REMEMBERING

Dr. Fred H. Wagner

Director of the Ecology Center

1975-1998

Dr. Fred Wagner, professor emeritus of Utah State University's Quinney College of Natural Resources and director of the Ecology Center for 23 years, passed away on February 28, 2021.

Frederick Hamilton Wagner was born in Corpus Christi, Texas on September 26, 1926. By the time he reached high school, Fred had attended 13 schools in four states. His father's work as a federal architect meant that the family moved annually—to a house on the beach in Corpus Christi; living among big ranches and big hats in Pecos; and next to a vacant lot of mesquite trees in San Antonio. When he was older, Fred joined his father hunting, fishing and camping in the Texas backcountry. An early interest in medical science pushed Fred to focus on biology as a teenager, but when he graduated from high school (and despite considering himself a 'city boy') he found a job as a ranch hand in west Texas.

He spent a year living and working outdoors, on horseback virtually daily, but he found himself relating more to wild plants and animals than he did to pushing around livestock. After a brief stint in the army, Fred moved to Las Vegas to work on the Desert Game Range—the largest federal wildlife refuge in the lower 48 states. For the better part of a year he assisted the refuge biologist in research on desert bighorn sheep. He then moved to Dallas and began a degree program at Southern Methodist University (SMU).

"At that point I'd learned that it was possible to work for a living in the field of wildlife," he said in

a 2008 interview. “I’d learned that while working on the refuge, so I majored in biology.”

It was at SMU that Marilyn Christensen first captured Fred’s attention. He arranged to enroll in the same anatomy class that she signed up for, and ultimately, she became his wife and love of his life.

A professor (Lloyd Shinners) encouraged Fred to pursue graduate work and in the fall of 1949, after graduating SMU, he moved to the small Wildlife Department at the University of Wisconsin, Madison. There was, in fact, just one faculty member in that department—Aldo Leopold. Under the guidance of Leopold, Fred pursued a dual PhD in wildlife and zoology, and minored in plant ecology, becoming an ecologist before many people were even familiar with the term.

In Madison, sons Gregory and Jeffrey were born. Fred loved learning and knowledge and was a man of high moral and ethical standards, said his son, Greg. “He modeled, and expected of his sons, integrity and honesty. He had a good sense of humor, and enjoyed a good laugh. Home life was the comfortable, ‘father knows best’ lifestyle. He taught his sons to love and appreciate nature.”

Fred became friends with a fellow graduate student, Allen Stokes, who was a few years ahead of him in school. (Stokes dated and married a woman who worked as a secretary for Leopold, Alice). When Stokes started job hunting, he showed Fred an advertisement for an opening in the Wildlife Department at Utah State University but expressed doubts because he had never been west of the Mississippi river. Fred assured him he’d like the West and urged him to apply. Stokes was hired at USU.

Six years later, Stokes needed a sabbatical replacement for a year. He called Fred in Wisconsin and asked him to temporarily teach his courses. Fred complied. In the fall of 1961 another position opened at USU and a newly graduated Fred was hired. From that point on he spent the entirety of his professional career at USU’s College of Natural Resources.

“Natural resources were simpler in those days,” said Fred. “[At USU] we thought about managing wildlife to produce wildlife species for hunters and fisheries for fisherpersons. The Range Department essentially was oriented to managing rangelands for livestock. And the Forestry Department here … thought it should teach traditional foresters. It had a faculty made up of dendrologists, forest managers, teaching a traditional program in forestry [even though] Utah was not a significant timber-producing state.”

Fred Wagner and sons Jeff (L) and Greg (R).

In the early years, Fred directed his research toward wildlife population ecology in the high desert of the Great Basin, specifically Curlew Valley. Large populations of black-tail jackrabbits cycled over a ten-year period in the desert near

Snowville, Utah. Fred's initial research was directed toward understanding the dynamics of that cycle. He then moved to the major predator of black-tail jackrabbits—coyotes. The jackrabbits and coyotes were linked in the decadal cycle; jackrabbits rising to a high density, coyote increasing in parallel eventually to the point where they could suppress jackrabbits, and then coyotes driving the rabbit population down. With a team of graduate students, Fred expanded research to other aspects of the fauna in Curlew Valley: badger, antelope ground squirrel, and raptors.

One of the 5,000 elk that starved to death in Yellowstone during the winter of 1988-89. Note how the animals, in their search for food, destroyed the tall willows along the banks of the Gardiner River. Photo by Charles Kay.

Fred applied for a grant with the Fish and Wildlife Service in Denver. They offered the grant and assigned him to work with Fred Knowlton, who at that time was a USDA Wildlife Services employee studying coyotes in Texas.

"After I got to know Fred, I told him that he was a single person working on a difficult project and I was a single person working on a difficult project, and that he ought to move to Utah State and we would collaborate in our coyote studies," he said. And Fred (Knowlton) did, and that was the beginning of the predator studies and the predator unit here at Utah State University."

When Thad Box became a junior member of the faculty, he said his job was to teach. He said he was glad to work with another native Texan, as he and Fred came on board at about the same time. The Agricultural College of Utah became Utah State University and the School of Forestry became the College of Forestry, Range and Wildlife Management.

"After the USU College of Natural Resources was formed, about a half century ago, President Glen Taggart offered me the natural resources' Dean's job. I told Fred I would accept if he would be my Associate Dean. We were different people who respected the other. For the last half a century Fred Wagner was my colleague and closest friend. If he thought something I was doing harmed our people, our program or our resources he told me in no uncertain terms. When we went hunting or fishing, we spent less time hunting the prey than looking for ways our science could improve the land and the creatures that use it. He worked hard, played hard and expected others to do the same."

Sons Greg and Jeff started downhill skiing in the mid 1960s, and their parents took it up shortly after. Fred skied almost every weekend at Beaver Mountain and skied at the Salt Lake City area resorts, as well as Aspen and Sun Valley. Because of skiing, he looked forward to winter, Greg said.

In the late 1960s Fred secured a partnership with the International Biological Program (IBP) for USU's College of Natural Resources. This included federal efforts to identify biomes and to task university investigators to study each one. The college collaborated with two dozen institutions at different desert sites in the Intermountain West, including Curlew Valley. Fred eventually became director of the Desert Biome Program and was more broadly involved in international desert research, including a project on the fringe of the Sahara in North Africa. He also collaborated with desert researchers working in Israel, India, Australia, and Turkmenistan, opening opportunities for foreign travel to different parts of the world and offering a chance to travel for both himself and his family; they joined him on trips to Tunisia and Australia.

"We were looking at whether deserts elsewhere in the world were different than ours, or whether one could propose any scientific generalities that apply to deserts," he said. "And in fact, we did. We saw similar behavior of the vegetation, similar behavior in the evolutionary directions of the animals, parallel principles operating in all of the arid lands of the world where the plants and animals have evolved to cope with those kinds of conditions."

In the 1970s Fred's ecological research led to an important development: an interest in the interaction of policy and science. With his work in predator control, he began to notice how policies did not always reflect scientific realities. He taught a course in big game management, and organized student trips to Yellowstone National Park to observe both animals and management of national parks. He observed how over the course of just a few years a change of management at Yellowstone spurred a reversal of 40-year-old policies, one that had seemed to be well supported by science.

In 1975 Fred became director of the Ecology Center at USU. The Center was created in response to a need at the university for more interdisciplinary, interdepartmental collaboration, and to support education and applicable science that had an ecology emphasis. With his focus actionable science—science that can inform management and policy—Fred worked long and hard to make a difference at the policy interface, said Nancy Huntly, current director of the Ecology Center.

In the mid 1980s Fred met Charles Kay, who was doing research in Yellowstone. Fred persuaded

A research expedition at Yellowstone National Park

Kay to come to USU for a PhD, and to expand the work he was doing in Yellowstone. Fred found funding for a five-year research project and increased his interest in the policy/science interaction there. Fred was asked by Jim Teer, president of the Wildlife Society, to chair a study of wildlife policies in American national parks. This eventually led to a book published in 1995, Wildlife Policies in U.S. National Parks.

Fred and Marilyn Wagner, Charles (Chuck) and Lou Gay, and their daughter on a visit in Krakow, Poland.

In 1982 Richard (Dick) Mueller came to USU as an Ecology Center Associate. He attended monthly seminars led by Fred, who did everything from set up the carousel projector to lead discussions. The seminars were important, said Mueller. They brought in prominent speakers from all over the world to share perspective, and brought together faculty from all over campus to facilitate communication across campus … and that legacy endures still today. Fred worked hard to create a community of ecologists across campus, he said.

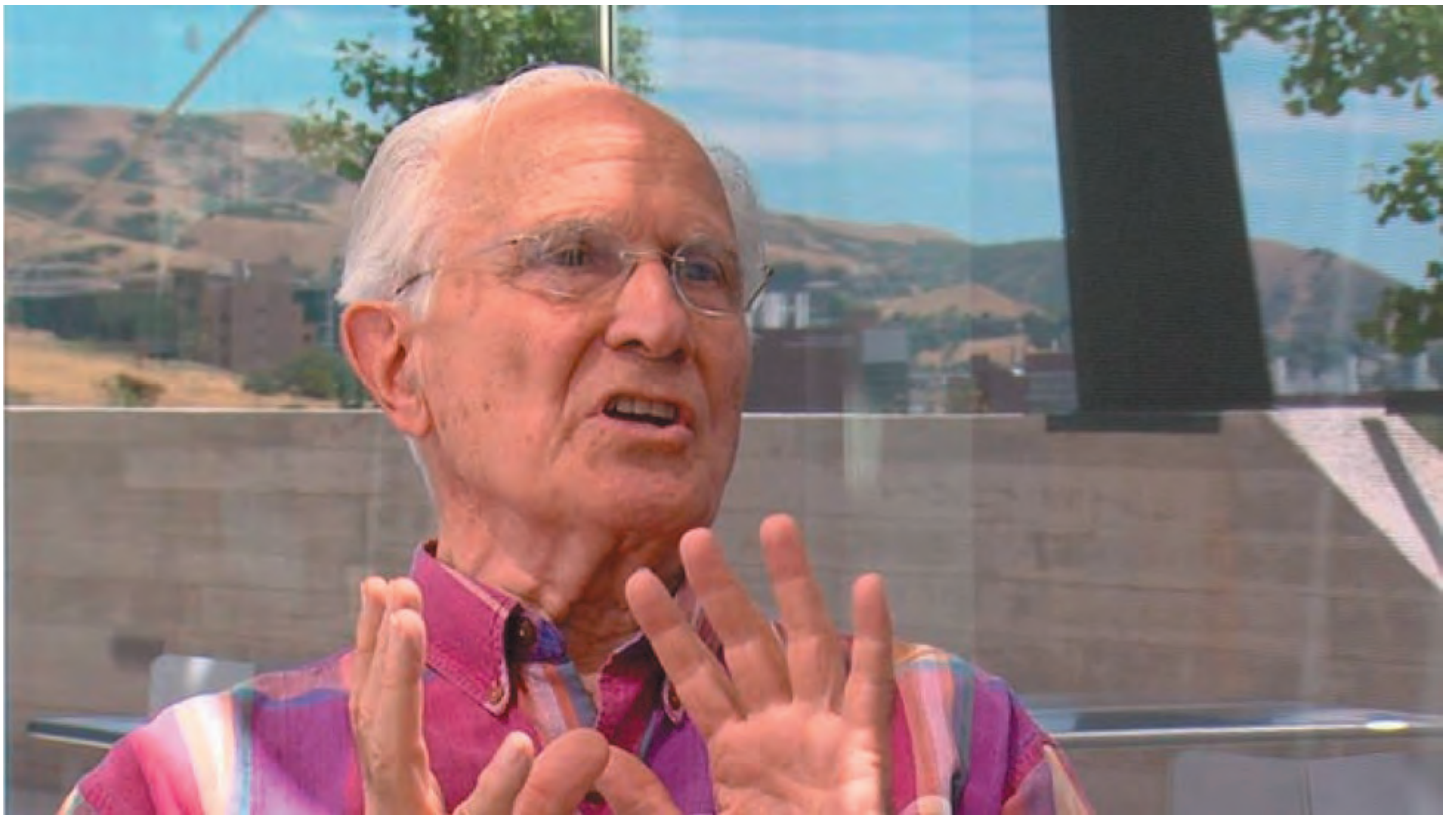
Marilyn and Fred Wagner in front of Old Main on the USU campus.

"Fred was at the forefront for advocating for real science in the National Park Service, especially Yellowstone," said Mueller. "And he was also at the forefront of climate change impacts."

In 1986 Chuck Gay was returning to USU after three years working on the college's Range Livestock Development Project in Morocco. He interviewed with Fred who shared his experience in Tunisia.

"I came into the Dean's Office in 1989; that is when our relationship began to develop from collegiality to friendship," said Gay. "Fred was a consummate scholar and was in the office every Saturday. I returned from Morocco with considerable data from studies conducted there that needed analyzing and publishing. We soon learned that we shared a great passion for the arts."

Fred and Marilyn were great friends with Manon and Dan Russell and Kathryn Wanless. Gay and wife Lou and were soon invited to join as guests for group dinners and the symphony or opera in Salt Lake City. They were active with the Logan Chamber Music Society where they found many friends and colleagues.



Fred also pulled Gay into the Logan Men's Club, a "town and gown" organization, and a poker group composed of USU faculty members. Fred was a very dependable member of these groups until just before his passing.

"Fred was a joy at poker club," said Gay. "He came to have fun and never disappointed. His sayings of, 'I never was hurt 'till then,' when someone took his money, or, 'ten miles of railroad,' (from the transcontinental railroad) whenever a ten card was dealt, were memorable."

Michael Wolfe said that Fred's scientific contributions lay not in day-to-day experimentation, but rather with his strengths in analyses of existing data on various natural resource issues, smithing these into publications and presentations that were eminently understandable to both scientific and lay communities.

"[Fred] was gifted in that he could both write and speak eloquently and convincingly to both of these audiences. Long before computer-based 'meta-analyses' came into vogue he was engaged in these kinds of inquiries. In what now seems almost prehistoric, I recall reading some of the drafts he wrote in fountain pen on yellow legal pads for upcoming publications. Subsequent typescript editions remained virtually unchanged from the verbiage of the originals.

"I particularly admired his ability to develop a historical context to the contemporary natural resource issues that he was researching," said Wolfe. "These talents were recognized throughout his career and exemplified by numerous invitations to serve as keynote speaker at national and international conferences as well as appointments to serve on prestigious panels and advisory boards such as that dealing with wild horses and burros. Fred's research and publication focus lay at the intersection of science and natural resource policy formulation, frequently involving controversial issues such as predator control and the livestock industry, management of feral equids, climate change, and most notably ungulate management in Yellowstone National Park."

Fred retired in 1998 after 37 years of service. The director for the National Center for Ecological Analysis and Synthesis in Santa Barbara, California, invited Fred to write a book on Yellowstone National Park as a fellow to the Center. He published Yellowstone's Destabilized Ecosystem: Elk Effects, Science and Policy Conflict, a work that will "likely have an impact on discussions of wildlife management in national parks for years to come," said Wolfe. The book was a recipient of The Wildlife Society's Publication Award for Outstanding Book.

After Congress passed the Global Change Research Act instructing an assessment of the potential effects of climate change on the nation, Fred was asked to coordinate the assessment in the Rocky Mountain/Great Basin region.

“First of all, we looked at the entire weather record of all weather stations in the nine state intermountain regions to ascertain whether or not there had been climate change during the 20th century—which of course we found there was warming,” he said. “So, we said, ‘All right, given these increases, what are the implications for water resources in the West, agriculture in the West, natural ecosystems in the West, outdoor recreation and tourism in the West?”

The study was completed and results published in 2003, which led to Fred’s involvement in a variety of projects addressing global warming. The book Climate Warming in Western North America: Evidence and Environmental Effects was published in 2006.

“Fred was a figure who played a defining role in making the USU’s College of Natural Resources one of the premiere academic institutions across the globe,” said Wolfe. “It was my grateful privilege to have known and worked with him.”

“Fred and Marilyn were dear to Lou and me. They opened so many doors for us, and made our lives rich,” said Gay. “I enjoyed a 30-year career at USU, made special by Fred. He was my champion as I worked up the ladder of success and responsibility. As we go through life, we have many acquaintances, but few very special friends. I think of Fred often and the experiences we shared.”

Marilyn passed away in 2018. As she declined with Alzheimer’s, Fred took care of her at home until she required more intensive help. After admission to a nursing facility, Fred sat with her every day, providing her with company for the three years she lived in the facility until her death. The staff often commented about his dedication and commitment.

“That was Fred,” said son Greg.

“I spent my career in science, both basic and applied. I value it tremendously,” Fred said. “And if I had to do it over again knowing what I know now—I wouldn’t do anything different. I think science is one of the great accomplishments of the human intellect. I adopt as a personal principle that I don’t advocate policy because I fear that if I do it will raise some concerns about the objectivity of my science and trust in my science. So, my view is that science is a service to policy. It provides an environment of fact, knowledge and information that enlightens policymaking. It’s up to the policy makers and the politicians to make the policy decisions, hopefully in the bright light of objective scientific knowledge.”