultant, mainly as a means to stay in the field and to continue studying Mountain Plovers.

Fritz was prolific in communicating research results. His first publication was in 1969 in the *Journal of Mammalogy*, entitled "Badgers plug burrows to confine prey," and he currently has a paper in preparation with Steve Dinsmore, entitled "Cascading ecological events and declines of Mountain Plovers." His curriculum vitae lists 187 publications, including many in *The Journal of*

*Wildlife Management*, *The Wilson Bulletin*, *The Wildlife Society Bulletin*, *The Southwestern Naturalist*, *The Condor*, *Journal of Field Ornithology*, and *Conservation Biology*. With colleague Fred B. Samson he edited three books: *Ecosystem Management: Selected Readings* (Springer, 1996), *Prairie Conservation: Preserving North America's Most Endangered Ecosystem* (Island Press, 1996), and *Ecology and Conservation of Great Plains Vertebrates* (Ecological Studies, Springer, 1997). In *Prairie Conservation*, Fritz coined what is perhaps the most cited sentence in grassland bird literature: "As a group, grassland birds in general and endemic grassland birds specifically have shown steeper, more consistent, and more geographically widespread declines than any other behavioral or ecological guild of North American species." Fritz also recognized the importance of getting scientific information to those who manage resources and implement conservation, many of whom do not read scientific journals, and his curriculum vitae lists 48 papers presented at scientific meetings and societies, 80 seminars and lectures, and 32 presentations at technical conferences and workshops. Many of these were presented to universities, federal management agencies, and conservation organizations.

His services to professional societies were many, including membership or chairmanship of conservation and publication committees for the Wilson Ornithological Society, Wildlife Society, Society for Conservation Biology, and Cooper Ornithological Society (on whose board of directors he served, 2006–2008). He received the Douglas L. Gilbert Award for outstanding professional achievement in wildlife science from the Colorado Chapter of the Wildlife Society in 1987 and was elected a Fellow of the American Ornithologists' Union in 1995. Over the years, he served on scientific and technical advisory committees for Colorado Nature Conservancy, Colorado Natural Heritage Program, Platte River Whooping Crane Maintenance Trust, and Rocky Mountain Bird Observatory.

Throughout his career, Fritz was a valued mentor, colleague, and friend to many scientists. Among the most lasting impacts of his work was his dedication to help build the careers of young biologists. The fields of ecology and conservation of western riparian and grassland birds and of shorebirds, among others, have benefited from Fritz's scientific contributions and from his support and encouragement of students and colleagues who are continuing his legacy. His desire to pass on that legacy inspired him to establish the Fritz L. Knopf Doctoral Fellowship Program in Avian Ecology and Conservation (<https://mikewunder.wordpress.com/fritz-l-knopf-fellowship-program/>) to support graduate training at Oklahoma State University, Utah State University, University of Colorado Denver, and Iowa State University. His generous donation will support the doctoral training of promising students in large-scale

topics in avian research and facilitate the formation of a network of peers anchored by the Fellows at these institutions as a means of supporting their professional development. When Fritz was asked what nugget of wisdom he would like to give to a student receiving this fellowship, his response was, typically, "Look for a crack in the door and blast through it!" Donations can be made to supplement funding of the program in Fritz's honor.

Fritz enjoyed the outdoors in any form. He spent hours tending the acres of his home "sanctuary" in Fort Collins, where he documented and shared sightings of the birds he observed. He enjoyed trips to spend time on the prairie that he loved, visiting with friends, and greeting many

sunrises. Fritz is survived by his wife, daughter, two sons, sister, and two granddaughters.

Those of us who knew Fritz will think of him every time we stand in a sea of prairie grass and will remember his lyrical words:

*"Wind muffles sounds on the prairie.*

*But when wind stills, birds provide the sounds of the prairie.*

*The consonance of bird songs speaks to the health of the grasslands that once stretched, unbroken, to every horizon."*