

Dr. Paul Weyerts: A Progressive Trans-Pecos Educator and Rancher

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The Society for Range Management and Western universities that offer range management curricula are concerned about training future range managers drawn from an increasingly urban society. This article recognizes an individual of diverse qualifications who has demonstrated the ability to use past and present land use experience to direct students. The need is genuine since few students of this generation understand a ranching operation, economic pressures, or the philosophy of western ranchers. As more students from urban areas enter the field of range management, it is important that educators have practical experience in the techniques and economics of vegetation and livestock manipulation.



Dr. Paul Weyerts—educator, rancher, and veterinarian.

Paul Weyerts was born and raised in Alpine, Texas, a small southwestern Texas ranching community near the big bend of the Rio Grande River. After graduation from high school, he enrolled at Texas A&M University in veterinary medicine and earned the DVM in 1952. He returned to Alpine as a practicing veterinarian, serving ranchers in Brewster, Jeff Davis, Presidio, and Pecos counties. However, after 3 years of practice and difficult times, he became a part-time instructor at Sul Ross State University in Alpine. Wishing to expand his knowledge of plant resources and dietary needs of livestock, he began work toward the Master of Science degree at Sul Ross, under Dr. Barton Warnock, a noted Trans-Pecos botanist, and received the degree in 1962. He accepted a full-time appointment in 1965 at Sul Ross, teaching courses in range management, animal health, and biology. He later took a leave of absence and earned his PhD in range nutrition in 1973 at the University of Wyoming. Weyerts now serves as the Director of Animal Health Technology, within the Range Animal Science Department at Sul Ross State University.

In addition to teaching and a part-time veterinary practice, Weyerts and his wife, Beverly, own and operate two ranches in

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Editor's Note: The Trans-Pecos is a portion of West Texas associated with the Pecos River and includes the counties of Jeff Davis, Presidio, and the western portions of Brewster and Pecos.

the Alpine area. The old Weyerts Ranch, located 15 miles northeast of Alpine, was purchased in 1943 and stocked with cattle. For many years it has served as an experimental unit for Sul Ross graduate students studying range and animal science. The ranch had no permanent water sources, so the family installed rock catchment dams. The dams failed to hold water, and with federal cost sharing a series of wells were drilled in the 1940's and 1950's. Water was pumped to a storage tank which now supplies eight watering outlets in six pastures.

The ranch began to deteriorate in 1947 because of dry years and over-grazing. After returning from Texas A&M in 1952, Weyerts encouraged his father to reduce livestock and begin an



Rock dams used to slow water flow and trap sediments. Note stands of black and sideoats grama on uphill side.

improvement program to slow water flow and reduce soil loss. He suggested a large ditch to channel runoff onto a stand of tabosagrass (*Hilaria mutica*). The family agreed and the 0.7-mile ditch became known as "Weyerts Folly." Many said it would never work, but it did, and the practice is now commonly followed by ranchers in the area.

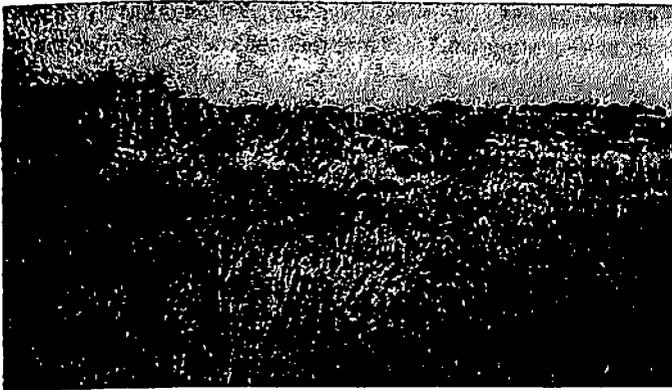
Below the ditch and at other locations on the ranch, rocks, refrigerators, old cars, and "jackrabbit fences" were used to slow water. The make-shift dams trapped sediment and litter. The increased soil moisture of the uplands currently supports stands of black grama (*Bouteloua eriopoda*) and sideoats grama (*Bouteloua curtipendula*).

Total forage production at the ranch had increased by 1962, but gully erosion in the form of head cutting and backwashing had accelerated in major drainages. In an effort to acquaint students in range management with the problem, Weyerts began a series of field trips and demonstrated the effects of over-grazing. The students became interested in the problem and wanted answers to questions about gully erosion. Under Weyert's supervision,

they cemented rocks from the bottom of the wash to the upper edge. During the field trips, students had observed rock dams and noted their ineffectiveness when water undercut the structure. To retard water movement between the soil and the dam, a cement lip was poured from the top of the structure out over the soil surface. Although many of the dams are still effective in preventing gully erosion, the project was not a complete success in major washes.

In the following years, Weyerts emphasized in class the need to try new, inexpensive methods for slowing gully erosion. Students were given class projects and asked to develop new ideas on erosion control. After much discussion, it was decided to try an "obstacle approach." A matrix of posts, cable, and tire casings, resembling a forward perimeter in Vietnam, was constructed in the wash and over the banks. The structures have proven effective in many areas and an excellent stand of perennial grasses now occupies the bottom and sides of the wash.

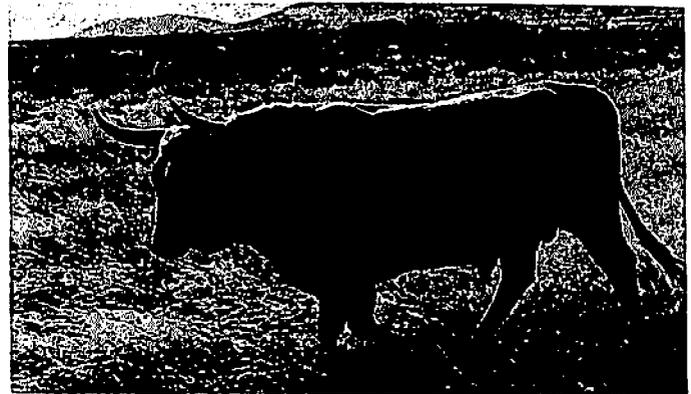
Perennial grasses responded to increased soil moisture on the uplands, as did tarbush (*Flourensia cernua*), mesquite (*Prosopis glandulosa*), creosotebush (*Larrea tridentata*), whitebrush



A matrix of posts and tire casings attached with cable has effectively slowed water movement. The bottom of the draw now supports a dense stand of perennial grass.

(*Acacia constricta*), and littleleaf sumac (*Rhus microphylla*). To further increase grass production and decrease competition, a shredder was pulled over tarbush and creosotebush. Students set up permanent transect lines in treated and nontreated areas and monitored brush and grass canopy cover. The results were not statistically significant, but forage production, carrying capacity, and income did increase in the following years.

Weyerts provided practical experience for students in his range improvement class by root plowing, chiseling, and discing to control undesirable woody plants. A cost-benefit analysis was conducted for each treatment, assuming payments scheduled over 5 and 10 years. The results indicated that such improvement practices were not feasible for a small ranching operation. So an integrated program of fire and herbicide application was initiated in 1973. A graduate student, under Weyerts' supervision, monitored soil moisture, temperature, and forage production where whitebrush and littleleaf sumac had been burned and a variety of herbicides had been applied to control regrowth. They found that fire and low rates of picloram (Trade name Tordon¹) and dicamba (Trade name Banvel¹) effectively controlled shrubs while increasing grass production. They also found, as have others, that fire is a destructive force when used in periods of below-average precipitation.



Longhorn bulls are used in pastures where heifers are segregated from mature cows.

Over the years, Weyerts observed cattle actively utilizing burrograss (*Scleropogon brevifolius*) in the winter months when plains brome (*Setaria macrostachya*) and the grammas were abundant. A graduate student was assigned to determine the crude protein content of the species over 2 years. The results indicated that burrograss, a species rated as unpalatable and of low nutritional value, stored more protein above ground in the winter and spring than the more desirable species. With this in mind, he began stressing the need for smaller pastures and intensive grazing management. With the help of professionals and student input, Weyerts developed a grazing system much like the South African high-intensity-low-frequency system. He hired students to cross-fence pastures and concentrated livestock in a single pasture for 1 to 3 weeks, depending on available forage and weather patterns. Pastures were rested for at least 6 weeks—longer in the growing season—to ensure seedhead development. The system worked well for Weyerts on the small ranch. He attributes the success of the system to flexibility, stating: "No one grazing system can be applicable to all climatic and topographic situations in the West, and a grazing system will not work unless the range manager is constantly changing to meet the demands of vegetation and livestock."

Weyerts has an on-going program to evaluate the effects of early pregnancy on first-calf heifers and future weight gains of the mother and calves. He has found that heifers bred to longhorn bulls have fewer calving problems, respond quickly to re-breeding, and gain weight if first calves are weaned at 4 months. He presents the concept in animal breeding and health classes, and has summarized his feelings in the following statements: "Too many livestock producers try to get a large calf from a heifer, hoping to spend less money. If they would only use a small bull and segregate heifers from mature cows, the problems of calving could be greatly reduced, with increased profits."

The relationship between forage value and age and condition of ewes has always intrigued Weyerts. In an effort to familiarize graduate and undergraduate students with laboratory procedures, individual students are assigned to determine nutrient levels in feed and feces. With the data, Weyerts hopes through fecal analysis to make early predictions of downward trends in animal vigor.

Dr. Paul Weyerts is respected as an educator for his practical range experience. He uses the range as a classroom with only a chalkboard and overhead projector as teaching aids. He freely admits and points out shortcomings in his own ranching operations and constantly seeks economical answers to problems. All who listen to Dr. Paul, by choice or by chance, admit that he loves and cares for the land and passes that love and care to his students. ●

¹ Mention of a trade name of proprietary product in this paper does not constitute on a guarantee or warranty of product by the Science and Education Administration, U.S. Department of Agriculture and does not imply its approval to the exclusion of other products that may also be suitable.