



Students Become Professionals

By Dr. Ervin M. Schmutz
Range Resources

Range management as a professional program is a relatively new field. It began at the University of Arizona and other schools about 50 years ago, usually as a branch of botany, forestry or animal science. The profession became formally established with the founding in 1948 of the Society for Range Management. The society reviewed and accredited the UA program this year.

The current Range Resources Division at the University of Arizona stresses a combination of classwork in biological and physical sciences, economics and other courses, plus field work experience on Arizona rangeland. The undergraduate and graduate students in the program come from all kinds of backgrounds—cities, towns, foreign countries, farms and ranches.

Range management started out at the University of Arizona in about 1926 with courses in range ecology in the Department of Botany in the College of Liberal Arts. About four years later, a Department of Botany and Range Ecology was established under the direction of Dr. William G. McGinnies and Dr. Homer L. Shantz. Enrollment in the range program increased when the program was transferred to the College of Agriculture in 1955. After the range program was incorporated into the college's new School of Renewable Natural Resources in

Photograph: Dr. Philip Knorr (left) leads a photogrammetry class. Range student Maryam Niamir (center) and forestry student Gerris Willis are learning to make maps from aerial photographs. (Photos by Guy Webster.)

1974, undergraduate enrollment virtually doubled to 60 to 70 students and graduate enrollment now varies from 10 to 25 students.

In all, the university has awarded more than 181 bachelor's, 82 master's and 31 doctoral degrees in range ecology and range management.

The range curriculum includes basic courses in English, speech, mathematics, chemistry, physics, botany, zoology, economics, soils ecology and plant taxonomy. Supporting courses include physical geology, plant physiology, natural resource measurements, natural resource recreation, natural resource economics, technical writing, photo interpretation, beef cattle production, animal nutrition, wildlife management, soil morphology and classification, and range engineering and hydrology.

Many higher-level courses offer extensive field work to supplement classroom instruction and theory, especially the range field studies course. This two-week course is taught around the state each summer. Students observe vegetation types and grazing regions, range improvements and treatments, ranch operations and problems, multiple-use integration and management. They also study agency organization, philosophy, and operations. The participants gain experience in outdoor camping and cooking, and in human relations and cooperation. Extensive on-the-ground experience is given in the range improvements, range ecology, range evaluation, and range planning and economics courses. In the latter two courses a ranch or part of a ranch is surveyed and evaluated, and a complete ranch plan developed.

The wide diversity among range students' backgrounds makes practical experience important. Most range students gain valuable work experience with agencies or ranchers on temporary jobs or in cooperative education programs, student trainee programs or internships. These programs are available year-round.

Many students are influenced to enter range management because of farm or outdoor experience. A few become interested because of cowboy stories and movies, some because of 4-H, Future Farmers of America, or youth-workshop experiences, and many because of a love for the outdoors. Most are also motivated by a concern for the land and desire to help preserve and protect a valuable resource—our rangelands.

Most graduates go into range conservation positions with various state and federal agencies. However, many work on ranches, in banks, or with chemical, landscaping or fertilizer companies. Others go on foreign assignments and into consulting work, and many go on to earn higher degrees and work in teaching and research.

Several other programs of study at the UA College of Agriculture prepare students for careers that can be related to a specific use of range resources. The School of Renewable Natural Resources offers degree programs in wildlife ecology, watershed management, natural resource recreation, landscape architecture and fisheries science. College departments with programs leading to other related careers include animal sciences, veterinary science and plant sciences.

In February 1981, the UA Range Resources Division became the third program ever accredited by the Society for Range Management. The accreditation was based on a thorough review of the scope and depth of the curriculum, quality and competence of faculty and students, research and extension activities, and facilities for teaching.



On a field trip to the U.S. Plant Materials Center in Tucson, students in Dr. Gilbert Jordan's range improvement class learn about plants being tested for use in Arizona. From left: students Virginia Yazzie and Ahmed Elmi, and farm superintendent Henry Pallanes of the U.S. Soil Conservation Service.