

How Is YOUR Range Land?

Range-Condition Analysis Will Help Show Potential Forage Production

By R. R. Humphrey
And A. L. Brown

Are Arizona's range lands producing all the feed they should? Is *your* range producing all of the feed that it should? A new tool, range-condition analysis, is being used to get these answers.

Range condition is based on the potential ability of a range to produce a certain amount of forage. A range that is producing all of the forage that it can produce is classed as being in excellent condition. One that is producing less than a fourth of what it is capable of producing would be classed as being in poor condition.

For convenience, range condition is broken down into four classes. These condition classes tell how much forage is being produced as compared with the amount the same area should and could produce. Thus:

Excellent condition — 75 to 100% of possible production.

Good condition — 50 to 75% of possible production.

Fair condition — 25 to 50% of possible production.

Poor condition — less than 25% of possible production.

How can we tell when a range falls in any one of these classes? First, we have to know what the range is capable of producing. By examining a lot of ranges of the same type, we learn how much production can be expected of a range of that type, and can use that as a basis for judging other ranges in the area.

Production "Signs"

All ranges have certain signs of their ability to produce. What are these signs? They are the same things ranchers have been using for years to evaluate their ranges.

First and foremost is the kind of plants growing on the range. If there is a good cover of dependable, highly

palatable plants the range may be in top condition. If, in addition, the plants are producing good viable seed, and are vigorous; if they have not been grazed into the ground so that there is enough litter to protect the ground from erosion — then you can be sure your range is in top condition.

These same indicators—plant composition, density, forage vigor, litter, and erosion—tell the story no matter what the condition of the range. Snakeweed or juniper coming into grassland, for example, indicate that the range is probably on the downgrade. When there is considerable bare ground between the grasses; when they don't seem to have the vigor they should, and there is little litter on the ground to check erosion—then you can be sure your range is

on the way down. Maybe it hasn't gone very far, so that it might still rate "good." Or maybe it has gone all the way down to "poor."

If your range isn't in excellent condition, you're losing money. The range isn't producing the feed that produces the cows that produce the dollars. The range-condition survey will show you how far your range is from the top. It will show you how much money you're losing by having your range in a lowered condition class. And if you know how much money you're losing by having a range in a lower class, you know how much you can afford to spend to bring that range back up to excellent.

Survey Shows "Where"

But a range-condition survey does more than just show you *how much*

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On the cover is shown an excellent-condition range on the Hobart Reed ranch in Yavapai county. Vegetation is composed largely of *Bouteloua curtipendula*, with some *Hilaria Jamesii*. Almost no invasion by juniper has occurred to date. Some beargrass is present.

Poor-condition grassland range. Vegetation is composed largely of *Muhlenbergia Torreyi*, 5 per cent *Gutierrezia sarothrae*, 5 per cent *Eriogonum Wrightii*, and *Bouteloua gracilis*.



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you're losing. It also shows you *where* you're losing it. You get a good, clear picture of your overall management practices, their faults and their good points. The range survey also points out the problem areas—those areas which, though often small in size, can make or break a range.

On the general management side, a survey can give you such information as the kind of operation and class of stock that will give you the greatest economic return. It can give you the rate of stocking for a particular condition class. Not just the rate of stocking that will keep that range in its present condition class, but the rate that will bring that range up to excellent condition. It can show which parts of your range are better suited for use at certain seasons than at others. Or it may show that your range is more suited for continuous yearlong use, or for a deferred-rotation system.

Aids "Problem" Areas

As for the problem areas, a survey can show many things. For instance, it can show up faulty distribution of livestock with one area grubbed into the ground while forage elsewhere is going to waste. The survey will show the best location for new water developments or salt grounds, or fences to correct poor distribution. It will show the areas being invaded by noxious plants—not only the places already covered with brush—but also the good grasslands where a few shrubs and weeds are beginning to come in. A little work with a grubbing hoe on those areas may save thousands of dollars later on.

The survey can also point out a creek bottom where the forage has been trampled out, but that would make permanent pasture if reseeded to the right plants—a pasture that would carry your stock through that dry year when nothing else could help you, except rain. Or the meadow full of poisonous plants that have been causing losses from an "unidentified cause."

You may know about most of these things already, or at least have them in the back of your mind. But the survey will emphasize them and give you a solid base from which to start your improvement operations.

Once the indicators of the different condition classes are recognized, they are summarized in a bulletin known

Aggie House

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plus very efficient management of the financial affairs, have enabled Aggie House to clear part of the financial burden. A portion of the nominal monthly income can now complete the payments over the coming years.

Any Arizona farm boy interested in studying agriculture at the University is eligible to pledgship in Aggie House. The group enjoys the status of a fraternity and yet the boys are accepted through their individual applications. Students in the College of Agriculture consider it a distinct privilege to be accepted into the Aggie House, following their pledgship, by their fellow students and the faculty advisory board.

Each of the 35 to 38 members of Aggie House gladly assumes his share of the work and develops a sense of responsibility. Pledges start with kitchen police duty while upperclassmen have more exacting duties such as those of Joe Nesbitt, of Mesa, house manager and treasurer. He does all the buying and meets all financial obligations within the fixed budget.

This year the boys are under the leadership of Larry Perry of Mormon Lake and Frank Shown of Yuma, president and vice-president, respectively.

Prospective students in the College of Agriculture at the University interested in Aggie House should contact the president, Aggie House, 819 North Euclid Avenue, Tucson.

—F. G. Harland, Assistant Dairy Husbandman, is Adviser to the Aggie House group.

as a range-condition guide. The rancher can take this guide, make his own survey, and reach his own conclusions about his range. The bulletin lists the signs of each condition for a certain type of range, describes these signs in plain language, and is well illustrated.

Work on these range condition guides is going on now, although necessarily slowly, because of the vast areas to be examined, the many factors to be evaluated, and the limited personnel. Even with these problems, range-condition guides for Yavapai county should be published within the year, and others within a reasonable time thereafter.

—R. R. Humphrey is Associate Range Ecologist, A. L. Brown is Assistant Range Ecologist.

Farming Root-Rot Infested Lands

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in root-rot susceptibility and yield at the time of the second picking.

The three rotations with flax as a cash crop produced good yields but were somewhat less profitable than the best cotton rotations. Sesbania and guar as green manure crops were about equal in their effect on yield of flax.

An early-maturing variety of guar which could be harvested in time to plant flax on the land, produced lower flax yields but the total return per acre was greater on account of the value of the guar seed. Unfortunately, this variety of guar is moderately susceptible to root rot and is less desirable on this account. Both sesbania and the branching varieties of guar are highly resistant to root rot and, therefore, desirable in rotations to control root rot.

In 1949 all plots were changed, except the two-year rotation, and cotton planted on the plots which had been in flax and green manure crops for five years. Only a trace of root rot survived in these plots. In the cotton rotations while yields were maintained, there was no marked reduction in root rot although the death of plants was considerably retarded and occurred only after a greater part of the crop had been matured.

—R. B. Streets is Associate Plant Pathologist.

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KOY Phoenix, 9:45 a.m.—Farm Demonstration Garden Program.

KCKY Coolidge, 12:15 p.m.—Extension Service program.

WEDNESDAYS

KYUM Yuma, 7:00 a.m.—Extension Service program.

FRIDAYS

KAWT Douglas, 12:30 p.m.—Farm and Ranch program.

SATURDAYS

KOPO Tucson, 11:00 a.m. Extension Service program.

KOY Phoenix and KSUN Bisbee, 12:30 p.m.—University of Arizona Farm and Ranch Hour. (Check locally for possible change in schedule.)

KGLU Safford, 12:30 p.m.—Stepping Along with the Extension Service.