

Eight Principles of Range Management

Ray Banister

I have heard speech after speech on what brilliant range managers buffalo were, and about the pristine quality of the range when only buffalo used it. With this in mind I have come up with 8 principles of range management simple enough for even mutant teenage buffalos. I believe these 8 principles to be the least common denominator in range management. They are interrelated and they are as follows:

Principle 1—Plant Succession.

As a plant community recovers from disturbance the population species shift from annuals to grasses, to shrubs, to trees. Nothing ever stays the same in nature. It is dynamic, there is no status quo. The life forms and species of plants in a biotic community will change for the better or worse depending on the intensity or type of use. Within the constraints imposed by climate, soil, topography, and time, rest from grazing will allow the dominant plants to change from annual weeds, to perennial grasses, to shrubs, to trees.

If there are too many trees or shrubs, a pasture is becoming stagnant for over-rest. If there are too many annual weeds, the pasture is being overused or was mistreated in the past. Management attempts to maintain the dynamic flux of plant species within the boundaries needed for optimum production.

Principle 2—Variety is Stability

The greater the diversity of species and age classes of plants on a range site, the greater the utilization of available water, nutrients, and space, and thus more total production. When growing conditions (climate, disease, insects, etc.) are unfavorable for one species, another species takes over. A diverse plant community denies access to noxious weeds, maintains dependable forage production, and insures a long green feed period.

Principle 3—Severe Grazing

Severe defoliation is common in nature. Fire, hail, drought, and grasshoppers are the main cause. Under these natural forces nearly all aboveground material is removed. Animals, on the other hand, overgraze plant by plant, species by species, causing the less palatable species to be grazed last. If pastures are used to the 50% level, the less palatable species are left untouched, which leads to decadence or gives the ungrazed an advantage over the grazed one. Severe grazing gives more equal utilization.

Severe grazing also breaks the destructive cycles of insects such as June bugs and black grass bugs. It kills off senile plants, leaving space for seedlings to develop. If

you try to fight the war against noxious weeds with babies and old folks, you lose.

Snowberry can be used to monitor severe grazing. Since it is one of the less palatable plants it will be one of the last species to be grazed. So when it is grazed you have applied the treatment needed.

Principle 4—Long Rest.

Degree of use and length of rest are directly connected. The more severe the use, the longer the rest period should be. Rest periods should never be more than 2 years in length because biomass usually peaks by that time. On the average, production doesn't get much better. Peak biomass can be monitored using fenceline contrast between the pasture and areas which have been ungrazed for more than 2 years, such as fenced roadsides.

Rest also allows seedling establishment. If a seedling is grazed more than twice in the first year, it is lost for future production.

The plant canopy resulting from appropriate rest controls grasshoppers and provides litter. The ground cover slows runoff following heavy rain showers. Seventy percent of the rain will run off from a shower falling at the rate of 2 inches per hour with only 10% ground cover. But with 70% ground cover, one will lose only 10%. Thus litter prevents drought.

Rest also provides forage reserve for drought.

Principle 5—Noxious Weeds.

There is nothing nice about noxious weeds. Leafy spurge is said to destroy 75% of the carrying capacity of the range, while knapweed is said to destroy 95%. One person stated that leafy spurge has already destroyed pastures for 300,000 cows. Think about what that does to land value and tax base, not to mention the destruction of wildlife habitat.

The combination of severe grazing and long rest seems to give the range a competitive fitness against noxious weeds.

Principle 6—Diet Modification.

Once noxious weeds spread and form large infestations, control with chemical is uneconomical. Although sheep may be used to control them, the sheep must be diet modified. This is easily done by exposing them to leafy spurge at around 45 days of age.

Deer forced into hay yards during severe winters will starve to death. But let the flora and fauna of the rumen gradually adjust to hay, then 75% of their diet will be alfalfa.

New range plans won't work unless cattle and sheep diets are modified to make them efficient forage harvesters.

Principle 7—Perturbations.

If any dynamic system such as nature is perturbed, it will return to the beginning. In range the beginning is seeds, roots, and rhizomes. At the end of the drought of "34" and "36" in Miles City, 92% of the grass had died. It didn't matter if the use was light, moderate, or heavy. Because of seeds and roots remaining after the drought, plants were able to re-establish. Thus, sustainable cattle production demands old stands of grass for feed during drought and adequate seed production in good years to guarantee a quick comeback following drought or other disturbance.

Principle 8—Animal Performance

Peak individual performance is achieved by continually grazing cattle on pasture in a declining range condition. It is therefore a contradiction to have goals of top animal performance and excellent range condition. A goal that is

compatible with good range management is maximum sustainable beef production per acre.

Summary

The way I incorporate these 8 principles (which I borrowed from other people) in my range management plan is to rest the pasture until peak biomass is reached. The pasture is then severely grazed from the most efficient harvest. I use forage efficient cows (Herefords) that don't crash (fail to produce) when their diets are modified.

One may depart from these 8 principles into the fringe, which is good. It provides diversity. However, one must always return to these 8 principles because they rest on three Biblical truths:

1. The first will be last and the last will be first.
2. Him who has I will give more to. Him who has not I will take away what he thinks he has.
3. Exalt in tribulation for it gives perseverance.

Change on the Range

Chuck Quimby

I was out on the Range
a while ago past,
enjoying my ride
and hopin' it'd last,

Checkin' the grass
and the use on the shrubs,
Monitorin' the cows
and the state of their grub.

Things lookin' good,
I was proud of my job.
Rode back to the truck
and unsaddled ol' Bob.

On the way back to town,
I thought of my day,
of the green grass a growin'
and life's special way.

I was managin' the range
the best that I could.
Producin' grass and beef,
wildlife, water, and wood.

I felt real professional,
known' what was best,
for the land and the ecology
and all of the rest.

But back at the office
was waitin' a shock—
a group of environmentalists
a wantin' to talk.

They weren't too happy
with the state of the land:
The range hadn't been managed
with a lightness of hand.

It seemed that somehow
the grass had been hurt.
The riparians were dying,
the soil erodin' to dirt.

Those damn bovine beasts
were ruinin' the range.
A plague on the land
like a bad case of mange.

I stuttered and stammered
and promised to check
on the problems out there
and correct them by heck.

As the environmentalists went out
another group came in,
wantin' the range
for their recreatin' in.

Some wanted nature
with no trace of man.
Others wanted campin'
just like Disneyland.

The County wanted income,
the ranchers more grass.
Hunters more wildlife,
All wanted my . . . job!

Confused and dismayed,
Upset, filled with fear,
my mind wasn't comprehendin',
Oh what did I hear?

My orderly world
was fallen' apart—
Everyone questionin'
my science, my art.

I knew what was best
and I managed right well.
"Trust me," I pleaded.
Oh damn it to hell!

Well, time has gone on.
The changes have come.
I've evolved to meet them,
but not without painin' me some.

There's a new way of thinkin'
and managin' the land
that involves lots of partners
all lendin' a hand.

The game's much more complex.
The rules harder to play.
Tryin' to balance people and resources
in a caring professional way.

I know that these changes
have come for the good,
and I try hard to work with them
'cause I know that I should

But sometimes when ends
another long day
of discussin' and listenin'
in this new fangled way

My mind takes me out
from this desk I now ride,
to a range in the mountains
with vistas so wide

And I find myself thinkin'
of the changes in the job,
and find myself wishin'
for a day with ol' Bob.