

# The Savory Grazing Method or Holistic Resource Management

Allan Savory

Over the last few years there has been an ever-increasing interest in America in the Savory Grazing Method. During the recent annual meeting of the Society for Range Management in Albuquerque, N. Mex., nearly 500 people visited the nearby SGM scheme operating on tribal Indian land. As a consequence of such interest I have been invited to write this article for *Rangelands*. I do so in the hopes of expanding understanding and of clearing some of the many myths and misconceptions about SGM abounding in the profession and amongst ranchers. For all conservationists, as well as livestock owners, an answer to the desertification problem has long been sought. It is needed to stop our dams silting, our water tables dropping ever-lower, our wildlife being increasingly threatened and to aid the millions of people living in abject poverty on drying lands in the Third World. Even America will soon realize that water is her Achilles heel and that her wealth and prosperity are dependent upon stable catchments. In Holistic Resource Management (SGM), we undoubtedly have an economically sound, self-sustaining answer to the desertification problem for America as well as the poorest nations bedevilled with it. The fate of many countries depends on how SGM is developed and extended from America. Unfortunately, for some reason America is a nation of extremes where people en masse rush into new things often with enthusiasm unmatched by knowledge, then after a few tragedies react en masse the other way.

Generally the American attitude to SGM has been no different. Many have rushed into SGM too fast and with too little knowledge. Most of the knowledge available to the average rancher or university is misinformation and myth spread by the universities themselves, i.e., "SGM is a wagon wheel system; SGM is a cell grazing system; SGM is short duration grazing; SGM is rapid rotation grazing," and so on. All of these descriptions are totally wrong. Yet how many ranchers, government agencies and universities do you know who have rushed into it in the belief that it is one or other of the above?

**First, it is important to realize** that what I call Holistic Resource Management is a wildlife management technique even where there are no livestock on the land. It is a

*Editor's Note:* Since there was so much interest in Albuquerque of the Savory Grazing Method I asked Allan Savory to write this article for use in *Rangelands*.

For further information on this subject refer to Rod Heitschmidt and John Walker's article in this issue. Additional references: Page 234, December 1980 *Rangelands*, "The Savory Grazing Method" by Allan Savory and Stanley D. Parsons; Page 75, April 1982 *Rangelands*, "Rapid Rotation Grazing Programs in Texas" by Robert E. Steger.

watershed management technique even where there are no livestock on the land. It is riparian and fish management technique. It is also a method of managing livestock on the land whereby the livestock can be used to reverse the desertification process very economically with or without fencing. It is also a method of managing livestock on ranges or on planted pastures whereby greater production can be achieved both from the land and the animals and with greater profitability than conventionally. It is a method of making conventional range management techniques economically sound where they were economically unsound. It is not just another grazing system, of which there have been so many.

Throughout the world there are vast areas of what are known as the "brittle environments". These are areas where there are prolonged periods of the year in which conditions for plant growth are adverse. In the most brittle of these areas periods adverse for plant growth occur in the growing season as well as during the long non-growing season. Most of these areas are associated with arid and semi-arid climates but some can extend into remarkably high rainfall zones.

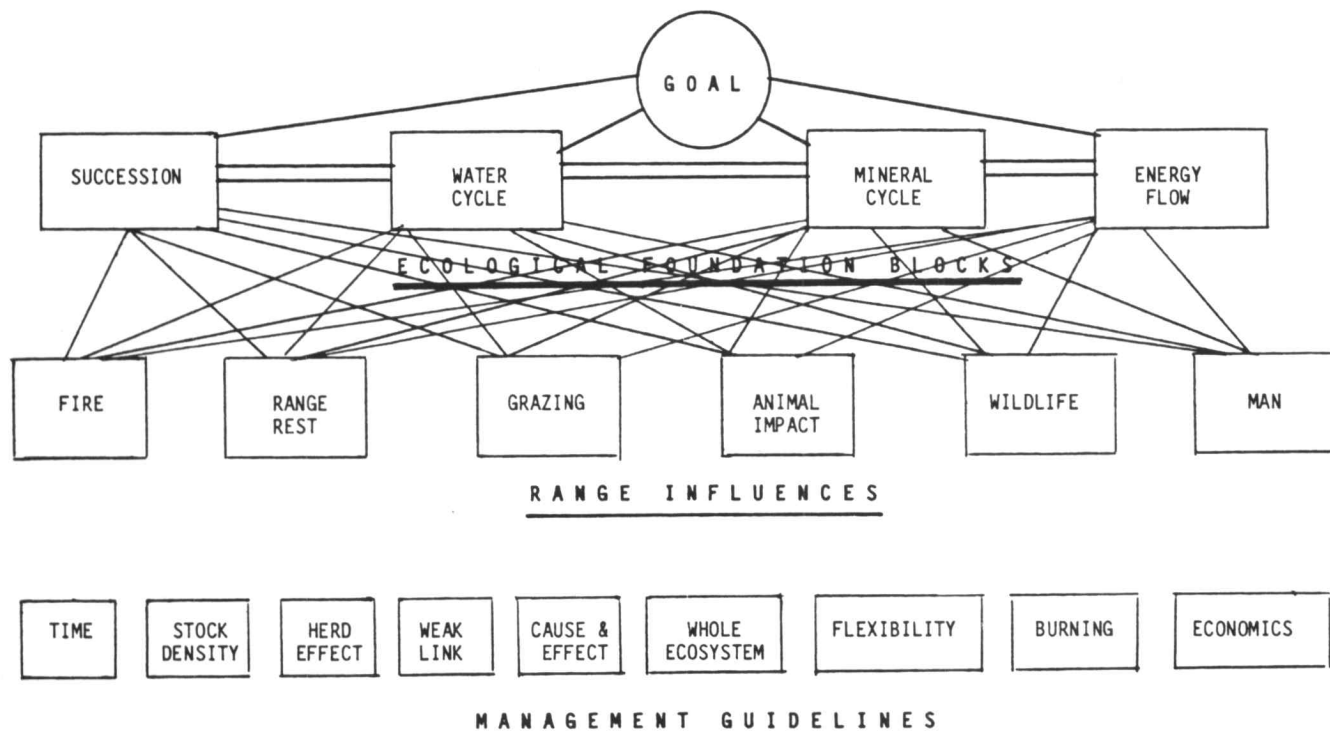
Throughout America and the rest of the world these brittle environments are mainly used for livestock production. Throughout, they are deteriorating, become drier, carrying fewer and fewer animals and in fact becoming deserts to varying degrees and at varying rates.

For a long time rangers have been aware of the problem and have been trying to halt the decline. Unfortunately, all of the remedies tried involved reductions in animal numbers as a prerequisite in the basic belief that too many animals was the fundamental cause of the overgrazing which was blamed for the deterioration. Commercial ranchers and tribal stockmen have generally denied the degradation that is taking place and have strong political voices resisting any interference—so great is their fear of any reduction in stock numbers. This fear is completely understandable as reductions in animal numbers has never yet produced any lasting success while they have certainly produced financial ruin and political catastrophe.

The problem of desertification does not belong solely to the rancher. It is everyone's concern because in the end water becomes the limiting factor on most human endeavor in the arid and semi-arid lands. All of agriculture depends on it, as do cities and industry. Although Albuquerque receives a considerable amount of its water from a dam that is very new, engineers are now trying to decide by how much the wall should be raised to cater for the volume of water already taken up by silt. No amount of raising the dam will ever solve the problem of desertification, which is what is taking place.

SAVORY GRAZING METHOD

OR

HOLISTIC RESOURCE MANAGEMENT

**The answer to the desertification problem** was developed in Zimbabwe from observation of the basic principles in which plants, animals and soils had evolved together in the brittle environments. Most of the large populations of herding ungulates existed in these environments before man learned to use fire or domesticated animals and started the serious desertification process. In modern times, man's interference with vast animal congregations through land division and development, and the use of excessive fire, have doomed many wild populations. They are no longer able to exist in harmony with their environment because they can neither concentrate, nor move sufficiently. Because of this the desertification process is now almost as serious in some national parks as it is on lands under domesticated animals.

The answer, which has come to be known as the Savory Grazing Method, is perhaps better understood if the alternate name of Holistic Resource Management is used. It is a way of producing a predetermined goal for the land in question—be it a ranch, a tribal area, a dairy farm or a national park in the middle of Africa—or any other unit of land being managed. Whatever this goal might be—preservation of a rare semi-desert animal or plant species; high numbers with great species complexity and stability in a national park; stable grassland with high livestock carrying capacity (numbers) in a tribal area where wealth is measured in animal numbers; high yield of meat per acre in a sophisticated commercial ranch or some combination of livestock and wildlife either on a ranch or in a public land area involving other users—the goal will always rest on four fundamental foundation blocks or ecological concepts. These are:

1. Succession of plants, animals and soils together as one entity

2. Water cycle in the ecosystem
3. Mineral cycle in the ecosystem, and
4. Energy flow through the ecosystem

**The key to the management of all four** of the foundation blocks, to produce the desired goal, lies principally in manipulation of the soil surface. This manipulation or management has to be done using all of the resources available in the most efficient manner. However, whatever resources are available can only be directed at the foundation blocks through the action of what in SGM are known as the range influences (see diagram). These are:

1. Range rest
2. Fire
3. Grazing by livestock
4. Animal impact (meaning their physical impact on the soil and vegetation)
5. Wildlife
6. Man (meaning all of man's direct interventions, i.e., fencing, brush clearing, reseeding, soil ripping, contouring, dam building, chemical treatments, and so on)

These cover all of the range influences that exist, short of weather and natural catastrophe which are for all practical purposes beyond man's control.

With the application of SGM there are finally a series of management guidelines which enable the operator to utilize the resources available in the most economical, effective and efficient way possible. Some of these guidelines are in daily use, some are brought into play periodically when a particular problem or situation is faced, and others are used when undertaking strategic (long-term) planning and during annual budgeting. The guidelines are shown as headings in the diagram but are not explained in this brief article.

To help readers understand SGM it is best to use the analogy of a computer as there are great similarities. If you know what you want to do with the computer and you feed in the right information it will aid you in achieving the result rapidly and surely. If some factors change and you observe the changes and feed in the new information the computer will again aid you efficiently in getting to your goal. Computers have had to go through a complex development stage but have now become simpler, more "user-friendly" as they say. SGM has also had to go through a complex learning and development process since the original breakthrough in thinking and is now able to be operated more simply as the whole complexity is increasingly understood. There is, for example, the newest Level 1 SGM which is now being operated by tribal stockmen with very little training—much like the latest "user-friendly" computers being operated by the average householder. In the same way as the householder has to be backed up by a computer service organization, the rancher, tribal stockman, or wildlifer has to be backed up by advisory services. Government and university advisors are now being trained as rapidly as possible. Unfortunately this knowledge has become available to Americans at the same time as severe restraints have been imposed on the training programs of all the government agencies charged with land management. Politicians are sadly lacking in an awareness of the significance of this training.

SGM is universally applicable and is being applied in various schemes throughout the arid United States and in various parts of Africa. The principles do not change from the deserts to the jungles, from the arctic to the equator. All that changes is the detail—or information fed into the computer.

**Being a new approach altogether** to the range deterioration problem it should not be surprising that SGM is totally different from any of the approaches that were in use. The differences are too many to list here but two which have caused the greatest unrest in the range profession are the facts that:

1. No matter how bad the range deterioration there is never a need to reduce stock numbers to start the reclamation process. As a general rule, the conventional or government-prescribed stocking rates can safely be doubled in the first year of operation as long as adequate time control is brought into the grazing handling. Furthermore this doubling of government or conventional rates can be done regardless of how poor the range condition is at the time.
2. It is not a grazing system. Anyone describing it as a grazing system is merely indicating that he has not yet understood the holistic approach to the management of all resources simultaneously, with constant monitoring and adjustment to achieve a goal. Applying Holistic Resource Management to a trout management problem could hardly be called a grazing system!

Returning to the computer analogy, you would not if you used a computer in your research call the computer a "research system". It is a tool in the same way as SGM/HRM is a tool in the hands of the land manager.

Let me take this opportunity to further clear some of the misinformation spread so widely and doing so much damage in America. Some say SGM is a "system of non-selective grazing". This is totally erroneous as, depending on the goal, every effort is made in the management guidelines and manipulation of the grazing influence to ensure the highest

possible selection by the livestock. It is through this that ranchers correctly applying SGM are achieving higher animal performance with higher stocking rates and that in some cases yields of meat per acre have risen by as much as 200%.

Some say it is a "cell system" or the "wagon wheel system". Again this is totally erroneous and can only lead ranchers to costly error if they believe it and apply it as such. SGM, if fencing is used for the time control of grazing (herding may be used), can use any fencing pattern. It is not at all necessary to have a radiating fence design. The radiating design has become possible because two of the range influences—grazing and animal impact—are time controlled with SGM. This means that there is little danger to the land where fences converge on one point. However, this only holds true provided common sense is applied; the emphasis is on time-controlled and not short grazing periods, and the animals are not made to always move through the center. And that is yet another damaging myth—that water has to be in the center and all movement controlled through the center. There are many cases where there is no water in the center of a radiating cell and it is definitely better not to make all livestock moves through the center.

**Another misconception that concerns many** rangemen is that I (and thus SGM) am against brush clearing. I am totally *for* brush clearing as long as it is part of the goal. I am, however, one hundred percent *against* economically unsound brush clearing. With the SGM approach, brush clearing is only used when it is in keeping with the goal and is economically sound. Perhaps I caused this misunderstanding by stating in public that over the last four years I have seen much brush clearing in the U.S. and fully 90-odd-percent has been economically unsound. This is certainly the case as a tremendous amount of *the brush encroachment on American ranges has taken place due to overrest of the ranges*—mesquite is a good example. Vast sums are spent clearing the brush only for it to return as the range continues to be both overrested and overgrazed under conventional grazing systems and rotations.

Yet another serious misconception being spread, in Texas in particular, is that SGM is Short Duration Grazing. I recently inspected two grazing cells in Zimbabwe where SGM had been applied at a high and very successful level. These had been increasingly successful through a variety of seasons over many years applying the time-controlled grazing used in SGM when the goal involves higher successional grassland. The operators were given inadequate training due both to the newness of the technology and the war and have now operated for four years under Short Duration Grazing, i.e., they operated as a grazing rotation with short grazing periods of 1 and 2 days length. Both cells have suffered as a result of the inevitable overgrazing, which has been very severe indeed. One currently contains no livestock and the other is desperately short of forage. In addition to the overgrazing the soil surface has reverted to a low successional level which has led to a considerable amount of new erosion in one case. These ranchers are currently in a drought situation but that is not responsible for the problem as a drought does not produce overgrazed plants with distorted leaf patterns or hollow dead centers. No range can suffer four years of severe overgrazing and then carry much stock through a drought.

**Ranchers should be very wary of Short Duration Grazing** as even with development to the 30- and 42-paddock levels,

and grazings as short as one and two days, severe overgrazing will occur. No matter how short the grazing periods, overgrazing will result unless the grazing periods are what I call "time-controlled" which means that the grazing periods relate to the daily growth rate of the plants in the growing season. The grazing time on the range has always to be linked to three things simultaneously. These are:

1. the actual rate (or speed) at which the plants are growing during the grazing period;
2. the time when the animals are likely to return to graze that land and the rate (or speed) at which the plants are growing during this time; and,
3. the availability of forage to meet the nutritional requirements of the animals.

Short grazing periods such as used in Short Duration Grazing which are not "time-controlled" can only prevent overgrazing if long rest periods are constantly given, regardless of the growth rates of the plants. If this is done it results in very serious deterioration of livestock performance. For this reason, Short Duration Grazing must not in any way be confused with SGM. The Texas A&M claim being made at many Range Society gatherings that SGM is the Savory way of doing Short Duration Grazing is totally incorrect, although very flattering. For those without a deep knowledge of Short Duration Grazing, I am extremely familiar with this grazing system as I developed it. Texas A&M copied it from Zimbabwe. When you are aware of this you will realize that what A&M is asking is that I should now call SGM "The Savory way of doing what Savory did 15 years ago". Personally I think we should just get on with Holistic Resource Management as it has developed to this day. Much as I respect Texas A&M University and its professors, I am not prepared to go backwards to something I have found does not work and which I know they will eventually find out.

Dr. Robert Steger, professor of range management at Angelo State University (San Angelo, Texas), states in a recent report: "There is a definite need to distinguish between Short Duration Grazing Systems that incorporate only two dimensions—number of animals and land area—and those grazing programs, regardless of name, that implement the third dimension, the time factor. Regardless of what we call the time factor it does make a marked difference in forage and animal performance."

Let me list some of the main advantages and disadvantages of SGM as it affects this nation and others following its lead in range technology.

#### Advantages

1. It provides the technology for halting the desertification process.
2. It is economically sound and thus can be initiated or applied with little capital and can generate income from production.
3. It does not require a range management degree to learn and thus can be applied to vast areas of the world where there is a drastic shortage of university-trained personnel.
4. It can be simplified enough in application for illiterate people to be able to run it successfully with periodic advice.
5. It can be applied universally, including to lands with nomadic populations.
6. It is a management technique which can make wildlife and livestock ranching compatible and this could be

used in buffer zones around some of the dwindling and threatened national parks of Africa and elsewhere.

7. It never requires stock reduction even on the most "overstocked" and deteriorating ranges.

8. It leads readily to better livestock performance and management including more efficient application of some of the latest genetic advances.

#### Disadvantages

1. It needs some training. An operator (cowboy, tribal stockman etc.) needs very little, but an advisor, or a rancher handling an entire ranch, requires sound training. This has to involve initial training and some form of continuity training for field diagnosis, control and monitoring.

It requires management. This is no disadvantage for the tribal stockman who handles his livestock daily or for the efficient rancher. It is a disadvantage for those who have been able to enjoy releasing cattle into a vast area of land and going back six months later to gather them.

3. It may (and often does) lead to a reduced individual animal performance on high performance herds during the initial learning period. This is usually offset by higher profitability due to a healthier ratio of gross income to overhead costs. There appears to be a relationship between training received and the degree of performance drop experienced. The greater the training the rancher receives the less he can anticipate problems with individual animal performance.

The current position in America is that whereas a few years ago Americans were having to trust or doubt my words and explanations, an increasing number of SGM schemes are now scattered around the country. One excellent scheme is being run by Angelo State University in San Angelo, Texas. On this grazing cell it is of interest to see that the forage measurement shows the same amount of forage in the cell as in the "Four Pasture Three Herd System" control, despite the fact that over twice as much grazing had been taken out of the cell as from the control. Many other schemes are being monitored by universities or government agencies. In New Mexico, several of these have shown statistically significant decreases in bare ground in the first year of operation. And that is where it all begins and ends—with soil surface management.

By the end of 1983 nearly 300 American rangers from the Soil Conservation Service, U.S. Forest Service, Bureau of Land Management and Bureau of Indian Affairs will have had a basic introductory training in SGM. Many wildlifers from state game and fish departments and a number of university professors and staff will have been given the same introductory training. A school to train ranchers and provide continuity training is in operation and more are planned. The Navajo Indian Tribe which owns some 16-million acres of land have set up training and started organizing for more widespread application. Other tribes are also starting to apply SGM with BIA assistance.

**What is most needed in America today** is to greatly expand the training facilities and government aid to ranchers and operators in the field with the application of Holistic Resource Management. This means greatly expanding both the initial training and the in-depth training of the government agencies and university extension services. This needs a non-profit oriented center (preferably an operating four-

dation supported by several large foundations in a wide range of conservational and agricultural fields). At the moment this service is being provided by an American government interagency committee and myself but I cannot meet the increasing demands of the American government and the university system and am currently training too many people at too low a level. The interagency committee, which administers the school I teach, is aware of the present serious dilemma. However, as stated earlier this new and vital technology has coincided with a period of severe

government restriction on all training programs. This is tragic when it is realized that ultimately the strength of any nation lies in the stability of its natural resources. The once powerful civilizations of the past will never be powerful again as their natural resources were destroyed. And they were destroyed by livestock not war. Today, the money spent on only one sophisticated plane or tank would pay for all the training needed for all the agencies for many years into the future and in the end would ensure a stronger America. ●

# Is No Grazing Really Better Than Grazing?

Lee E. Hughes

Often is heard the lament from certain quarters of society that livestock grazing should be more restricted and/or totally prohibited on public lands.

If the scenario of totally prohibiting livestock from grazing on public lands would occur, would range condition improve to a degree that would be something ecologically ecstatic to cheer about?

The Arizona Strip District of the Bureau of Land Management has 36 grazing exclosures established at different times in all its inherent vegetation types. The District, through its range specialist, decided to determine if exclusion from grazing as compared to an active grazing situation demonstrated a consistent difference.

## How it Was Done

The district examined 31 of its exclosures. The method used to measure the specie frequency and groundcover was the Pace Frequency method developed by University of Arizona's range personnel. Under this method, individual plots are observed along four parallel transects with 50 plots systematically located at one pace intervals along each transect.

Generally 200 plots were observed both inside the exclosure and outside the exclosure. Most exclosures are about an acre in size, however, some were smaller and the number of plots were correspondingly reduced in number. Some of the exclosures were larger and had more plots placed. The exclosures ranged from .5 to 960 acres.

In analyzing the data from the exclosures, the vegetation was categorized by vegetation type and the age of the exclosures. The age structure categories set up on 0-5 years, 5-15 years, and 15 years and older. We counted the number of exclosures where species occurred more frequently and we also totaled the frequency and averaged it out for all exclosures in ecosystem. The vegetation types most common on the Arizona Strip are sagebrush, pinyon-juniper,

desert grassland, and desert shrub. Some of the exclosures that occurred in the pinyon-juniper and sagebrush types had also been treated by plowing, chaining, spraying, and seeding so these were further broken out in separate categories within their respective vegetation types and age class. The following discussion will be by vegetation type.

## Is There a Difference?

*Sagebrush.* There are 13 exclosures in the sagebrush type; however, 3 had their trend determined in 1979 and reported in an article that appeared in the *Rangelands* of February 1980. This analysis will deal with the other 10 exclosures.

All 10 exclosures occur in land treatment sites and 8 of them have grazing systems of deferred or rest-rotation grazing systems around them. Two are in seasonal use allotment which are used continuously during the summer. Rainfall in this zone is around 10.5 inches average per year (range 4.4 to 16.5 inches) according to rain gauges at sagebrush



**Sagebrush Zone.** This exclosure had slightly more warm season grasses inside, but was similar in all other aspects, to the outside.