

# The Challenge of the Future as Viewed by Educators in Range Schools<sup>1</sup>

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The future is but a series of tomorrows. To prepare for tomorrow, we listen to what is being said today. What is being said today about range managers is a response to their effectiveness as they presently perform their duties with the benefit of yesterday's university training. Thus, society will determine educational objectives if we are wise enough to respond to reactions of our past efforts.

In facing the future in range education, we must recognize changing objectives of society and the development of new situations in agriculture. We might consider how the following developments may influence curriculum planning, content of courses, and teaching methods: (1) acceptance by the United States of responsibility in assisting other nations develop their agricultural potential; (2) increasing number of ranching corporations and absentee ranch owners requiring ranch managers; (3) intensification of management of both public and private grazing lands; (4) the demand for greater application of basic sciences in range research; and (5) multiple-use management of public and private lands formerly assigned a single use.

Questions on how range educators should face the future were posed to my colleagues who teach range management; their answers provided a cross-section

of opinions that were incorporated in this presentation. Their help is gratefully acknowledged.

In response to my question whether the future called for curriculum changes to better train students for foreign service, the consensus was that probably few students would enter foreign service immediately upon graduation. Rather, it is expected that we will continue to send experienced men to help other countries develop range management. Thus, curriculum modifications for foreign service do not seem necessary.

Three points were made, however, in regard to our increasing acceptance as a nation for responsibility in helping other nations: (1) we must inform students and others of the range management problems in other parts of the world; (2) those we send to other countries should be capable of helping the host country do a good job of training their own students in the field of range management; and (3) we must do a careful job of selecting those from other countries who wish to enroll in a U. S. university.

Since we will not be training students to go into foreign service immediately out of college, probably our minimum efforts in the university should be: (1) to teach principles that will be world-wide in their application rather than teach facts applicable only to localized situations; and (2) to encourage students to develop a world-wide concept of range management problems.

The second new development which may have a bearing on how range educators face the fu-

ture is the increasing number of ranch corporations and absentee ranch owners. This means there will be a greater demand in the future for ranch managers. Therefore, we should graduate range managers who can compete for these jobs. Too long we have left this job to animal husbandry departments. How better can we advance the cause of range management than to increase the number of ranch operators who are graduates of a range management school?

Schools which have the range curriculum in their College or Division of Agriculture are probably already facing up to the problem of "producing" range-trained ranch managers. Some of the problems, as I see them are: (1) attracting the student who may have an interest in becoming a ranch manager into a range management major; and (2) providing him with a curriculum that includes the business aspects of ranching as well as courses in animal husbandry and range management.

Solving the above problems may require the establishment in your school, and publicizing, of an optional course of study in range management. Why can't we eliminate a few of the "frosting type" courses that merely top-off the standard range curriculum? In their place we could substitute some courses in marketing, accounting, and other needed business and animal husbandry courses.

The third problem, that of the trend toward intensification of management of both public and private grazing lands, indicates a need for top-notch range management "salesmen" who know what they are talking about. These salesmen are the young men in the various government agencies who have the task of implementing range improvement and management programs. They have a big task, and I don't think that many of our present

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curricula in range management adequately train the bachelor of science student for it.

I once heard a Forest Service official claim that the success of getting a good job of management done depended about 10 percent on what the range manager knew, and 90 percent on how well he could get his ideas across to the permittees. You may not agree with the percentages used in the illustration, but I think you will agree that the statement points up a strong need.

Are we graduating technicians who are without training in administration and public relations? I know that the very mention of social science courses is enough to evoke a good discussion in any coffeehouse. We should not merely add a social science course or two just because it's the fashionable thing to do nowadays. This fad is probably the reason why some of you are ready to disagree with my proposition. Rather than merely adding some electives in the social science field, I am making a plea for inclusion in the curriculum of carefully selected courses that will teach the potential range manager how to sell his ideas and how to administer his program.

Selling ideas and administering programs have much in common. Success in both is dependent on a thorough understanding of human psychology and social processes. The problem then becomes, how do we avoid a minor in psychology and another in sociology, yet provide the subject matter? It won't be easy. It may require the initiation of courses not now available. Let me give you an example from the Colorado State University catalog: We have available in the Sociology Department a course called "Social Adjustments;" to supplement this, the College of Forestry and Range Management has added courses

entitled "Public Relations in Natural Resource Management," and "Wildland Administration." Perhaps one or two additional courses could be added to this sequence to give the student adequate training.

The addition of courses on human psychology and social processes will probably require the same trimming of some technical courses as I suggested earlier for the ranch management program. I do not recommend merely the addition of courses without removal of some. This makes the challenge even greater for those who are in charge of establishing the curriculum. And it will be a challenge to our advising system, because the student who plans a career in resource administration will have to make this decision as early as possible in his 4-year program.

In recognizing the need to help the potential range conservationist or range manager become a salesman and administrator, I do not mean to sell short the need for a solid technical training. We should all remember how important it is to the new graduate to have the technical knowledge needed to do well the first jobs assigned to him. He will gain confidence and progress only if he does these first jobs well. But I would argue that imparting technical range management knowledge is something we do rather well now; it is the imparting of knowledge in the social sciences that we do not do sufficiently well for the challenge ahead.

The trend for demanding greater application of basic sciences in range research causes me to ask: are we graduating technicians when we should be graduating scientists?

By now you probably wonder why I don't make up my mind—do we need to train ranch managers, rangeland administrators, or range scientists in the bache-

lor program? Obviously one man cannot be trained simultaneously in all three.

In answer to my question about the possible need to provide greater training in the basic sciences for some students, about all the range educators answered that there is such a need. They all indicated that the range science program should be the basic 4-year program for those going on to graduate study. And uniformly they expressed the opinion that in providing a basic science program there will be need for skillful student guidance and counseling. Why? Because the science program will demand that major surgery rather than minor trimming be accomplished on the standard curriculum. Properly done, it may require deferral of some of the core range management courses into the graduate program. This is rarely done today. It can be done, but only if the student in the range science curriculum is absolutely certain of going on for the M.S. degree. Because of the uncertainties involved, schools may not be listing specific subjects for the undergraduate range science program; instead, they provide a tailor-made curriculum for each student. If such flexibility is not now available in the B.S. program, it should be.

Undergraduate students in a range science curriculum should become proficient in the laboratory. They need not defer attainment of laboratory skills until they become graduate students. This may require a new look at our laboratory facilities. Why not have the junior or senior who is interested in a research career do some preliminary research projects in the laboratory? Not all projects will be laboratory oriented, but the undergraduate student should learn to do independent chemical and physical determinations of plant and soil properties. He will then be better

prepared for basic studies as a graduate student.

The fifth change, the trend toward multiple-use management of public and private lands formerly assigned a single use, raises some question on how we should face the future in range education. It seems generally agreed that range management graduates will be concerned with multiple-use management of rangelands.

Range educators generally agreed, however, that we cannot develop both a range management technician and a multiple-use expert of a student in a 4-year program. The most frequently suggested approach was to produce a good range technician who has developed an understanding of and appreciation for the several facets of multiple-use management in expectation that he will be one of a team of resource managers.

A five-year curriculum was frequently suggested as a possibility for meeting the demand to produce a technician who might carry responsibilities for individually carrying out multiple-use programs. Personally, I automatically translate the term 5-year program to mean an M.S. degree. I do not think we should, nor likely will see in the immediate future, a change to a 5-year B.S. program. Why not use the M.S. with a Plan B (i.e., no thesis) to develop the broadly trained resource manager? The M.S. with thesis (Plan A) will continue to be the research degree.

Professor Melvin Morris asked how we should teach multiple-use management (assuming that it would be limited in scope to the usual 4-year undergraduate program). I would like to echo some of the suggestions that he and others made, and in so doing add my concurrence. First of all,

rather than add specific courses, we could alter existing range courses to bring in information showing the relationships between grazing and other uses. Secondly, we might use a senior management planning course as an integrating course. In developing management plans in the senior course, consideration should be given to uses other than grazing by livestock.

We may see a certain degree of specialization develop among our range schools. Those which have range management in their College or Division of Agriculture have the best opportunity for developing the ranch manager option, and those which have range management allied to Forestry and other natural resource curricula will have the best opportunity to develop the multiple-use option. All should do well in developing the standard, or manager curriculum, and in making alterations for the range science program.

Briefly, a few miscellaneous considerations as we look to the future. The foreign language requirement for the Ph.D. degree came in for universal comment. Apparently, there is need for a serious look at our language requirement. Most range educators seem to favor the requirement of only one language for the Ph.D., but requirement of both a speaking and writing facility in it. Some few would recommend requiring one language for the M.S. degree, and a second for the Ph.D. Most would favor giving the candidate opportunity to choose the language or languages he believed would best fit his future needs.

Dr. Harold Heady suggested the need for "multiple-biology," i.e. integration of physical, mathematical, and biological sciences. As we look at the ecosystem, we must relate such factors as genetics, population dynamics,

botanical and zoological life forms, energy cycles, etc. I concur that we must be inter-relating our many fragments of knowledge as we attempt to understand and manage ecosystems. However, I think that this task, though started at the undergraduate level, cannot be completed there. Personally, I think that Dr. Heady has given one of the best possible arguments for the validity of the Ph.D. in range science. Who will attempt to develop "multiple-biology" in the range field if range scientists do not? Probably no one. And who but the Ph.D. candidate has the broad training in basic sciences necessary for research projects involving "multiple-biology" concepts? It seems to me that dissertation projects in range science are the ideal mechanism for accomplishing objectives indicated by Dr. Heady.

I asked range educators about needed changes in teaching methods. The consensus seemed to be that teaching methods are something to be worked out on an individual basis. Perhaps, but I think much could be gained by an interchange of ideas on the subject.

In summary, I have suggested certain curriculum modifications to fit specific needs of the ranch manager, the range technician, multiple-use resource manager, and the range scientist. In each case there seemed to be insufficient time in the 4-year program for all the necessary courses. Yet only in the case of the range scientist and the multiple-use resource manager is a 5-year or longer program justified. Therefore, it appears that in order to properly train our graduates in 4-years, we must make the most of each 50-minute class period. The future demands quality teaching and the best possible counseling and guidance of students.