Tueller, P.T., C.D. Beeson, R.B. Tausch, N.E. West, and K.H. 1979. Pinyon-juniper woodlands of the Great Basin: distribution of flora, vegetal cover. USDA Forest Service Research Paper INT 229, U.S. Dept. of Agr., Ogden, Utah. 23p.

Tueller, P.T. 1975. The Natural Vegetation of Nevada. Mentzelia 1:3-28.

U.S.D.A. Soil Conservation Service. 1977. General vegetative map of White Pine County, Nevada. Soil Conservation Service, U.S. Dept. of Agriculture, L/MLRA D-28 3/77 HGA, 12p.

West, N.E. 1983. Temperate Deserts and Semi-Deserts. Edited by N.E. West, Elsevier Scientific Publishing Co., Amsterdam, Netherlands.

Joseph H. Robertson—Range Scientist Pioneer

Barry Davis

Dr. Joseph H. Robertson, or "Dr. Joe", as his former students call him, is a teacher, a scholar, researcher, and humanitarian. He was born in Carrington, North Dakota, on January 10, 1906, to Mabel M. and William Robertson. In 1914, Joe's father died, leaving Mabel with Joe, age eight, and Gertrude, age two, to rear on her own. The family moved to Beaver Crossing, Nebraska, and then on to Oak, Nebraska, as Joe's mother struggled to raise her family. The difficulties she had to overcome as a woman and a single parent left Joe committed to fair play.

When Joe was 14, his mother, with Gertrude in tow, left for a job as a housekeeper. Joe remained in Oak with his aunt. When his mother returned six months later, Joe had finished the nine dollar Farmer Burn's correspondence course in wrestling and could throw every boy within two years of his age. He had also taught himself several other masculine skills such as smoking, swearing, and squandering money. He had earned more money than his mother while she was away, yet it was all gone.

The Oak school had only ten grades. When Joe was half-way through the tenth grade, his mother advertised for work in an area with a full-term high school. The family moved to a vacant farm four miles from Alexandria, Nebraska, where Joe jogged to school the remainder of the school year. In his junior year, his landlord supplied a retired saddle horse. When the landlord decided that Joe should quit school and work the farm full-time with a view to partnership, Mable found another vacant "fixer-upper" home two miles from Alexandria, without cows, chickens, or horses.

Joe grew quickly and by age 16 he weighed 162 pounds. He loved sports and was caught up in the mid-western basketball mania. He excelled in both football and basketball. Having no money for football shoes, Joe nailed cleats onto a pair of button shoes.

Early in his senior year of high school, Joe played a basektball game while ill with the flu and subsequently was sick in bed for several weeks. Then against his doctor's orders, he played in three games during the state basketball tournament. He left the last game extremely sick with numbness in his legs. He developed a heart murmur and never fully recovered from this episode. It changed his entire lifestyle. Gone were the days of boisterous and rowdy behavior. Joe then concentrated on his studies and graduated as salutatorian of his class.

Due to Joe's interest in agriculture and his need for a relatively sedentary lifestyle, he entered the University of Nebraska to study agricultural engineering. A bank failure wiped out his savings and he had to return home to earn money to attend school.

After failing to earn sufficient money to return to the university at Lincoln, he registered at Peru State Teacher's College to obtain a teaching certificate. Teaching seemed the most direct route to earn money to return to engineering school. After receiving his certification, Joe taught a year at a rural school two miles from Oak, with 19 students in grades one through eight. Because the students had to pass a series of difficult tests to enter the ninth grade, there was a backlog of older students in the eighth grade. The teacher previous to Joe had not been much of a disciplinarian. As vouched for by his college students forty years later, Joe had little difficulty in solving the discipline problems and eliminating the backlong. Now, with fewer students to teach, the school refused to raise his salary.

The following fall Joe found a new job as principal, custodian, and teacher of a three-teacher school at Cadams, Nebraska. Joe taught grades 7 through 10 to allow the regular principal to run for county office. When the principal lost the election, Joe returned to Peru to complete his A.B. in education and science in August 1928.

Three themes were to characterize Joe's teaching throughout his career. First, as a teacher, Joe never failed to take advantage of a student's inquisitiveness or to teach lessons from real situations as they were discovered.

Secondly, Joe did not stress rote memorization. He wanted students to think and reason and he often asked questions that had no single right answer to see what a student would do with it. Joe would teach lifelong processing skills such as creativity and problem solving in a way in which few other instructors were able to do.

Thirdly, Joe has a tremendous sense of "fair play" which influences everything he does both privately and as a teacher.

During Joe's last summer at Peru, he was greatly influenced by Dr. A.E. Holch, Professor of Botany, who had recently taken his degree under Dr. J.E. Weaver at Nebraska. It was Dr. Holch who planted the interest for ecology with Joe and Dr. Weaver who was eventually to train Joe as a plant ecologist. It was also Dr. Holch who helped Joe get a teaching job at Saint Anthony, Idaho. During his second year at Saint Anthony, he had a pretty and brilliant biology-drama student, Yerda Mason, whom he made a lab assistant and then four years later, his wife. After two years teaching in Idaho, Joe accepted an assistantship in botany at the University of Nebraska where he received his M.S. degree in 1932. For the following three years he taught biology, ecology and comparative anatomy of vertebrates at Wisconsin State College at River Falls. After the third year his contract was not renewed because a Ph.D. was required for tenure.

A job came along in the form of an assistantship at Oregon State Agricultural College, Corvallis, Oregon, where Joe was to begin work on a Ph.D. In cooperation with the Grazing Service, Oregon State was doing range research at the new station near Burns and was to pay Joe $120 per month for six months each year. Complications with the project's finances caused Joe to leave Oregon for an offer of an assistantship under Dr. J.E. Weaver in the Botany Department of Nebraska.

After completing his doctoral degree and writing his thesis on prairie drought for Ecological Monographs, Dr. Joe Robertson accepted a job with the Intermountain Forest and Range Experiment Station in January of 1940. Joe was in charge of the Ruby and Santa Rosa substations in Nevada and was directed towards rehabilitation of the Great Basin ranges.

In 1940, there were only three successful stands of crested wheatgrass in Nevada—all located on private land. By many ranchers, Nevada was regarded as a hopeless desert that offered little chance for artificial seeding. Being assigned to Nevada to conduct research on range improvement by the Intermountain Forest and Range Experiment Station was similar to being sent to Siberia by the czar. Early in his career in Nevada, Dr. Robertson was challenged by the manager of a large Elko County ranch with a report authored by Arthur Sampson that indicated artificial seeding on National Forest lands had only a chance of success on limited high elevation rangelands. It was a real challenge to conduct revegetation research in a hostile physical, biological, and social environment while living in a Forest Service cabin where the yard was fenced with hardware cloth to keep kids in and rattlesnakes out.

One of Dr. Robertson's greatest achievements was the testing of exotic plant material that became available during the 1930's from Russia, for adaptation to big sagebrush rangelands. Dr. Robertson established hundreds of variety trials across the Lahontan basin where the sagebrush was grubbed by hand and the plots fenced with material picked from ranch junk piles and roadsides.

During the next five years, Joe researched and developed the thesis that brush control and seeding on Nevada National Forests had a limited future as compared with private and grazing service (BLM) lands. He proposed that through cooperation and agreement the gain in grazing capacity on lower lands could be used to allow National Forest allotments to rest and recover naturally. In 1947, when the University of Nevada, Reno advertised a position that would allow development of a range curriculum, Joe left the Forest Service. He felt that he could blend his teaching and research experience into just what the university wanted.

In addition to teaching a series of range courses, he also taught agronomy. He taught at least one course to most students in the College of Agriculture during this time and became well known for asking a lot from his students. When Joe first arrived at the university, he read the school catalog that stated that average work was to be given a "C" so he began to give a preponderance of "C's", a few "A's" and "B's" and some "D's" and "F's". The other instructors, for the most part, were giving all "A's" and "B's" and the students liked the latter grading system much better. In 1951, a petition was signed by many students against Dr. Robertson and sent to the president of the university. Dr. Robertson was deeply anguished by the claims that he taught at a graduate level; that he did not like the students; and that he did not grade fairly. After a summer of introspection, Dr. Robertson stuck by his guns on all counts other than developing a new grading system. His grading system was to be well remembered by his students.

He would give each student a secret number. After each test, he would post a numerical score, not a letter grade, by each number so the students could see the distribution of grades. Each student had two days to contest the score. After the term Dr. Robertson would give a letter grade based on a normal distribution of scores. He would continue until the day he retired to give very few "A's" or "B's".

The issue that hurt him most was the claim that he did not like his students. Nothing could have been further from the truth. He has always been exacting of students that did not give their best; but he very much enjoyed and spent lots of time with those student who worked hard.

Dr. Robertson was not so much a teacher of facts as he was a teacher of creativity and thought processes. Because of his insistence of honesty and fair play, he has become a yardstick of morality for many of his students. As they discuss past grades and courses taught by Dr. Robertson, they do so with pride and fondness.

Throughout his career, Dr. Robertson has remained an active questioner in university seminars. His acidic style of questioning has endeared him to few speakers. His questioning and teaching style reflect a form of graduate level education that was common earlier in this century and now is all but lost from the university scene.

When Joe took the job at the university he was told that it would be a teaching job only, but he continued to do research both in range management and in agronomy. Much of this research was on seeding trials. He has published over 60 periodicals, bulletins, handbooks, editorials, and reviews.

From a purely scientific point of view, one of the more outstanding publications of Dr. Robertson's career was the article "Artificial Reseeding and the Closed Community" published in Northwest Science with C.K. Pearce in 1945. In this paper, the authors pointed out why cheatgrass *(Bromus tectorum)* effectively closed plant communities to the establishment of perennial grass seedlings. This currently is common knowledge to range management students, but at the time represented a major application of ecological theory.

As a charter member of the Society for Range Management, he served on the SRM program committee twice and chaired the joint committee that published "Pasture and Range Research Techniques". He also served on the editorial board of the *Journal of Range Management.* In 1972, he received SRM's Oustanding Achievement and Service Award. He co-organized the SRM's Nevada Section and is a charter member of both the Nevada and East Africa sections. He was the president and vice-president of the Nevada section and received the first Range Man of the Year Award from the Nevada section in 1961. In 1977, Dr. Robertson received the sixth Frederick G. Renner Award.

The Robertson-Fleming Scholarship was established in 1971 to honor both men for their contributions to the range program and to the University of Nevada. That same year he received the Faculty Award of Merit and in 1975, the Distinguished Service to Agriculture Award.

In 1962, Dr. Robertson started promoting range management at an international level as a consultant to the Government of Argentina. Then in 1965, Dr. Robertson took sabbatical leave to go on a foreign assignment to Kenya as a member of USAID team to establish a range curriculum at Egerton College in Kenya similar to the one he helped develop at the University of Nevada. Although guards with bows and arrows were hired to protect the school's experimental forest, Joe felt safer in Kenya than in Reno. The guards were hired to keep the Masai warriors from starting fires to destroy the trees and make more grass for their cattle. At one point, Joe placed his hat on a shrub and asked the guards to shoot it with their arrows. After they all missed, one warrior shrugged and stated that they could only hit moving targets.

Egerton College had 14 diploma-level range management students during the first year and now has about 25 graduating degree students each year. Many earlier graduates now hold important positions in resource management in Kenya and several recent graduates are currently enrolled in advanced degree programs in colleges throughout the western United States. Dr. Robertson found the African students to be exceptionally capable and feels that Africa has the potential, through its people, to be a great world power.

Joe returned to Reno in 1967 to wrap up his research and finish his career, concentrating on his teaching. When he retired in 1971, he and Yerda and daughter Roxana headed for another overseas assignment. This time it was to work for the Development and Resources Corporation, a private company under contract to the Shah of Iran. He was the revegetation specialist on a five-person team that was to develop a watershed rehabilitation plan and begin work with a core group of Iranian engineers and 1,600 local laborers on the Dez watershed. This watershed, like most of the watersheds in Iran, had been severely overgrazed and eroded. The engineers were to supervise the work and receive the necessary training to become project leaders on similar future watershed projects.

Shortly after the first year's planting was completed, Joe contacted hepatitis. Upon recovering and returning to the project, Joe found that the establishment and survival of almond trees and grass seedlings were spectacular after the first growing season but that the local sheep and goats were destroying them through uncontrolled grazing. The team was unable to stop the grazing and the plan was not implemented after that. He and his famly returned home in 1973.

Dr. Robertson was the Acting Assistant Director for the Nevada Agriculture Experiment Station in 1975 and the Acting Associate Director of Resident Instruction of the College of Agriculture of UNR the following year. In 1976, he also completed the Marlette-Hobart Watershed Survey.

In 1988 Joe was acknowledged for his activist role in bettering our human environment at a banquet given in his honor and a proclamation by both the Mayor of Reno and the Governor of Nevada designating May 31, 1987, as Dr. Joseph H. Robertson Day.

In retrospect, the late 1930's were a period of rapid change in the mangement of sagebrush rangelands. The United States Forest Service assembled a group of young scientists in the Intermountain Forest and Range Experiment Station that had a huge impact on these changes. This group was the second generation of Intermountain range scientists following the Sampson, Jardine, Forsling era. They have been referred to as the "Young Lions" of the sagebrush and included A.C. Hull, Jerry Klomp, A.P. Plummer among others. These dynamic young men had the strong leadership of Joe Pechanec and the advantage of the experience of George Stewart. J.H. Robertson was a rebel in this group of rebels and his career accomplishments left him standing tall in a group of range management giants.

Indeed, Dr. Robertson's many accomplishments in Nevada make him a true range pioneer. His life and deeds form a legacy of which we can all be proud.