

Range Management Education for Youth—An Enigma

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Editor's Note: The fancy title is intended to attract readers because the article has a message that we in the Range Society should be cognizant of and hopefully do something about in the near future.

Addressing rangeland as the "silent resource," suggested in a recent movie title by the Society for Range Management, may be more appropriate than many of us devoted to its conservation and management realize. No other land use class in the world or our nation exceeds rangeland in geographical extent. Rangelands constitute an enormous reserve of land, open space, clean air, mineral, energy potential, and source of annually renewable water, forage for livestock and wildlife, and recreational opportunities. The total contribution these resources make to the wealth and welfare of our nation is great by any standard. It is inevitable that their monetary and intrinsic values and present levels of exploitation will continue to increase. Yet no other natural and agricultural resource having the significance of our rangelands both economically and societally is less recognized or appreciated by the American public.

Rangelands are understood only by ranchers and professionals who make their livelihood within the rangeland environment, those who, by their efforts over the past 75 years, have sustained or improved range production and methods of management. Their successors must be at least as knowledgeable as they or more so. The general public must be better informed of rangeland resources and their relationship to the environment, national economy, and our cultural heritage. It is obvious that education is the means by which these needs can be satisfied.

Education with respect to any subject area—the arts, biology, agriculture, etc.—consists of two levels. One is an introduction, a general exposure to the inherent nature of the subject for enlightenment and breadth of understanding. The other intends to more fully educate one as a practitioner, a professional. An introduction to rangelands, their essential nature and resource values should begin with youth at the secondary school level (grades 7–12). The subject area is not mandatory, so it must be made important and interesting by informed teachers. Teaching materials must be made available which are attractive and usable.

As early as 1951, Vernon Young, Head of the Department of Range and Forestry, Texas A and M College, expressed in

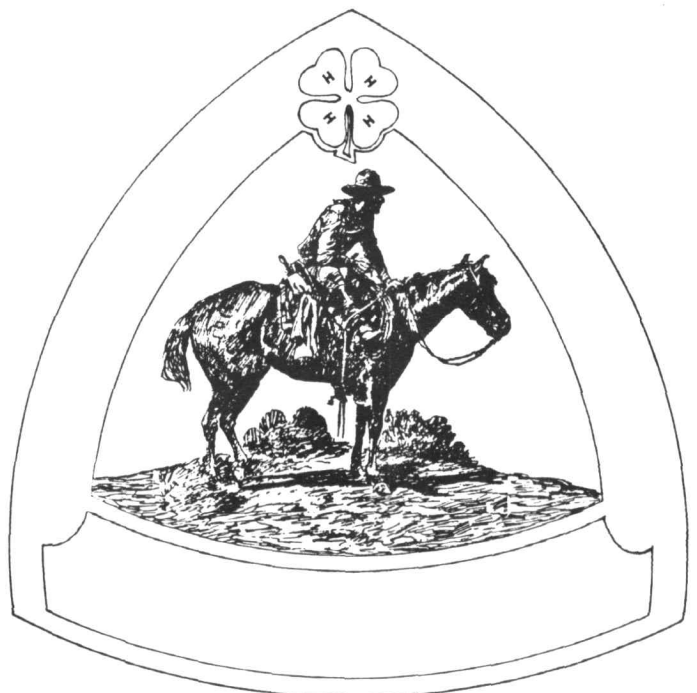
the *Journal of Range Management* the need for teaching fundamental range management in the elementary and high schools, that the Society for Range Management investigate this possibility and that Extension range specialists and county agents cooperate to teach range management facts through 4-H clubs in order to "touch the lives of most of the ranch people." In the same publication, Arthur Sampson, widely recognized as a pioneer in the field of rangeland management and education, wrote in 1954:

Again, let it be stated, that the greatest possibility of ultimate advancement of range management lies in the education of the young men who will comprise the future producers. Most of these ranchers-to-be will go through high school and a few will graduate from college; but the greater number will have to be reached through the 4-H clubs, the Smith-Hughes Vocational Agricultural program, the Agricultural Extension Service and in other ways. . .

Although much has been accomplished in range education through the 4-H and Vo-Ag programs since the 1950's, the complexion of range management, our society and the attitudes of youth have changed appreciably, making youth education increasingly difficult and perplexing. Some insight is afforded by consideration of the current 4-H and Vocational Agricultural programs.

Range Management Education through 4-H

The goal of the Extension Service 4-H program is to promote, perpetuate and increase knowledge of agriculture; 4-H



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promotes this goal through "learn by doing" projects and club activities. Thus, the program provides an excellent educational medium by which young people can be introduced to the principles and importance of grazing agriculture and the allied range resources. However, 4-H is not devoted exclusively to agriculture and young people elect projects of particular interest to them. And, a successful project depends upon securing a competent leader and appropriate guidelines (manual for leader and members).

There have been some outstanding achievements in range education through the efforts of individuals within the Extension Service and SRM. Rangeland judging contests and range youth camps developed in the early 1960's have enjoyed continuing success. SRM encouraged youth education as early as 1957 through the publication of "Range—Its Nature and Use—A Manual for Youth Groups" authored by Karl Parker for the ASRM Committee for Cooperation with Youth Organizations. The SRM has also provided continuing support with the formation of numerous committees dealing with youth activities. At least eleven of our Western States have produced range management manuals, guides and other pertinent 4-H project materials from 1963 to the present; some are intended for Vo-Ag or adult groups as well. Parker's manual served as a basis for many of them. Nothing, however, has ever been published nationally by the 4-H Council, or SEA Extension, USDA, dealing exclusively with the subject of range management. Only two publications (leaders' guides) are now available and intended for nationwide distribution and use by 4-H programs which include reference to rangeland resources, neither of which is suitable for use in a unit on range management.

Thus, it appears that those states not having developed 4-H materials either do not offer projects in range management, or are borrowing publications for use as leaders' guides from adjoining states and doing without members' project manuals and other materials.

An effort was made to determine recent enrollment trends in 4-H range management and related projects nation-wide by contacting the main offices in California and Washington, D.C. Enrollment figures available for "Range and Grassland Conservation," "Conservation of Natural Resources, General," "Soil and Water Conservation" and "Forestry and Forest Projects" were made available for the period 1969-1980. It is apparent from these data that enrollment in 4-H projects concerned with the natural resources is, except for Forestry, down significantly from a high in 1973-74. Enrollment in Range and Grassland Conservation which reached 14,092 in 1973 fell to 1,820 in 1975. As a result, range projects thereafter were absorbed under "Crops and Crop Projects." A Range Management category will, however, be reinstated on reporting forms for the states in 1982. According to other data from USDA Extension Service, of over eight and one-half million total 4-H projects in the U.S. for the reporting year 1975, only 7.2% participated in Ecology and Natural Resource projects.

The key factors determining enrollment in 4-H projects in the opinion of many youth advisors are: (1) a natural interest by a member, shaped by his or her background, influence of family and "what's happening" in the community and society in general; (2) the profit motive or economics of the prospective project; and (3) availability of enthusiastic, qualified adult leaders. A given project is initiated either by demand from one or more members at a club meeting, or through the offer of a project, based on talent and interest at the club

meeting, or through the offer of a project, based on talent and interest at the club leadership level. The 9 to 15 year-olds are highly motivated in project selection by peer group pressure and social gregariousness. Projects may actually compete for enrollment.

The big demand by 4-H'ers has been in feeder beef and lamb, home economics, and mechanical projects—those that involve objects that move, make noise, have high appeal to the senses, lend themselves to product competition and have a cash value or promise of a premium check following show time. At the present time, foods and nutrition projects have captured the largest enrollments in the U.S. and the creative arts and crafts are believed to be most rapidly increasing. (There were more enrollees in arts and crafts in California, 14,330 in 1980, than in range and grassland conservation in the entire U.S. at its peak in 1973 of 14,092). For a majority of our youth reaching minimum age for 4-H (9 years), even those from agricultural backgrounds, range management simply does not "come to mind." The interest of most kids is not inclined toward resource management and conservation until they are older and become aware of important national issues and current events. There is no glamour in a range project; even ranch family children are more interested in livestock projects than one in rangeland management. Also, a large majority of our young people live in urban and suburban areas where there are physical limitations (distance, transportation, and access) on implementation of a rangeland project.

The interest of any impressionable youngster, even in inanimate subjects could be caught if enthusiasm is demonstrated by youth advisor and adult leader. Securing adult leaders who will accept responsibility and feel comfortable with the subject and materials, however, is a major problem facing enrollment in 4-H natural resources projects generally, and very likely range management in particular. Volunteers should be familiar, if not experienced, with the project area to be successful. However, it is a safe assumption that few parents and other charitable adults are trained in, or even exposed to, management of ranch, range, or resources. A background in forest, wildlife, water, soil, ranch, or range management is uncommon even in extension 4-H youth advisors. Most volunteers won't assume project leadership and it is a disservice to ask them, unless a leaders' manual is available. Major goals of 4-H at the county and state levels are, therefore, to develop useful project guidelines and train responsible adult leaders. But these objectives are justifiable only after a demonstrated need is apparent. Other new projects, guidelines and manuals are being requested at the club and county levels due to big enrollment interest, and many old, heavily used issues (e.g. foods and livestock) need revision. These would normally preempt development of a new project. Those of us in rangeland or related resource management fields should not deceive ourselves. Just because we are convinced our youth need or should have greater appreciation of rangeland resources management doesn't mean we can simply institute it through the 4-H program.

Range Management Education through the Vocational Agricultural Education Program

As early as 1966, the major program objective for vocational-technical education in agriculture was published by the U.S. Office of Education in a bulletin (No. 4) of that title. It is to develop agricultural competencies needed by

individuals engaged in, or preparing to engage in production agriculture and in agricultural occupations other than production agriculture. The instructional program in Vo-Ag is apparently based upon two basic ingredients, namely: (1) employment opportunities existing in agricultural occupations, and (2) those competencies associated within major job titles found in these occupations. Recognizing that employment in career range positions require education and field experience beyond high school, do current opportunities seem compatible with the first program criterion? Relative to the second, is range management a major job title and can required competencies be taught in high school?

A National Ag Occupations Competency Study was conducted in 1978 by D.R. McClay Instructional Consulting and Research Associates of Pennsylvania purportedly due to a need by educational leaders to improve existing vocational-technical training programs and for establishing new programs. The report was the result of efforts by agricultural education representatives in forty colleges and universities in the U.S. and intended to identify and validate essential competencies needed for job entry and advancement at "mid-management" level or below. It included all major production agricultural occupations in the instructional areas of the Office of Education (one of which is "Renewable Natural Resources"). It appears, although not specified, that occupational entry requires only a high school diploma or community college degree at most, thus, perhaps, further defining the primary thrust of the Vo-Ag Ed program. In the volume no professional or subprofessional positions including the name "range" in the title were evaluated and reference to competencies in range forage resource management practices are made only under three ag production occupations dealing with beef and three with sheep. Within the renewable natural resource occupations, no range-related duties were indicated for Wildlife (or Natural Resources) Technician, Soil Conservation Aide and Technician, and Conservation Officer and Aide, other than competency to "inventory available feed for wildlife." One can conclude that: (1) in the U.S., range management as a profession is not recognized as a major occupational field, at least for young people having achieved less than a baccalaureate degree, (2) the competencies necessary for range resources management are apparently a function of livestock managers and are only incidental to their primary responsibilities, (3) a range management unit in Vo-Ag would seem justifiable considering the competencies required of livestock persons which entail a knowledge of rangeland, (4) an understanding of the forage or grazing resources of rangeland in the renewable resource occupations, namely soil, forestry and wildlife, is not recognized by those who participated in the survey, and (5) that this document, widely used in structuring Vo-Ag programs in the U.S., is not conducive to interest in, or implementation of, an instructional unit in Range Management at the high school level.

There is no information available nationally as to instructional offerings in the various subject matter areas in high school Vo-Ag programs, nor for projects undertaken by participants of the allied organization, Future Farmers of America (FFA). The offering of an instructional unit is a function of the education and background of the teacher, local job opportunities, and program administrators at the district and state levels. As one would expect, there are indications in our high schools of a move away from training for on-the-farm occupations to urban agricultural training to meet increas-

ing job opportunities in ornamental horticulture, private forestry, landscaping, or other intensive agriculture. This trend seems to follow the diminishing percentage of our population living on farms and ranches and directly concerned with extensive food production agriculture. In a recent study of high school graduates entering college as agriculture majors done by Robert Cooke of Cornell University, about one-third are women (up 15% in the last five years), fewer than 15% have farm backgrounds and two-thirds come from urban areas of more than 10,000 people.

Again perplexities faced in the 4-H program become apparent with respect to the Vo Ag-FFA situation. What proportion of our high school ag instructors have university training or experience in range management or the related resources and have the interest and enthusiasm to voluntarily offer a unit in this area? What encouragement to offer the subject is given by program administrators? What interest can students be expected to exhibit? And what suitable teaching and project materials are readily available? The



answers to these questions would necessarily be speculative, but likely cannot be very positive at the present time.

In an informal poll conducted in 1979 by J.C. Shaver, Cooperative Extension Service, North Dakota State University, Extension agents in Western States having a "high percentage of rangeland" were asked by mail about the availability of range management teaching materials for use in Vocational Agricultural Programs in their state. The poll was prompted by Mr. Shaver's belief that range education is neglected in the secondary school curriculum and that Vo-Ag classes are an excellent, direct means for teaching the basic principles of range science. Of the states responding, nearly 60% indicated that no materials were available to high school instructors and some of the remaining 40% reported only limited availability. (Shaver's survey also attempted to discover to what extent range management units were offered in each state but responses could not justify a conclusion. J.C. authored an excellent range management manual for North Dakota in 1980, funded by the Old West Regional Commission.)

In early 1981, a survey was conducted by this author of Vo-Ag Ed and 4-H in California to assess attitudes toward range management instructional or project guidelines. Fifty-nine percent of the addresses responded, 69% of whom indicated a need for additional guidelines concerning rangeland resource management. Vo-Ag instructors reacted most positively; 4-H Youth Advisors, least favorably. Negative reactions were received from personnel located in areas

devoted primarily to cropland, ornamental horticulture, and other urban agricultural pursuits. Some comments received were of particular interest and tend to exemplify the overall response to the survey.

These include:

"Rangeland use and improvement will be more and more necessary and will provide many public and private jobs, not only in the Western States, but world-wide. Yet, many children/students are not aware of either the need or the job opportunities." . . . "Very little interest by students in this subject. Too specific a topic for high school students to study in depth." . . . "The Sierra foothills are experiencing growing pains from development of much of its land for horses, from increased use for recreation, from urbanites, and from cattlemen seeking inexpensive sources of grazing land. Yes! our area is in need of educational materials dealing with the management of our rangelands."

. . . "This material could aid me greatly in teaching a unit of rangeland resources management in my natural resources class. I am presently unaware of any available material." . . . "This type of unit is not of high priority in our instructional program, or important in our farming community." . . . "Sonoma County is a growing urban community but with considerable valuable rangeland left. The public at large and youth in particular are ignorant of this resource, its benefits and multiple use potential. Land use is a critical problem for us." . . . "Corcoran is a farming community, but I would promote and use the materials because of the need to make available to students, all areas of agriculture production in the State and U.S." . . . "Can't see much use in our 4-H program. The emphasis in our livestock projects is on the market animals for the local fairs and small breeding projects. Such materials would be more applicable to the FFA program where they get more into the commercial livestock industry. Perhaps could tie with 4-H forestry and wildlife projects." . . . "Some of our students will definitely use this material because they will be involved in these operations upon completion of their studies."

Whether these responses from Californians are representative of the prevailing mood in this and other states is a matter of conjecture.

The Enigma in Conclusion

It is evident in reconsideration of the foregoing, that a number of perplexities exist in youth education regarding rangeland resources. The 4-H and Vo-Ag programs appear to be ideal vehicles through which young people could be reached for range management education, but the structure of these organizations and contemporary interests of their members do not appear to be conducive to this end. Although there are excellent education and project guidelines available in some western states, no concerted effort has been made within either the 4-H or Vo-Ag Ed programs to publish or promote the development of suitable materials

on a nation-wide basis. It is apparent that the definition and scope of rangeland and the profession of Range Management is imperceived by administrators, educators and project leaders in agricultural youth programs.

As is widely recognized, fewer youngsters each year originate from within rangeland, forest, or other agricultural environments, so American youth are increasingly less predisposed to seek education, vocations, or project experiences in the natural resources. The situation is self-perpetuating in that fewer people in our society are agriculturally oriented than in the past, especially those sufficiently familiar with rangelands to promote or teach the subject. The range management project, even in its simplest form, requires considerable knowledge, and the assumption of leadership in such a program by a Vo-Ag teacher or adult 4-H leader is discouraging to all but those with some background. Rangeland management as a profession requires competency in many natural and agricultural sciences, especially taxonomic botany, animal and plant ecology, soil science, hydrology, and range livestock production. And, particularly since the 1960's, the field involves understanding of other, integral resources and social institutions relative to the precepts of multiple use management. It is possible that these complexities present abstractions to youth and adults who consequently opt for the simplicity of undertaking a familiar project involving a single animal, a group of like plants, or a single skill.

We cannot, therefore, expect rangeland resource management project and educational materials to be requested by youth program leaders, or by youngsters. However, their promotion in our high school or 4-H programs can be justified if the material is not overly technical or management-oriented. An attractive, contemporary, well-illustrated publication emphasizing the scope, values and importance of our rangelands and their place in our nation and the world is needed. One which is instructive, informative, and interesting and designed to be integrated with regionally specific materials produced at the state level. One which lays out the fundamental principles of ecology and management in a manner clearly understandable to youth and adult; a manual or handbook adaptable for basic, introductory use in any program.

More now than ever before, we need to enlighten young people as to natural resource values and the conservation ethic. This is especially important if responsible public recreational use and prudent commercial exploitation of our rangeland resources are to be better achieved in the future.