

# Controlled Grazing and Power Fence®

by Arthur L. Snell

## DEFINITIONS

**Controlled grazing**—a grazing pattern designed to increase carrying capacity, eliminate overgrazing and overrest, and utilize herd effect. A controlled grazing unit is divided into eight or more "paddocks" with all livestock concentrated in one paddock and rotated according to plant growth.

**Overgrazing**—consists of livestock selectively grazing and constantly regrowing desirable grasses; generally occurs in lightly stocked pastures where cattle are left for extended periods of time. Most pastures under current livestock management conditions are understocked and overgrazed.

**Overrest**—grass plants (particularly bunchgrasses), when rested for long periods, will mature, become fibrous, and die back from the centers. This condition occurs in totally rested pastures and also occurs in pastures where livestock are lightly stocked. Overgrazing and overrest may occur simultaneously.

**Herd effect**—the impact on soil and vegetation from large numbers of livestock concentrated in small areas. Herd effect includes bite damage, hoof action, recycling of manure and urine, and animal behavior.

**Nutrient cycle**—describes the recycling of manure and urine through high-density livestock populations to increase nitrogen in the soil. Hoof action aids the nutrient cycle by breaking down dry matter and breaking up soil cap.

**Brittle environments**—generally defined where rainfall is not satisfactory for plant growth during part or all of the growing season.

**Stable environments**—generally areas with rainfall exceeding 24 inches per year; the more rainfall, the more stable the environment.

**Strip grazing**—exposing cattle on grass to fresh feed on a daily basis by portable or movable fences or even stationary fences; generally provides enough forage per strip for one day's feeding.

A double-barreled revolution has swept the cattle industry in the last five years. Controlled grazing and the introduction of Power Fence® have both dramatically affected the future of the industry in a positive and productive manner.

Controlled grazing can be described best as a grazing pattern designed to increase carrying capacity, eliminate overgrazing and overrest, and utilize herd effect. (Some definitions of these terms and others are included later in this article.) In a controlled grazing operation, a grazing unit is divided into subdivisions or paddocks with all livestock concentrated in one paddock and then rotated according to plant growth. The number of subdivisions or paddocks may vary from eight to 40, depending on conditions.

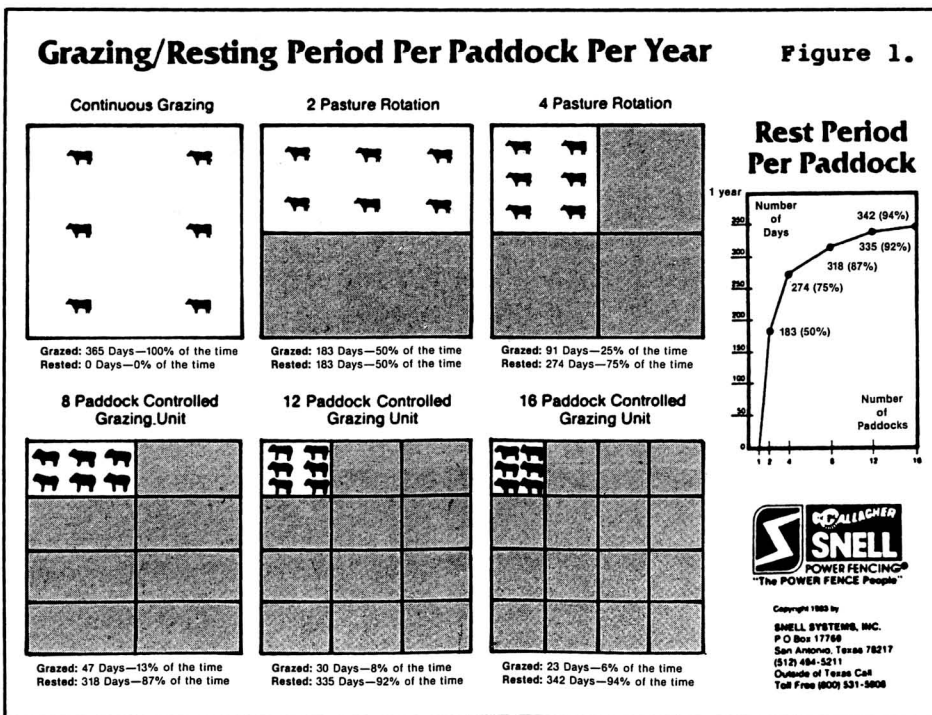
Controlled grazing on our dry, brittle lands of the western half of the United States was brought to this country by Allan Savory from Rhodesia and by Stan Parsons from South Africa. (A great many ranchers, soil conservation personnel, and government agencies are aware of the Savory Grazing Method and its long-range effect on both man and the land.) Concurrently, a great deal of information about controlled grazing practices started pouring into the country from New Zealand, the United Kingdom, France and Argentina. Although the system was designed for more stable environments with higher rainfall, the fundamental principles of controlled grazing are essentially the same in all environments. However, the dry, brittle areas must be more carefully managed.

Overgrazing in many parts of our native rangeland and improved pastures is one of the major problems in today's livestock grazing management systems. Overgrazing generally occurs in lightly stocked areas where cattle are left in the same pasture for extended periods of time. Livestock selectively graze palatable species and then re-graze them until they are damaged or dead. Overrest often occurs in the same pasture at the same time. Bunchgrass species become dry, fibrous, and are neglected by livestock. These plants, as they mature and begin to die, are rendered useless as forage.

It is ironic that understocking, overgrazing and overrest occur all at the same time in the same grazing area. In grazing areas that are free of livestock for extended periods, overrest causes severe loss of forage when the neglected bunchgrasses mature and die. According to Savory, the current management system of most of our rangelands is causing desertification at an alarming rate. The only real solution to this problem is controlled grazing.

## Herd effect important

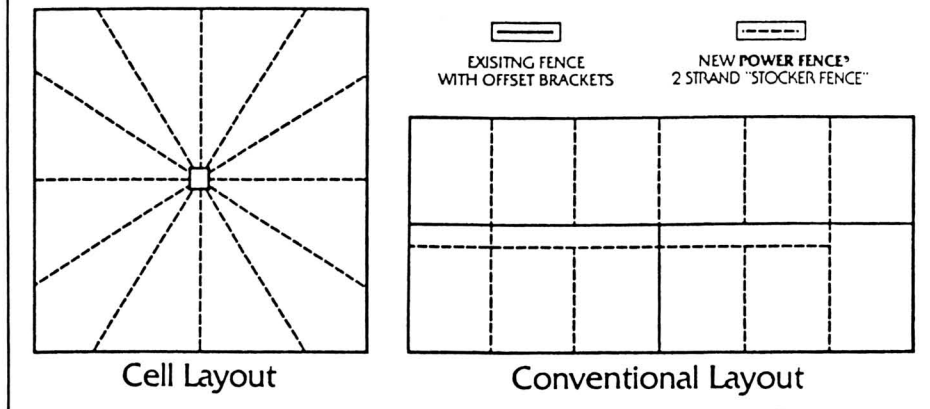
Under controlled grazing, all animals are bunched in smaller grazing areas called paddocks. The herd effect then becomes important. Breaking up the soil cap and preparing the seed bed is the benefit of concentrated hoof action. Concentrated recycling of manure and urine adds to and develops soil quality. In a controlled grazing program, cattle are moved frequently; thus bite damage is reduced significantly, allowing roots



## Two 166 Acre Pastures Divided into 12 Paddock Controlled Grazing Units

(13.83 Acres Per Paddock)

Figure 2.



to develop through leafy grass structures.

In New Zealand, paddock rest is the key to success in controlled grazing in their stable environment. Figure 1 shows the effect of various numbers of paddocks on the rest factor. Note that a 12-paddock system rests 335 days out of the year or 92 percent of the time. This allows grass species to establish adequate root systems, and overgrazing and overrest are eliminated because livestock are moved through the grazing unit on a time-controlled basis. In a stable, high-rainfall area, a 20-day rest period would be adequate. In drier, more brittle climates, or during the nongrowing season, rest can extend from 40 days to 90 days per paddock.

The sun provides 90 percent of a plant's nutrients. Because harvesting of sunlight is the basic job of grazers, controlled grazing offers great opportunities. As shown in Figure 2, controlled grazing, with time off and time on, allows development of the leafy structure and thus growth and development of the root system.

An effective controlled grazing program can extend the grazing season. In my own experience on a small ranch north of San Antonio, our animals obtained 40 days to 60 days of extra grazing per year when we

Obviously, you can't double stocking rates in the middle of January, but because of increased forage production, adding to stocking rates is an accepted practice and very low in risk.

Improved forage production is certainly one of the great benefits of controlled grazing. With the benefits of herd effect and control of rest periods and grazing periods, roots develop, native species reestablish, and total forage production increases dramatically. This extra production, of course, permits the increased stocking rates.

In New Zealand, recycling of manure and urine back into the soil through high stock

density provides as much as 600 lb. of nitrogen per acre. It's a terrible waste to allow livestock to bed down in the shade and drop their manure; these nutrients remain under the trees instead of on the pasture. Careful planning will assure that this doesn't happen. Increased herd density also helps break down fibrous matter, weeds are trampled out and brush generally begins to regress. Soils and plants appear more healthful.

Obviously, controlled grazing can add considerably to management skills. Simply laying out paddocks or subdivisions and calculating cattle moves is only the beginning of increased management participation. While management is intensified by the routine movement of cattle, the benefits include more frequent observations of the livestock. Improved overall management becomes more efficient, from ranch planning to marketing.

Controlled grazing offers great flexibility—for example, at my ranch, we often run replacement heifers one paddock ahead of the main herd so that they get the best forage. Their numbers are not so great that they significantly diminish forage available to the following cow herd. In times of heavy grass growth, when cattle cannot keep up with production, certain paddocks can be eliminated from the grazing unit and be used for hay or silage—again adding flexibility to the concept.

### Better management a must

There are disadvantages to controlled

**Controlled grazing can be described best as a grazing pattern designed to increase carrying capacity, eliminate overgrazing and overrest, and utilize herd effect.**

applied this grazing pattern. There are many beneficial aspects of extending the grazing season—from getting more productivity out of winter grasses to extending the dry-matter utilization of native grasses.

### Many benefits

Our experience with controlled grazing has permitted us to double and even triple our current stocking rate. Doubling your current stocking rate is generally accepted as being a practical and achievable goal.

grazing. One disadvantage is increased management involvement. Many ranchers have an established way of life and prefer not to get involved in the extra management activity required by a proper controlled grazing program. Another disadvantage is the possibility of decreased individual animal performance during the first year or two. This is more than offset by the increased stocking rate. Animal performance tends to stop decreasing as the system develops and gets on stream, even increasing as forage improves.

In setting up a controlled grazing unit, you should decide whether to add to your existing fencing system to make more subdivisions, or to set up what is called a Classic Cell System. Figure 2 shows some options

on paddock layout. Once this layout has been decided upon, you should carefully plan the location of water points and make certain that sufficient water is available for concentrated numbers of livestock. Careful consideration of terrain and cattle working

---

**A rule of thumb: Fast growth,  
fast rotation; slow growth,  
slow rotation.**

---

facilities is also very important.

Establish the standard stocking rate for your area based on soil conservation service figures. Decide what your new stocking rate will be and start your financial planning and

projections from that point.

The minimum number of paddocks that we recommend for any controlled grazing system is eight, but preferably 12, 16 and even up to 42. The more paddocks there are, the more flexibility the grazer has. Fewer than eight paddocks does not offer enough paddock rest under all conditions. In paddock layout, livestock-handling facilities should be considered and located in the most efficient area. When planning a program, it is most important to decide the rest period per paddock based on the time of year and plant growth conditions. A rule of thumb: Fast growth, fast rotation; slow growth, slow rotation.

The time of year, type of forage available, and financial planning should all be part of your controlled grazing program. Failure to know what you are doing, particularly in the dry brittle areas of the United States can lead to disappointment. The author can provide information on in-depth training for controlled grazing programs.

It is ironic that both revolutions mentioned earlier, Power Fencing and controlled grazing, hit the United States at the same time—they were meant for each other. Certainly, in large, controlled grazing programs in the western United States, Power Fence made the program possible because of its significantly reduced cost over that of barbed wire and its extraordinary ability to manage livestock.

#### **Power Fences®**

Most of you have heard of Power Fences. The concept originated in New Zealand and Australia and most of the technology we have today came from these two countries. A Power Fence is electric fencing with emphasis on quality, higher-priced energizers, and proper engineering design on the fence

---

**Soft wire is commonly available  
and is cheaper than the  
hi-tensile but will cause a great  
many problems if installed  
as a permanent fence.**

---

itself. The new high-powered, low-impedance energizers most commonly used on the market today are imported from New Zealand. These low impedance energizers are short resistant—that is they won't short out when weeds and grasses contact the fence line.

Traditional electric fencing has had a bad image because electric fence lines have required extensive maintenance and cutting of weeds and grasses. Shorts and fence failure were constant concerns. The new high-powered energizer solved some of these problems in that the design of the circuitry allows us to establish a Power Fence system that is effective as well as reliable.

Bull control is one application for Power Fence—either with three- or four-wire fences, or by simply offsetting a hot wire on

an established barbed or net wire fence. Properly installed, a Power Fence can totally control bulls—in fact, there are two very large A.I. laboratories near San Antonio with Power Fence bull runs.

Because Power Fence affects the animal's nervous system, they can be trained to its use relatively easily, but such training is necessary. Stallion control is easily achieved with the properly installed three-wire Power Fence. On our own breeding farm, north of San Antonio, our mature stallions are put in paddocks each day with total confidence in the Power Fence control. Sheep fencing/predator fencing with Power Fence is a

---

**Most pastures under current  
livestock management  
conditions are understocked  
and overgrazed.**

---

widely used practice to keep coyotes out of sheep flocks. In fact, the development of the modern-day Power Fence occurred because Australian sheepmen needed a fence that would control sheep and yet be inexpensive. Elephant control is now a standard procedure with Power Fence on plantations in Malaysia. The elephants are excluded from cash-crop areas with a two-wire fence. Controlling deer, elk and other game with Power Fence is a standard procedure in many states and countries throughout the world today.

A properly installed Power Fence uses 12½-gauge hi-tensile wire. Under no circumstances should soft, low-tensile wire be used. Soft wire is commonly available and is cheaper than the hi-tensile but will cause a great many problems if installed as a permanent fence. Fiberglass posts are used in Power Fencing systems along with insul-timber posts, a self-insulating, high-density wood that has become the product of choice for the Power Fence. Ratchet-type line strainers, tension springs, cut-off switches, and many miscellaneous accessories make the Power Fence a modern engineering fete that has saved the ranching and farming communities millions of dollars during the past several years.

### **Conclusions**

Why consider a controlled grazing project? There are a multitude of reasons, but Iowa Western Community College, in a carefully conducted controlled grazing program, came up with a reason that justifies the effort: "You like the cattle business and want to increase your income."

Doubling your stocking rate, increasing forage production, and extending the grazing season are but a few of the economic rewards derived by combining the powerful management tools of controlled grazing and Power Fence. **AJ**

*"Controlled Grazing and Power Fence®" was presented at the 1984 International Stockmen's School in San Antonio, Texas.*