

The Wofford Ranch— Grazing Management in a Dry Climate

BY HEATHER SMITH THOMAS

Most stockmen using intensive grazing systems are in relatively humid climates or use irrigated pastures, but a few are trying these methods on arid rangelands. It has to be done a bit differently because of the harsher, more brittle environment but many of the principles are still the same.

Gary Wofford, a rancher near Pueblo, Colorado, has been using Holistic Management and a dry-land version of mob grazing and says it has changed his situation dramatically. He feels that the greatest potential for improving soils and grass production is in the West, where some areas have suffered damage from overgrazing. These areas have a huge potential for increasing productivity by changing the grazing management to allow longer recovery time for the plants.

Restoring Productivity

"When I bought my ranch (10 sections of land) in March 2006, it had been grazed conventionally (season-long grazing) for its entire existence. The recommended stocking rate in 2006 (by NRCS) was 125 cow/calf pairs year round. For the first couple years I grazed 120-150 pairs until I got the fencing and water sources partially developed in the summer of 2008 to be able to rotate my pastures and graze them more intensively for shorter periods. Then in 2010 and 2011 I was running the equivalent of 500 pairs year round," he says.

"This is about 4 times the recommended stocking rate, and the grass has improved phenomenally. The NRCS was thrilled. I was thrilled. I think that almost any ranch in the West that has been conventionally grazed can double the stocking rate after the first year of management change, and double it again over the next couple of years. The potential is incredible," says Wofford.

For him, being able to quadruple his cattle numbers was like buying one ranch while getting the benefit of what most people would do with 4 ranches. "It's like getting 3 ranches to graze for free. My cost of gain on yearlings, or cost to produce a calf in a cow/calf operation is about ¼ of what it was in the past, on this ranch," he says.

He hasn't fed any hay to his cattle for several years. He feels that with well-planned grazing, there is no need for winter feed—especially in his



Despite years of drought, Gary has been able to keep his ranch productive enough to pay the mortgage by making effective use of the rains that do come (July 2010).

region where snow doesn't get too deep. "One form of increasing the effective stocking rate is to keep cattle numbers the same and eliminate winter feeding, just by having ample grass for winter grazing. Then, after the costs of running cattle are lower, a person can increase the stocking rate. I recently saw an estimate that 70% of cost of production on the average cow/calf operation is for winter feed, and this cost can often be eliminated," he says.

Ranching became his fulltime job. He worked in town, as a doctor (Internal Medicine), for 20 years, but closed his practice in December of 2008 after he realized he could make a living ranching. "The traditional thinking in our area is that you can't purchase a ranch at market price, finance it 90% like I did, and make the mortgage payments from the cattle operation alone," he says.

Many ranches in the West have someone working in town to support or pay for the ranch. "Yet most ranches could be self-sustaining. Most of the ranchers working in town would

love to quit that job and be on the ranch full time, if it would support them, and it will—with different management," he says.

Wofford increased production on his 10 sections of land by putting a water source in the center of each section, and dividing each one into 4 smaller pastures with permanent electric fencing. "I now have 42 permanent pastures to utilize for grazing management. Having this many pastures allows flexibility to graze for the benefit of animal performance and for the health of the grass." This is the balance that must be achieved on a daily basis, to sustain good grass production. Wofford feels that most conventionally managed ranches are only concerned with animal performance and have damaged the grass significantly.

Originally his ranch had only 2 water sources—a creek on the western border and one stock tank on the eastern side, utilizing well water. The cattle didn't want to walk 2 miles to water, and overgrazed the areas near the water sources while underutilizing some of the forage at the far corners. By putting a water source in each section, he was able to more uniformly use the pasture, and halt the overuse of certain areas. "Many ranchers spend a lot of time and energy taking hay to cattle, when all they really need to do is take the cows to the grass, and give the grass a chance to be more productive," he says.

Peer to Peer Learning

"The main reason I purchased this ranch in the first place was because I had a herd of cows that needed pasture. I had been leasing another man's place. It was really dry one year and we ran out of grass in the fall. There was no way we were going to make it through the winter. I had to do something, and tried to find grass to lease. I found this ranch that was available, and when I began purchasing it I called a friend who was doing holistic grazing management. I told him that if I owned a ranch myself I wanted to do things correctly, from the beginning. I asked him what I should read," says Wofford.



Vicky and Gary Wofford are the team that makes their ranch profitable.

The friend told him to read Savory's work, and all of Greg Judy's writings. "We talked about this all the time and I learned a lot from my friend. It helps if you can find someone who is doing this kind of grazing, and pick their brain constantly. My friend has been doing this for 30 or 40 years and is way ahead of everyone else. If you are a beginner I would highly recommend reading Savory, Judy, and maybe a couple of Allan Nation's books, and go to a conference," he says.

"Go to an Ian Mitchell-Innes conference or to one of those types of learning experiences where you can actually sit and talk, and ask questions that pertain to your specific situation. There are many things you won't be able to get out of a book." Someone who has had some experience in your type of climate, terrain or situation can help you a lot more. A conference where you can share ideas and questions is the best learning tool.

"I went to one of Ian's conferences at Greg Judy's place in 2008 and then I hosted one here at my place in 2011. I also e-mail Ian periodically to ask questions," says Wofford. It was tremendously helpful to have someone to ask.

"The most important thing is to find someone in your area who is doing intensive grazing. One of the problems I had was that there was almost no one doing it out here. The friend who got me headed this direction was actually doing a pretty good job of it, but he's on leased land. Since he doesn't own it he hesitates to put in much infrastructure that he may not be able to use very long. He put some in, on a 10-year lease, thinking he'd get his money back on it after 10 years and he probably could have. He was there about 7 or 8 years and lost the lease," says Wofford.

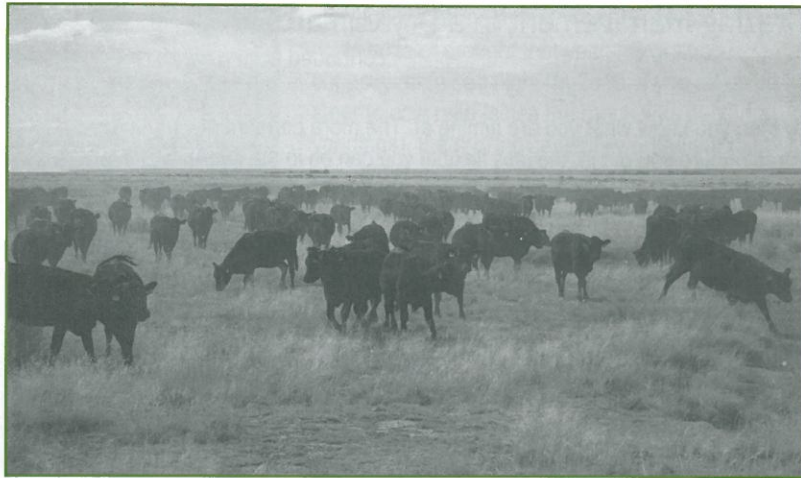
"There are a few people in eastern Colorado who have a partial program going, and are doing a great job, but there aren't people near me that I can go to for ideas. E-mail discussion groups are a great thing if you are in a good group. You can throw out any question and people will try to help you answer it," he says.

Lessons Learned

"If a person is getting started and wanting to design a grazing system, my suggestion is for them to get advice from a bunch of different people regarding how they would design it. If I had it to do over again, I am not sure I would do it a lot differently, but I would certainly think hard about the way Ian has his place laid out, in South Africa. He has a river down one border of his property, so that's his water supply. He has long, skinny pastures running from the river to the opposite border. Each pasture has running water, which is as natural as it gets, and the pastures are long and narrow which increases the trampling tremendously compared to wider or square pastures," says Wofford.

"I could have almost done the same thing. I have a creek on the west border of my place and almost could have laid it out that way. I've calculated the cost of the system and if I could have taken the water system money and applied it to fencing, I could have spent the same amount of money and had long narrow pastures with natural water. The problem with my place is that it's 3 or 4 miles to the other border, which would mean a long ways to go to water," he says.

Range cattle will go a long distance to water; in some regions they will go several miles to water, drink once a day—lounging around for awhile after drinking—and then graze back out in the evening. They'll spend the night somewhere out where they've grazed, graze through the morning and then come back in to water midday. A good range cow will do fine in this situation.



Gary works to get as much trampling of his bunch grasses to build soil health. He says don't give up as it may take a couple of years to really see the effect.

"People in the East think the water supply has to be nearby for cattle to do well. Jim Gerrish's book, for instance, says that in an ideal pasture the cattle should never be more than 800 feet from water. My cows have never been that close to water," says Wofford. Most cows on western rangelands travel at least half a mile to a mile or more to water.

Another piece of advice: don't go broke investing in the infrastructure. "Try to use what you already have, like Ian uses the river. All he had to do was put in a little bit of fence." Rather than get in too deep too fast—and never catch up in paying for the facilities—it's often better to do a little bit at a time as you can afford it. You can gradually pay for more improvements as the productivity of your pastures increases.

"Test plots are a great idea for people who want to prove to

themselves that it will work on their place, before they jump in. If you have a 2- or 3-acre pen or trap, put all your cattle in that small area for a day and then pull them off and don't let them go back in there for a year, and see what it does. Then compare it to your other pastures. If you do that for 2 or 3 years in a row, you will kick yourself for not doing the whole place immediately!" he says.

Intensively grazing one small area, and being very aggressive with it, can show what that will do for the grass. The proper acreage

for the herd will vary with your climate, terrain, plants, number of cattle, etc. "Give them one day's worth of grass—whatever amount of pasture that might be. If there is not enough grass there for the herd, just leave them half a day. Then pull them out and go somewhere else. But give that piece a year's rest after the grazing/trampling and then see what it looks like. If you are not convinced after one year, do it again. You will be convinced after 2 or 3 years. Test plots are a wonderful tool," he says.

"In the last conference I attended with Ian, one of the women in the group asked: 'There are so many things to consider, how do you actually get started?' What Ian says over and over again is to start with what you have and work toward what you want. If you are eventually wanting 40 or 50 pastures and don't have money to do all that, cut your place up into 5 pastures that have water. This will give you better utilization and improvement than you had before, and you haven't spent a lot of money doing it." A person can just keep doing beneficial increments.

"You might have to put a water system in by the time you do more, but

"I recently saw an estimate that 70% of cost of production on the average cow/calf operation is for winter feed, and this cost can often be eliminated."

CONTINUED ON PAGE 14

by then you know what you are aiming at. The more permanent infrastructure you put in, the less flexible you can be in the future. So it's a good idea to only do a little bit the first year—like the 4 or 5 pastures—and the next year cut them in half. If you then look at it and say, 'I wish I'd done it another way,' you probably can do it another way at that point." This is better than putting everything in at once and then realizing you should have put some of the fences in another place or the water in a different location. It's not a bad idea to do it over several years.

Efficient Systems

"I really like what Ian has been doing with his cattle. He moves them into a new pasture through a gate by the water. So to go graze they have to walk out away from the water. What he's been doing the past few years is to move them into the new pasture right at dark and he has it crossfenced so they just have 2 or 3 acres that first night. They spend the night there, walking over the grass, trampling it and pooping all over it. In the morning he goes out and opens the gate and lets them have the whole pasture. He says that those small inclusion zones are always the greenest grass on the ranch. Those are the places the cows run to immediately, when they get a choice," says Wofford.

A person could also put these on the far end, if you wanted to better utilize the end of the pasture away from the water. "Cows don't need water overnight, if they have good water during the day. In that instance you'd bring them in the opposite end from the water and pen them up in a small area, to let them out in the morning. Improving that end of the pasture would provide the attraction at the far end, and the next time you let them in on the water end they'd want to go to the best grass at the far end and trample everything even better," he says.

Long narrow pastures have some great advantages over short wide pastures. "Everybody needs to do more trampling. You can never have too much. The more trampling the better—and that comes with pasture design, pasture shape and stock density. The higher the stock density, the more the cattle are going to trample. And the longer and skinnier the pastures, the more they have to walk over the grass and the more they will trample. Long, skinny pastures are also much easier to divide with a temporary fence. If the pasture is a mile wide it's a pain to subdivide. If you only have to put up 200 feet it's a breeze," says Wofford.

"There are countless ways to design a grazing system, to fit your own place, to accomplish what you want to accomplish." Once you know the basic principles you can look at your place with an eye to how you might tweak a certain idea or type of system to best adapt it to your own terrain and water availability.

Creating a Drought Plan

Part of the plan in mob grazing and Holistic Management is being able to adjust for drought. "You have to be flexible enough to do this, to make it work," says Wofford. After 3 years of severe drought he destocked—to rest the grass—but was able to graze through the first 2 dry years because of his innovative grazing management.

"For a drought plan, in a dry region, you need to always have at least a couple months' reserve grass that you don't plan to use except in an emergency. In our area, you should have a winter stocking rate low enough to get you through at least until mid-June—just in case the spring rain comes late. This gives us 2 more months later than we expect the grass to turn green. If it rains early and the grass grows early you can leave more residual grass to bank, or bring in stockers to run with your

cattle or keep more heifers, or sell fewer cows. You have many options," he says.

If you wait until there's a drought to try to figure out what to do, you will be in exactly the same situation everyone else is, and either have to buy expensive hay or sell cattle when the market is down due to the glut of cattle coming off drought-stricken ranches. "So one of the goals is to predict early on when there might be a drought, and then reduce your stocking rate before everyone else does," says Wofford.

"Monitoring is a huge issue. Watch your rainfall patterns. There are formulas that describe how to predict a drought. In some of Savory's Holistic Management courses he gives formulas where you can plug in the average rainfall and actual rainfall and it will give you the odds of having a drought in the next month or in three months or whatever. This gives you more chance to destock early," he says.

"If you destock more than you needed to you can just bank the grass. If you have too much you can always increase your stocking rate again or keep a bunch of grass until there is a drought. If you have a lot of brown grass and everyone is dumping their cows you can stock up, or rent pasture to people who are looking for feed," he says.

Currently Wofford is watching the weather trends and waiting for a good time to restock. "After 3 years of drought, a lot of the grass in our area is so damaged that it died. Even though we got some rain in July 2013 and got good growth on the grass that was still alive, some did not respond. I was not planning to restock until next spring. I wanted to let it grow more and I think it will be a lot healthier than if we graze it this winter." It needs more time to recover.

"In 2012 we got about 5 inches of moisture for the year. Our annual average is about 12 inches. In 2011 we were about 4 inches behind average, and in 2013 we got about 6 or 7 inches. In essence we are a year behind in total moisture, for the last several years. It will take awhile to catch up," he explains.

In pastures where some of the grass has died, time will heal this loss. "The seed is there; all it needs is moisture. This is a big point that people need to realize; there is no shortage of seed. Mother Nature has this problem covered. I've seen some estimates stating that topsoil is about 80% seed. It is just waiting for the right environmental conditions to encourage it to grow. You don't need to add seed; it's already there."

Healthier Grass & Soil

Wofford says that when he started improving his pastures with longer rest periods, his neighbors' grass was only 2 inches tall. "By allowing my grass to fully recover prior to being grazed again, the cows were grazing plants a foot tall or taller. This alone created many times more forage than the ranchers around me had," he explains.

The grass and soil is also healthier. By allowing grass to fully recover prior to grazing, it's much taller, and shades the ground. Most of the moisture that comes as rain or snow is retained, rather than running off or evaporating. "Wet ground is no longer exposed to the hot sun and wind. The grass roots are stronger and longer and sequester more carbon into the soil. For each unit of carbon added to soil, you retain 12 units of water," he says.

Taller grass plants not only hold more moisture, but also allow more plant matter to be trampled onto the soil surface when a small area is

Gary worked as a doctor for 20 years, but closed his practice in December of 2008 after he realized he could make a living ranching.



As is evidenced in this picture from October 2011, Gary has been able to keep standing forage to better protect the soil from heat and wind as well as trap snow in the winter.

grazed by a large herd. This acts as mulch and further increases water retention and slows down evaporation, and the water cycle is improved.

"One of the things I made note of the last few years is that whatever the cattle don't eat, you want them to trample down onto the ground as much as possible, to create litter. In a wet environment like Missouri where it rains a lot, trampled forage decays quickly and it's turned quickly into good soil. If your grass is 3 feet tall and so thick you can't walk through it, it's easy to put some down on the ground. But in our dry environment grass is sparse and we don't get any decay. It has to be mechanically broken down by hoof action instead," he says.

"Since it never decays, it becomes a cumulative effect. The first year I tried mob grazing I was disappointed in the scanty amount of litter (since our dry bunch grass clumps are many inches or even many feet apart). But the second year I realized it wasn't that bad. The third year, I thought, 'Wow, this is looking a lot better!' It has to build up. Eventually the litter breaks down, but it never decays," explains Wofford.

"In dry climates you shouldn't become discouraged the first several years, because if you are laying down any litter at all, it will accumulate and eventually help the land. The more litter you have, the more good it will do. We don't have thick, tall grass, like they do in the eastern part of the U.S." The dry West has some very different parameters.

"We can't control or change/increase the amount of rain we get on our ranches, but we can utilize every drop of rain that falls on them. By improving the water cycle, we can improve the effectiveness of whatever amount of water we get as rain. Lack of rainfall is usually the limiting factor to growing grass in the West. Think how your ranch would respond to twice as much rain as what it normally gets," he says.

All of these factors are more dramatic in the West than in the East where the climate is more humid to begin with. "I don't know that the taller grass in the East shades the ground that much more at 3 feet tall than when it is 2 feet tall; there is not the same potential for improvement," says Wofford.

"A dry year is a good time to evaluate your program to see if you are making progress. On a wet year, it's easy to have an optimistic outlook on things, but when you go through some really dry years you find out if you are doing it correctly."

As grass plants grow taller, with stronger root systems, they are healthier and more drought resistant. "Most of my neighbors had nothing but dry, brown grass during the dry summer of 2011, while I had green grass growing longer. When I looked back at my records, we had received less than 4 inches of rain from July 1, 2010 through July 1, 2011. Most of my neighbors were already destocking and I maintained my same

stocking rate through that year," he says.

In spite of drought that year, his grazing capacity remained high. "In 2010, if you adjusted steer to cow ratio (since the ranch was pasturing yearlings), the grazing capacity worked out to be about 600 cows year round. We had a severe drought through 2011 and pastured the equivalent of 500 cows year round—which was really good. All our neighbors were cutting their herds in half or more," he says.

"The continued drought in 2011 did not affect my bottom line and I was still able to make my mortgage payments—which I would not have been able to do with reduction in cattle numbers." Even though the summer of 2013 was also dry and Wofford destocked and rested his pastures, they will recover more readily when the rain finally comes again—because they were not overgrazed.

Landscaping with Livestock

Improving soil health and giving plants full recovery also helps to keep winter precipitation. The ranch got a foot of snow in December 2011 and when it melted there was water standing on the ground for a month. Wofford didn't have to feed any hay, even with the snow, because the wind blows it around; the snow is only 3 or 4 inches deep in some places and 2 to 3 feet deep in other places; it's never uniform.

"The wind is your friend, especially if your neighbors don't have any grass and you do. The snow blows off your neighbors' places and your grass catches it all." The plants catch the snow and have more moisture to utilize when it melts.

"Even if the middle of the ranch is eaten down a little farther than you want, if the perimeter is still tall, you will catch all the snow blowing in, and also catch it before it blows off," says Wofford.

Ian Mitchell-Innes, in South Africa, has a similar philosophy regarding fire prevention on his pastures. "In a conference several years ago he mentioned that all his neighbors burn their pastures—which is a horrible waste. He wants a big firebreak around his perimeter so he puts all his cows right on his border and moves them around it, letting his cows create the firebreak for him. This is the exact opposite of what I do, to catch the snow. He wants a heavily grazed boundary so his neighbors' fires don't spread onto his property. This is part of the philosophy of letting the cows do all the work. Don't mow a firebreak; just let the cows graze it heavily in the right places," he says.

Creating a Team

All of this innovative work and commitment to making the ranch a viable economic business is not just the work of Gary. Gary and his wife Vicky are a good team, in making this program work. "Allan Savory makes a good point, in one of his books. He says that before you start a new kind of management program, you need to make sure ahead of time that everyone involved is in agreement on it. If you want to do something different and your wife doesn't really want to try it, it's not going to work very well. You need to have common goals. It's nice to sit down together and plan/write your goals and look at them whenever you need to—to remember where you are headed," says Wofford.

"My wife is working in town right now, but whenever she's here on the ranch she is helping me, and very supportive of what I am trying to do. It does have to be a team effort, with everyone involved, especially if there

Grazing Management in a Dry Climate

continued from page fifteen

are kids still helping with the ranch. If the kids don't want to do it, you are not going to force them into it."

Feed Efficient Cattle

To create a profitable ranch Wofford is also focusing on the feed efficiency of his cattle. "Research is coming up with new Expected Progeny Differences (EPDs) for feed efficiency. Kit Pharo is about the only seedstock producer who has been selecting for feed efficiency for many years, and most of his bulls are in the top 1 or 2% of the breed. If you can get cows and bulls that are feed efficient you can double your stocking rate. Pharo is always telling people that smaller cows will always produce more pounds of beef per unit of land than larger cows, and the calves will bring more per pound when you sell them," says Wofford.

"It's a lot more profitable to sell a thousand 400-pound calves than 500 800-pound calves because the price per pound is so much higher for the

lighter calves. A thousand-pound cow eats about half of what a 1400-pound cow eats. So you can increase your stocking rate by 40% just by using 1000-pound cows instead of 1400-pound cows," he says. The smaller cow will usually wean off a higher percent of her body weight in the calf she produces, compared to the larger cow.

"If she is eating less, and producing a higher percent of her own body weight in weaned calf, she's doing a better job than the bigger cow."

Wofford has clear evidence of the key management decisions that have made a difference in land health and profitability for his ranch. "The first thing is high density grazing because this makes the biggest difference. You can easily double your stocking rate, if not more, in 2 to 3 years. The second thing is cow size and feed efficiency. The third suggestion is a look at heavy-milking versus moderate-milking cows. The moderate-milking cow is about 30 to 40% more efficient. If you can adjust cow size and select toward moderate-milking cows you can increase stocking rate by 61% right there. The fourth thing is to calve in synch with nature—whenever the deer in your region are having their fawns. If it's June, then that's when you should be calving," he says. With these key practices Gary Wofford has been able to make ranching in the arid West a profitable business—no small feat in this day and age. 🌱

Ranching in Eastern Oregon

continued from page eleven

grass for about 3 months and that means 9 months that it's not growing. If we graze a plant hard on the 15th of July—near the last day of the growing season—it will require almost a full year to recover and be ready to be grazed again." After you get into the heat of summer, the cool season grasses are done growing.

"We like to graze crested wheatgrass in the spring and then our cows and calves go to Forest range in the summer. Our yearlings stay on crested wheatgrass in sub-irrigated meadows and gain very well. We like to ship 900-pound yearlings to the feedlot the end of August. In the fall our cows graze meadow aftermath, and then we feed hay through the winter," he says.

Reducing Winter Feed Costs

Winters are long, with much of the grass covered by snow after November and remain snow-covered until late February. "Since we are in a high, flat valley (about 4,600 feet in elevation), we are one of the coldest places in Oregon. We've had a record low temperature of 54 below zero. Our elevation by western standards isn't really very high but for Oregon it is pretty high. This makes it necessary to feed hay in the winter; the snow may vary from 6 inches to a couple feet, depending on the year."

It's difficult for cattle to graze through that much snow, so hay is fed every winter. "One thing we are doing to reduce hay costs is using rake-bunched hay for the cattle to eat in the fall and early winter. We use a bunch rake, following the swather, to make piles of hay. It keeps better—retaining more color and nutrients than hay in windrows—and is easier for cows to find and eat in the snow," Jack says. This saves on some of the haying and labor costs, eliminating the need for baling, hauling and stacking, or hauling it back out to the cattle.

This provides feed for the cows through fall and into the winter, but through most of the winter they are fed big round bales put up on the ranch. "We put up most of our hay and then buy a little alfalfa hay as a protein supplement," he says.

He prefers feeding alfalfa rather than using protein tubs. With tubs

or blocks some of the more timid animals don't get enough, while the bossier animals always get more than their share. "I want to treat our cattle fairly and enable them to all have equal access to quality feed to meet their nutritional needs. Feeding hay, making sure pastures are in good shape, taking hay and forage samples, making sure we have the right mineral mix for our environment, etc. are all important aspects of raising cattle," Jack says.

Dependency on Public Land

Even with smart use of deeded land, in eastern Oregon the cattle industry is very dependent on public land grazing to sustain ranching. "Our society is now saying other uses of public land might be more important than cattle grazing," says Jack. Some voices are claiming that other uses are more important.

"In order to continue grazing, we need to do a really good job. These public lands are crucial to our year-round viability. Without them we simply don't have the balance and diversity of grazing to allow us to be economically viable," says Jack. Most ranches don't have adequate grazing on the home place; the cattle need to be somewhere else on summer pasture so that hay can be grown on the privately owned acres, for winter feed.

Land values keep going up and it's harder to purchase land. "Even if we continue grazing on public lands, it is getting harder to expand or make room for the next generation when land prices or so high that the cost of a ranch is ten times what cows can pay for."

It's harder and harder for young people to get started in ranching unless they have a lot of help. "If my grandfather could hear me say that, however, he'd probably tell me that this is nothing new. He had a stagecoach stop, a general store, a post office and did some freighting in order to make enough money to get the ranch on its feet. He'd say, 'Get used to it, kid.'" Times were tough then, too—just a little different in the details. A person has to be determined, innovative, and a little bit lucky, to make it work.

"But I think our society is also beginning to recognize the importance of the stewardship that ranchers provide. We are not out to rape and pillage the landscape. We see cattle as a tool to create a healthier and more diverse landscape," says Jack. 🌱