Summer Range Management Course on Wheels for County Agricultural Agents in Texas

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THE fourth annual summer range management course for Texas county agricultural agents closed on July 10, 1950. The class of 29 students told the instructors their college course was one of the best they had ever taken. They had just finished a course which required of them many hours of study, preparation of field notes, herbarium development, 1600 miles of travel, and the inspection of 22 ranches over a period of approximately three weeks.

Why did this field course, like the three previous ones, appeal to these experienced men although several of the group had taken no class work for a number of years?

The answer may in part be found in the following: First, the county agents had a real look at range problems both from the distance and close-up. They were convinced that something concrete must be done to save one of the largest and most important crops of Texas, namely the native grasses and forbs. Second, they recognized that text book information and field application can be correlated. Third, that the principles and practices of range management taught could in a large measure apply to most of the counties of the state although these are highly diversified in climate and native forage. Fourth, the agents also realized they did not have the answers for the many questions that ranchmen asked them concerning range management. Fifth, these men discovered that it was real fun to study and learn in an atmosphere of challenge. The challenge came not only from the members of the class but each challenged himself to increase his efficiency and knowledge from day to day.

The latter point was of considerable interest to the instructors because a number of the members of each course were in their forties and a few in their early fifties. This proved that age is no barrier to technical learning.

At the request of Vice-Director J. D. Prewit of the Extension Service, arrangements to teach the summer field range course were made with the Agricultural and Mechanical College of Texas, College Station, Texas during the spring semester of 1947. The Extension Service appointed a committee composed of district agricultural agents to work out with members of the Range and Forestry staff the overall program for the field course. As a result, the district agents were held responsible for transportation, registration and camp facilities, while the instruction was made the responsibility of the Department of Range and Forestry.

Dr. O. E. Sperry and the writer prepared a syllabus of the course. It was approved by the College Administration and the first range management course for county agricultural agents began on June 22, 1947 at Agricultural Substation No. 14 near Sonora, Texas. This Substation is located in the approximate center of the Edwards Plateau region.

Twenty-six agents representing counties rather widely distributed over the State reported for class. During the first meeting, the county agents, under

the supervision of a district agent, organized their camp program. The problem of food was solved by employing a cowboy cook and hiring a truck equipped for outdoor cooking. Each man brought his cot and bedroll and slept in the open.

The lecture room (for six days) was a machine shed. A semi-portable blackboard, a small teacher's table, three long rough board tables and board benches for seats comprised the class room furnishings.

The topics included in the course were with certain exceptions those that would apply to any group of agriculturally trained men without a technical background in range management. The lectures included both fundamental and applied knowledge relative to range management. The principal topics treated were:

1. The identification and classification of the important range plants of Texas.
2. Range types in relation to the climate, topography and soil of the State.
3. Proper utilization of forage plants in relation to regional composition.
4. Proper forage utilization as a guide to stocking rates on the basis of "key" species and "key" areas.
5. Management of ranges in relation to kinds of livestock, proper distribution, proper season of use, and indicators of both range abuse and range recovery.
6. Poisonous plants, their distribution and methods of control.
7. Control or eradication of noxious species of brush and the introduction of proper grazing practices on brush lands.
8. Range reseeding.
9. Pastures and their management as forage supplement for ranges.
10. Technical problems in relation to range management.
11. Range condition classes.
12. Range developments.
13. Applied range economics.

The periods and sequence of instruction at the Sonora Substation included from one to four hours of formal lecture daily, with field exercises on nearby ranches taking up the remainder of the day. The field exercises not only parallelled the lecture material but actually introduced new subject material for later lectures. This was made possible by the different methods of management found in the region where stocking combinations of cattle, sheep and goats are a common practice.

Forage plants were studied in relation to their environment as well as a means of determining their identification and classification. The county agents were taught how to prepare a field herbarium and how to mount and preserve plant specimens for educational purposes. Several of the agents later prepared a grass exhibit for display use in their offices. These were used to familiarize ranchmen with the species common to their ranges. They also added interest to the 4-H grass judging contests that have proved so popular over much of the State.

Survey techniques were introduced as a means of quantitative determinations in the various phases of range management. Cause and effect was readily brought to the attention of the students on several ranches where the poisonous bitterweed (*Actinea odorata*) was taking a heavy toll of sheep. Other poisonous species and dense stands of brush and prickly pear cactus occupied much of the native pastures in certain areas that once supported dense and nutritious vegetation. This condition was brought about primarily by overutilization of the better

grasses and forbs through the "common use" grazing of cattle, sheep and goats over a fifty year period.

Chemical and mechanical methods of controlling live and shinnery oaks, juniper (cedar) and other woody species were observed. It became apparent that the brush problem on native ranges was one that would require the best talents of all concerned. In addition, several of the major problems associated with range abuse throughout the State, were available for study within a radius of 60 miles of the Substation.

This crowded week of lectures and field exercises gave the students the background essential to move on to other areas in order to study range management practices under different environments.

July 2nd, 1947, the class left the Sonora Substation in private cars accompanied by the cook, a chuck wagon, a blackboard, and the instructors. The first major study was made at the Clark Hereford Ranch near San Angelo. Here were observed outstanding results obtained by fitting tobosa grass into a rotation system of grazing with other grasses.

The class next moved westward to the vicinity of Fort Stockton. The general region was experiencing a three-year period of drought. Here irrigated pastures and alfalfa fields were studied not only as to management but as a source of supplemental forage and hay for the ranges during drought periods. A study of the Puckett Ranch, in this general locality, revealed the importance of proper rates of stocking to maintain a profitable unit during a prolonged drought period.

A hurried trip was made through the 290 section E-L Ranch near Fort Stockton. In a small native pasture located in a corner of this great ranch, the highly palatable bush-muhly grass once fairly abundant but now almost extinct over western and southwestern Texas, was seen making a satisfactory comeback under proper grazing practices.

Sixty miles to the west, in the Davis mountains, the class visited the little college city of Alpine. The vegetation in this vicinity revealed for the first time on the tour zonal differences associated with altitude. Here different kinds of range management were associated with the zonation—something unusual for Texas. In this area and on the famous Kokernot Ranch, a dual management program of cattle, deer and antelope furnished valuable information on the role that native pastures play in balanced land use for the hunter and livestock producer.

Moving deeper into southwestern Texas, the class stopped at the Mitchell Ranch located near Marfa and in an area that is noted for Highland Hereford cattle. Here a practical engineering method of water distribution was studied. Seven windmills, within an area of less than five acres, are used to lift water from a canyon from where it is distributed to various points in this 17,000 acre ranch. Range economics was strongly stressed in this particular region. During the three-day stop at Marfa, first hand information was obtained relative to the effect of the drought and overutilization on the ranges of that area. The determination of range condition classes was quite stimulating to the class. The value of leaving sufficient plant stubble and residue on the range lands to protect the soil from the forces of erosion was evident from comparisons made in the region. In addition, these studies left a deep impression with the county agents as to the close correlation of the physiological and ecological relationships of the plants to their environment.

The eradication and control of poison-

ous plants in this general region was also a major consideration. Such poisonous plants as rayless goldenrod, woolly and Riddell senecio, woolly and narrow leaf locos, garboncilla, peavine, and others were causing considerable livestock losses on several ranches. Again an opportunity was presented for the class to correlate range abuse and the kind of vegetation with the practices used in areas studied elsewhere. They questioned each other as to the soundness of given management practices. Whenever the instructors felt it was desirable to stop for a lecture or to outline on the blackboard certain phases of the instruction, they did so. Lectures were held in such places as open native pastures (Fig. 1), under trees, or on the

FIGURE 1. Class assembled on open range for lecture and discussion following inspection of a comparatively large ranch unit.

that might increase or invade as a result. A hurried inspection of the poisonous plants laboratory brought to light the need for technical assistance and funds to combat the poisonous plant problem in Texas.

During the period of travel the county agents became more conscious of the importance of the overall range program and likewise became more inquisitive each day. They obtained valuable information first hand from livestock operators. Qualified personnel from the Soil Conservation Service and Extension Service willingly gave their experiences on the methods and programs necessary to make range conservation work.

The agents made comparisons of the several range management practices observed in a given area and attempted to show whether the results were correlated shady side of barns and once in a high school lecture room.

At the close of each lecture or discussion the instructor would leave a challenge that called for additional thinking on the part of the class. There was never an idle moment on the part of the student if he wished to follow all leads.

When the course terminated, the students as well as the instructors agreed that it was a great education for all. Many friends were made among the ranchmen, farmers, and townspeople as the class moved from place to place. The hospitality characteristic of Texas rural people, was extended wherever the class went. A number of barbeques were given, light refreshments were served, and other favors extended. The ranchmen gave freely of their time and counsel, asking no remuneration for their services

except that any worthwhile knowledge they imparted would be carried on to other ranchmen (Fig. 2).

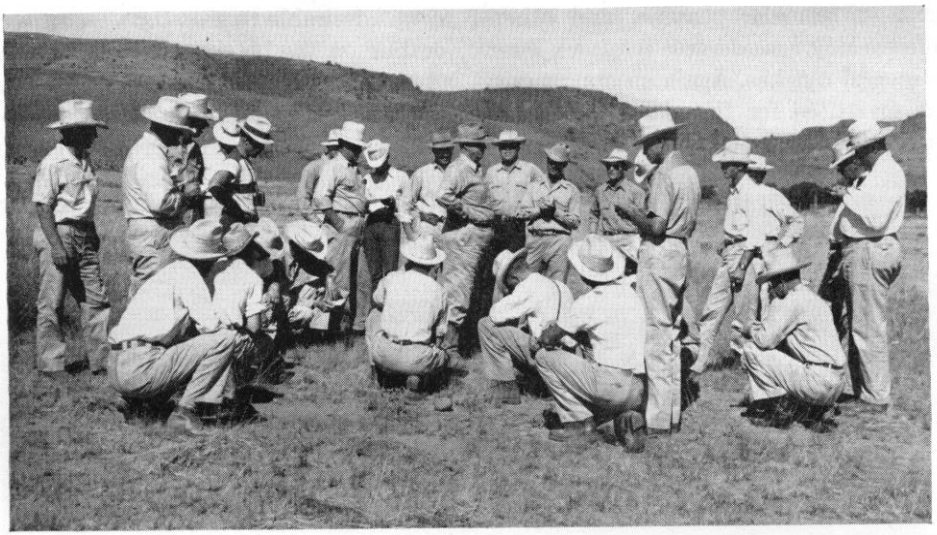

FIGURE 2. A rancher discusses the range problems on his ranch and general locality. The ranchmen were always very helpful in promoting range Extension conservation.

One might logically ask what the course accomplished that could be passed on by the county agents in their respective counties to promote better range management and stimulate rural people to become more range conservation minded. These are a few that stand out:

1. The introduction of a range management program for specific localities in a county that would assist ranchmen in initiating range conservation practices needed to obtain a sustained forage yield.
2. Range and pasture field day demonstrations have been organized and guest speakers invited to attend.
3. Ranchmen have been visited and encouraged to set up reduced stocking rates on over-utilized ranges.
4. Forage displays of outstanding native range plants have been placed in a strategic place in the county court house or in the office of the county agricultural agent.
5. Grass judging contests for 4-H boys have been expanded.
6. Last but not least the county agents have preached the gospel of range conservation to their neighboring county agents and advised them to attend the next summer range management course.

The results obtained by the county agents who attended the second course were equal to and in some respects better than those of the first group because the teaching staff through experience obtained during the first course was able to stress certain phases of the field studies to better advantage. Not only did these county agents introduce management practices suggested to the first group, but they substantially enlarged the plant judging program which was extended to many more 4-H clubs and counties. In addition grass and plant judging contests for 4-H and F.F.A. boys were introduced at county livestock shows, county fairs, the State Fair and finally regional contests where keen interest and competition has resulted. Adult grass identification

contests are also becoming popular at field day programs.

The county agents who completed the course the third year were equally as enthusiastic as the former two groups and were determined not only to carry on what had been introduced in the past, but to introduce additional phases of range management and conservation. Two members of this class soon after returning to their respective counties

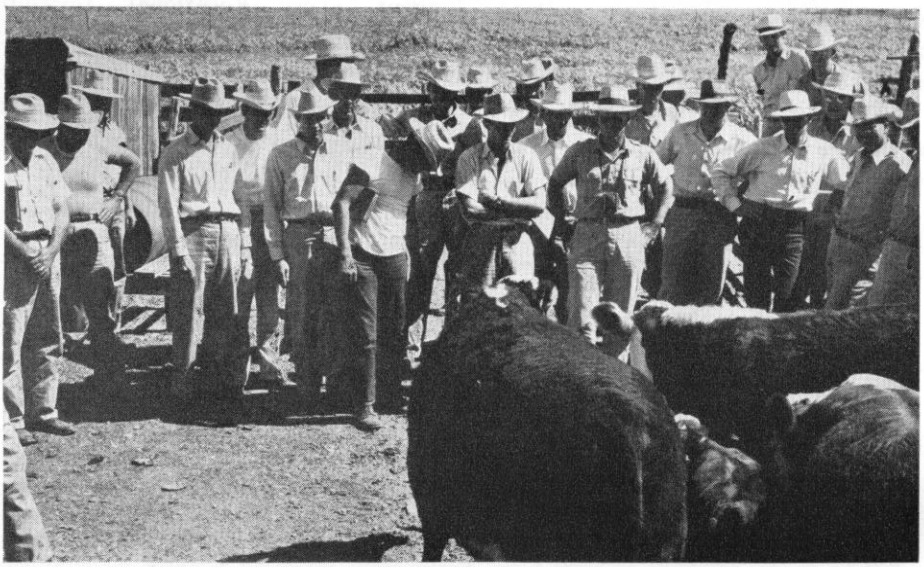

FIGURE 3. County Agricultural Agent W. T. Posey (second from right) discusses the value of 4-H calf club program and methods for show fitting with class. The large calf, *Judge Roy Bean*, on the left and owned by one of Mr. Posey's club members won the Grandchampionship at the Chicago International Livestock exposition in 1948.

successfully conducted range management courses for ranchmen and others interested in land conservation. Two other members began range management field contests among their 4-H clubs which will no doubt be greatly expanded in the future.

The members of the fourth class which comprised 23 county agents and 6 vocational agricultural teachers although less than a month out of the field range school are at this time reporting the organization of range programs for their counties and vocational agriculture classes.

The summary of the major contributions in range management obtained in the Extension Service in 1949 is included in a paper published by Extension Service Range Specialist A. H. Walker, entitled "Extension Range Work in Texas" (Journal of Range Management 3: 186–189, 1950; Table 1). Sixteen major activities are reported and each was well supported by 18 to 159 counties. However, all the activities listed and reported should not be attributed entirely to the influence of the summer range management field courses. The energetic action by those who did attend started the general program rolling, however. Mr. Walker who was appointed range worker September, 1947 was especially active in promoting the range program and his services were made available to any agent desiring assistance.

In conclusion, the experiences of the

writer in the field of range management now definitely indicate that ranchmen, farmers, business men and others are profoundly interested in the welfare of our native range lands. Much has been accomplished in range management research, but the results, published principally in technical bulletins, have been slow in arousing the ranchmen and farmers to action.

It is now too late to depend largely on literature to stimulate an interest in proper range management practices. Therefore, real action is necessary whereby the information must be brought to the landowner by representatives of the various agencies interested in range conservation by means of personal visits, organized meetings, field demonstrations and club work for boys (Fig. 3).

There should be at least one Extension Range Specialist in each of the 17 Western range states to assist the county agricultural agents with their range management programs. These specialists would help to keep the landowners in touch with results being obtained in range research. Not until every county agent, every Vocational Agricultural teacher, and every conservationist is spreading the gospel of proper range management practices will our native range lands be safe from exploitation.

PLANT GRASS AND SAVE SOIL

We must conserve our remaining natural resources. This applies particularly to our topsoil. It is not too late to save, and even improve, our soil. We can prevent the runoff of eroding rain water by adopting such practices as contour and strip farming and by putting greater emphasis on grass crops. Fortunately, increased demands for livestock products require more grass culture.

Only a small fraction of our farmers are as yet using the scientific knowledge now available. If that knowledge were universally applied, our food supply could be raised 50 percent.

Dr. Harold G. Moulton,
in The American Magazine