How to carry more livestock on the same number of acres

Then how did Nature handle this selectivity situation when the number of bison in the Great Plains alone ranged upward to 50,000,000 head?

Remember that bison were migratory in their grazing habits. Although they grazed in large herds, they continually moved to new areas.

After the herd passed even the most palatable and the preferred plants had a period to renew their leaf volumes and remain in a healthy, vigorous state.

This concept has triggered many cattlemen to devise grazing plans simulating the original natural program. For stocker operations, rest periods can easily be provided by going to market early. But, with cows where year-round forage is required some form of planned rotation is needed.

Numerous terms have been used in describing the idea: Rotation grazing, rest rotation, deferred rotation, or planned grazing.

Regardless of name, the method has had surprising results in increasing plant vigor and production.

Rest, recovery vital

Basically, the success is due to the provision of allowing rest periods for the grasses. A rest period during the growing season allows all grasses, even the most palatable, time to regrow and stay healthy and productive.

Ideally the period of rest will occur at a different time each succeeding year. And, as an illustration, the most simple system would involve the use of two pastures.

Call these pastures A and B. Put into one herd all the cattle normally carry on the two separate pastures. (You can use more than two pastures.)

Then graze Pasture A the first half of the growing season and Pasture B the last half. This rests B during the early part of Summer and A during late Summer.

The next year reverse your system. Graze B the first part and A the last part of the Summer to complete the cycle.

What happens: You'll have provided the equivalent of a year-long rest for each pasture during the two-year period—while at the same time grazing your normal number of cattle.

And, your grasses will have responded to these rest periods by increasing their leaf and root volumes. The payoff is greater production. You should soon be able to carry more cattle.

You have many things to consider in designing your grazing system. This includes the number, size, and location of your pastures; kind of livestock; kind of grasses; water; and topography.

You may work up a two-pasture, three-pasture, four-pasture, or even eight-pasture rotation system. You might set up one to three different herds, too. There can be many modifications, as you'll note from the examples.

These are the major benefits from such a grazing system in your program:

1. Increased vigor of your grasses. This results in increased production.
2. Less selectivity or grazing preference by livestock for certain grasses.
3. Better grazing distribution by your cattle over a pasture.
4. Less labor and fuel expense since your cattle are grouped in fewer pastures.

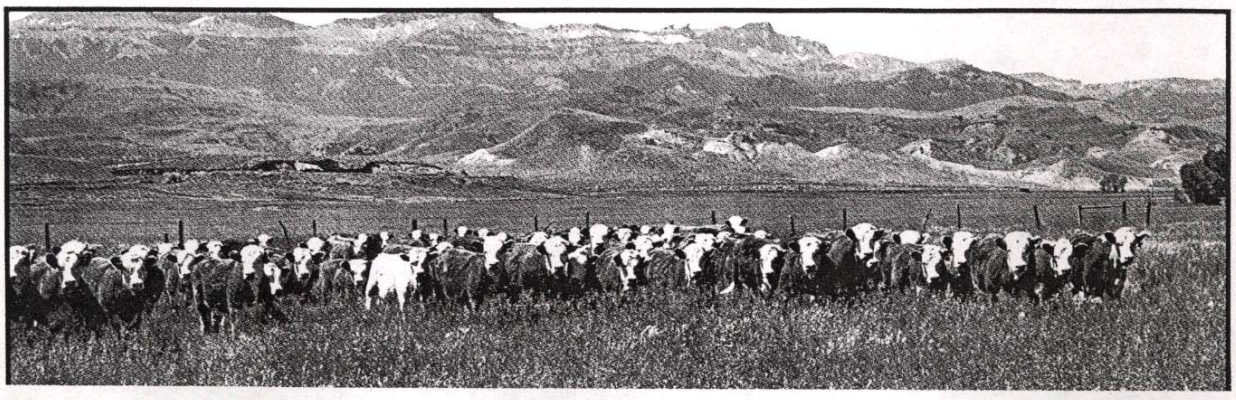
Although they're not the complete answer in themselves to grazing problems, grazing systems do alleviate some of the biggest forage problems you face. However, practicing the old adage of "Take half and leave half" is still essential for any grazing system to succeed.

Design your grazing system to involve all your forage resources within an operating unit.

Key entire program

This may involve only rangelands. Or, it may include use of both rangeland and seeded or special purpose pastures such as Fescue, Bromegrass, or Wheat-

(Continued)



Examples of grazing systems

Two-Pasture — Switchback System

G Graze Rest

Pasture	M A M J	J A S O	N D J F	M A M J	J A S O	N D J F
A	G		G		G	
B		G		G		G

Three-Pasture One-Herd System

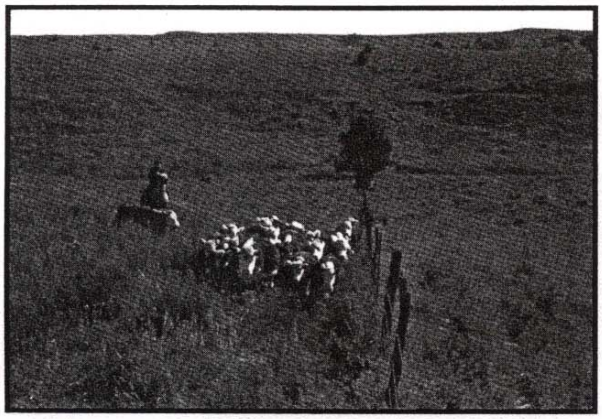
Pasture	A M J J A S O N D J F M	A M J J A S O N D J F M	A M J J A S O N D J F M
1	G	G	G	G
2	G	G	G	G
3	G	G	G	G

Three-Pasture Two-Herd System

Pasture	A M J J A S O N D J F M	A M J J A S O N D J F M	A M J J A S O N D J F M
1	G	G	G	G
2	G	G	G	G
3	G	G	G	G

One-Herd Multi-Pasture System

Pasture	A M J J A S O N D J F M A
1	G G G G G
2	G G G G G
3	G G G G G
4	G G G G G
5	G G G G G
6	G G G G
7	G G G



In left photograph is an example of rotational grazing paying off. Just three years before, the grass that's almost cow-high looked precisely like the pasture at right—a pasture with low vigor plants. Right photograph shows how the stocking rate for the pasture at the right was upped 32 percent with improvement in forage production gained from rotation grazing. Note various rotation options in table on the previous page.

Grass [Continued]

grass for early Spring and Fall grazing.

Bermudagrass, Bahiagrass, King Ranch Bluestem, Weeping Lovegrass, and Indiangrass are special purpose pastures you can use to supplement your rangelands during Summer months, depending on your own local area.

You'll need some finesse and planning to set up a sound, long-term forage program.

Drought may throw the biggest monkeywrench into your plans. But, most grasses entering a drought in a thrifty, vigorous condition have built-in reserves enough to endure one or possibly two years of heavier-than-normal grazing without any large losses.

There are also some other things you can do to build and maintain overall grass health:

Crossfencing, additional water facilities, seeding retired cropland and depleted rangeland to grass, developing special purpose pastures, and controlling brush and weeds will help you maintain and improve your pasture "crop".

Control brush and weeds

There's been a gradual invasion of brush and weeds into many of our grasslands. In fact, in some areas brush has become the number one pasture problem. And, brush continues to gain new footholds just about every year.

Nature's most effective tool in managing the spread of brush was fire, especially in humid and sub-humid areas. Fueled by luxuriant stands of grass, intense fires consumed trees and shrubs and prohibited their establishment.

But, wildfires are much less frequent today, thanks to greater highway and road development and more cultivation. As the effectiveness of wildfires diminished, other methods of control were employed.

Once established, though, most brush species are extremely persistent, and some form of control is usually necessary to initiate and speed grass recovery.

Mechanical methods have proved effective for reducing many kinds of brush. These include mowing, bulldozing, root plowing, chaining, chopping, and sawing.

More rely on burning

The use of fire is making a comeback as more and more managers are now using "prescribed burning" in their brush control programs.

Properly planned and conducted fires are an efficient and economical method of control. Adequate amounts of fuel, proper timing, safety precautions, and experience are essential ingredients in a successful burning plan.

You can also use hormone herbicides successfully to control many brush and weed species.

Chemicals are common in nature and many plants inhibit the growth of other plants by exuding toxic compounds. This is referred to as "allelopathy".

Many of these natural toxins have been synthesized into commercial herbicides. Herbicides can be applied as foliar sprays, pellets, or rubbed on with wicks. They can also be spot-treated with injectors, jets, or special guns.

You need to give special emphasis to the targeted species in selecting the right herbicide, rate and method of application, and weather conditions.

Brush control results can be quite variable. Complete eradica-

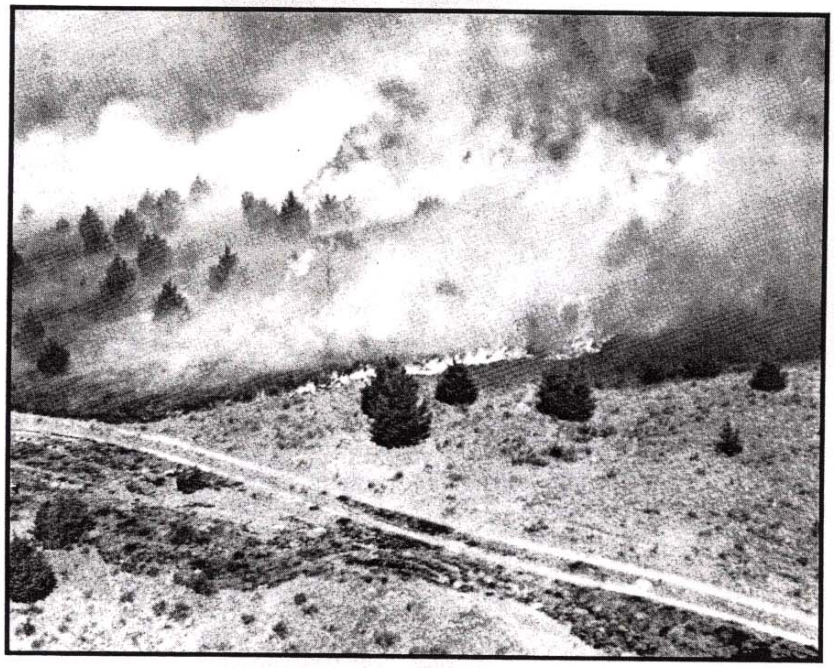
tion seldom, if ever, can be accomplished.

Opens shade canopy

But, treatment does reduce the competition for moisture and opens the shade canopy. This helps your grasses reestablish themselves.

To improve effectiveness, many operators are now integrating their brush and weed control programs and using combinations of treatments. Over the years this may involve a sequence of herbicides, mechanical treatment, and fire on the same acreage.

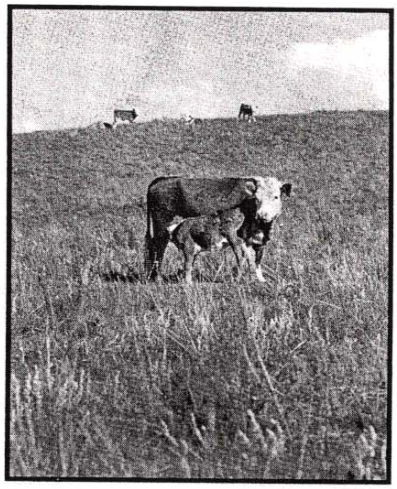
You also may want to consider "co-grazing", or the combining together of a cattle herd with a sheep or goat flock in your grazing program, as an increasing number of livestockmen are doing. Sheep and goats will control some weed and brush species.



Photograph: Soil Conservation Service

Judicious burning is another of the tools you can utilize in helping control brush infestations—Nature's own method of solving the problem of brush.

Should you look at other grasses



Many cultivated or introduced grasses can provide your livestock with excellent supplemental grazing. You must properly fit them into your grazing program, however.

Caution: These grasses have been overemphasized as all-purpose forage. Their real value and successful use has been as supplemental forage used to extend the green forage period.

Promotional efforts in some parts of the country have led to widespread replacement of rangelands with introduced grasses.

Need some care

However, take care, because most introduced grass pastures are really effective only when used for short, specialized grazing periods. They also require annual fertilization and some renovation.

When fertilizer costs are relatively low and livestock prices bullish, it may look to you that such a conversion is a good idea. But, when fertilizer costs zoom and livestock prices drop the situation changes fast.

There's a drawback

There's also another drawback. Establishing so much pasture containing just a single grass species approaches what's called a monoculture situation. What if an insect or plant disease outbreak is specific for your one variety?

Your pasture system will be most efficient when you have a variety of forage sources available—and balanced into a grazing plan sequence. This will also give you more flexibility of herd management and marketing dates.

Cool season grass pastures are excellent for early Spring and Fall grazing. But, they become semi-dormant during the warm Summer months. Growth ceases and your cattle gain less.

If you have some warm season grass pastures either in rangeland or seeded pasture your livestock probably can continue gaining well without the typical Summer pause.

Supplemented with protein concentrates, most warm season grasses can provide a low-cost Winter forage for livestock in many parts of the country.

Your most important range management ingredient: Action

Really, management of rangelands is relatively simple once you understand and follow the basic fundamentals.

But, to be effective, your range management requires positive direction...and action.

Work with Nature

All management begins with knowledge, is propelled by decision-making, and is improved with experience. Management of rangelands differs in concept from working with introduced or tame pasture management.

Range management is actually the art of working with Nature

It's working to maintain an ecological balance—balancing grazing with production. Your rangeland management primarily involves grazing manipulation rather than intensive agronomic practices.

Your first prerequisite is a grazing scheme to maintain your forage plants in high vigor. The stage that follows in natural sequence is a gradual shift in the kinds of grasses toward restoration of the original native grass composition and productiveness.

It's not uncommon for two side-by-side pastures to vary in production by 20 to 40 percent, even though similar in size, soils, topography, and kinds of grasses. This difference is solely due to the health and vigor of the plants. With sound grazing management you can usually restore vigor to an overgrazed range in one to three years.

Once you restore vigor, then the stage is set for the more productive grasses to enlarge in size, increase in numbers, and crowd out less desirable plants.

Just keep in mind that this process is a gradual, patient transition unmarked by sudden surges. Many positive, though subtle, things are happening as ranges improve.

Increased plant vigor means better protection to the soil surface and assures greater root volume below. Action of soil organisms gradually improves soil fertility and organic matter increases. A greater amount of the rain that falls enters the soil, less is lost as runoff, and so more moisture is available for plant growth.

You may not notice year-to-year changes. But, a two- or three-year span may reveal striking changes in increased production.

Grass is THE crop

Many cattlemen view livestock—not grass—as their base crop. But, in spite of her wonderful ability to utilize roughage and convert it to a usable food for man, a cow is still just a harvester and converter.

Although she requires considerable management attention, including breeding, vaccinating, spraying, and marketing, a cow's basic need amounts to eating a given volume of forage every day. The same applies to sheep, of course.

Like crude oil is to a refinery, grass is to a cow. Grass, the raw material of the livestock industry, is your most important crop!

References

Allred, B. W. 1950. Practical grassland management. Talley Press. San Angelo, Texas. 307 pp.

Branson, F. A. 1953. Two new factors affecting resistance of grasses to grazing. Range Manag. 6:165-171.

Crider, F. J. 1955. Root growth stoppage. Tech. Bull. No. 1102. USDA-SCS. Govt. Printing Office. Washington, D.C.

Dwyer, D. D. 1961. Activities and grazing preferences of cows with calves in Northern Osage County, Oklahoma. Oklahoma State University Expt. Sta. bull. No. B-588. 61 pp.

Hitchcock, A. S. 1950. Manual of the grasses of the United States. USDA Misc. Publ. 200. Govt. Printing Office. Washington, D.C. 1,051 pp.

Moorefield, J. G. and H. H. Hopkins. 1951. Grazing habits of cattle in a mixed-prairie pasture. J. Range Manag. 4:151-157.

Odum, E. P. 1975. Ecology: The link between the natural and the social sciences. Holt, Rinehart & Winston. 244 pp.

Rice, E. L. 1974. Allelopathy. Academic Press, Inc. New York City, New York.. 353 pp.

Weaver, J. E. 1954. North American prairie. Johnson Publ. Co., Lincoln, Nebraska. 348 pp.

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