



Grazier

► by Kindra Gordon

What can land monitoring do for you?

Tracking resource health through a land EKG can yield rewarding results.

Heartbeat of the operation

Often viewed as cumbersome and time-consuming, monitoring rangeland and forage resources isn't typically considered a favorite ranch duty. But to garner the best returns from the land — and to combat activists who want livestock removed from some areas — monitoring is increasingly proving to be the best defense.

For instance, Colorado rancher Tim Canterbury has no doubts about how critical land monitoring has been to his commercial cow-calf operation. "Monitoring is every bit as important as calfhood vaccinations or a herd health program. I'd give up something else before I'd stop monitoring," Canterbury says.

He, his wife, Rhonda, and their two sons run 150 black baldie cows in the rugged range of central Colorado near Salida. The ranch includes about 30,000 acres with use of both private land and grazing on Bureau of Land Management (BLM) and the U.S. Department of Agriculture (USDA) Forest Service (FS) permits. "It is really rough country that takes a lot of land for one cow," Canterbury says.

Canterbury felt he always had adequate forage in his pastures, but says, "I wanted to know what was happening. I would hear about monitoring from the government

agencies all the time, but I wanted to know how to do it myself."

Then in 1999 he met Charley Orchard, a proponent of land monitoring who has developed a special business called Land EKG Inc. Orchard offered his workshop to several cattle producers in central Colorado. With the tools he learned, Canterbury has been enthusiastic about his own land monitoring program ever since.

Monitoring made simple

"Charley's Land EKG program makes it so cowboy simple," Canterbury says of the unique program that tracks four components on the land: mineral cycling, water cycling, energy flow and biotic state.

With the system, several indicators — such as percent bare ground, species diversity and plant vigor — are plotted on a simple card. When complete, the dots on the card are connected from each category to give a graph that looks very much like an electrocardiogram (EKG) reading from the doctor. If the graph dips into the "losing zone," producers immediately know what resource category needs their attention.

"When you can see that graph and understand it, you know what areas you need to focus on to improve your range," Canterbury says.

"Often, it is simple things such as increasing the amount of residual plant cover left in an area to help improve water cycling or energy flow."

With severe drought the last few years, Canterbury says monitoring has also been beneficial in helping him make management decisions. "Because we regularly monitor forage production, I knew how much forage and how many days of grazing I

had. I wasn't guessing."

That is precisely what Orchard hopes

land managers will gain from the Land EKG monitoring program. "It's all about getting feedback to base decisions on," Orchard says.

As a fourth-generation rancher raised in Wyoming, Orchard has long understood that monitoring what's happening on the land can help producers make better management decisions. However, while in graduate school at Montana State University (MSU), he realized there wasn't a user-friendly monitoring system available to ranchers. "With many of the systems, you collect data each year, but you can't determine if the land health is getting better or worse. Unfortunately, most monitoring doesn't tell you what to do to improve," he says.

That point hit home for Orchard while he was conducting his research and looking for commonalities among 50 producers with advanced grazing and management systems.

"Sixty percent of them were monitoring. That's a huge number, but they didn't have the slightest idea what it was telling them. They said they were just doing it because they knew they were supposed to," he reports.

So in 1996, Orchard and his wife, Sara, established Land EKG Inc. in Bozeman, Mont. From the start, their goal has been to help ranchers. "If you are going to take the time and energy to set up a monitoring program, we believe it is important to get the information in a format you can base management decisions on," Orchard says.

How is Land EKG different from other monitoring programs? For starters, they aim to keep things understandable. "We strive to put things in cowboy ecology terms," Orchard says.

"Often," he adds, "ranchers know what is taking place, but they haven't had the tools and terms to monitor it. After attending one of our workshops, most people feel comfortable to do their own monitoring. It's amazing to watch the light bulbs go off."

For instance, producers monitor land health indicators along a transect line by answering several easy questions. (For example, are there very few, moderate or many living organisms at the soil surface? Is the spacing between plants wide, patchy or close? Is there too much bare soil or very little?) When completed, the producer will have plotted his answers on a card and will be able to see in graph form exactly what is happening on the land.

"This pictorial graph is easy to understand and compare from year to year," Orchard says. "Land managers can see changes and get a feel for trends on their land."

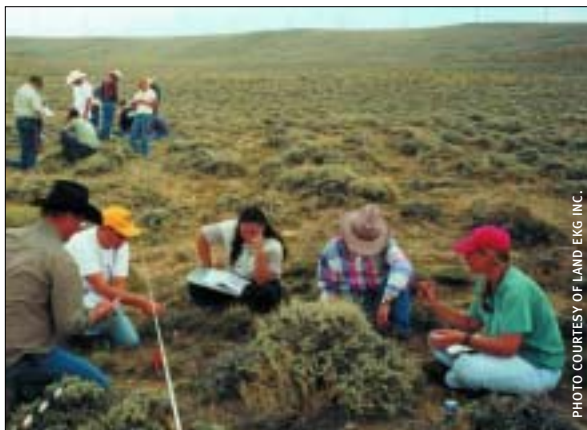


PHOTO COURTESY OF LAND EKG INC.

► Ranchers can monitor their land for mineral and water cycling, plant vigor and species diversity by observing health indicators along a transect line.

As more issues arise relating to public land use for grazing, as well as endangered species and Clean Water Act issues on both public and private lands, Orchard believes there will be even more basis for monitoring in the years ahead.

"Monitoring puts ranchers in a proactive position because you can verify what is taking place on your land. It has already helped keep environmental activist groups at bay in trying to get livestock off some public land areas," Orchard says.

He adds, "In seven to 10 years, I'd love to see 30% to 50% of allotment holders applying monitoring and stopping activists like the Western Watershed dead in their tracks."

Getting started

For those interested in starting their own monitoring program, Orchard offers these tips to get started.

► **Get on the ground.** "A common mistake land managers make is just doing a windshield survey of their grasslands. But you've got to look down to see what is taking place at the soil surface," Orchard says. He adds that it is not just about monitoring the grass, but the entire ecological system.

► **Ranchers often know best.**

"Monitoring is often portrayed in a way that ranchers aren't smart enough to do it. That's wrong. People on the land are many times better than the experts at knowing what's happening on their land. The goal of our workshops is to empower people to

realize, 'I really can do this.' We want to take the intimidation factor away," he says.

► **Be prepared to make changes.**

"Monitoring tells you what is happening for better or for worse," Orchard points out. So, if you are monitoring and the feedback you get indicates things are getting worse, then they probably are, and you've got to make some management changes, Orchard says.

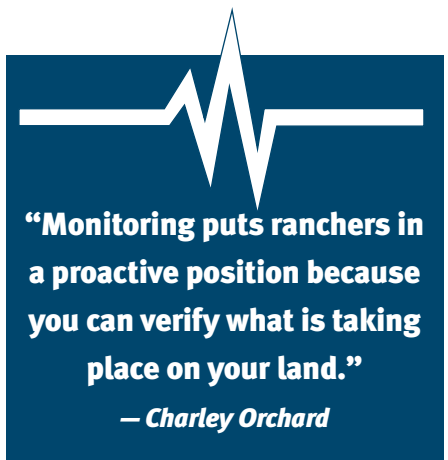
► **But also be prepared to see things improve.**

Orchard reports that land managers who do start monitoring and making changes are usually pleasantly surprised by the results. "I'll often hear a producer say, 'I never knew it could improve like this,' because they are so used to their land looking and performing the same," Orchard says.

► **It's not as time-consuming as you think.** Orchard suggests that about 1% to 2% of working time on the ranch should be devoted to monitoring — that equates to about 3-5 days a year for most ranchers. "When all your income is generated from the land, that's not too much to expect, and if the system is user-friendly, you can get a lot of information in that time," he says.

In Colorado, Canterbury estimates he spends about one week a year collecting his data. "Once your system is set up, it's not that bad," he says, adding that the information he gets out of it is well worth it.

Land EKG recently received a USDA Small



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— Charley Orchard

Business Innovative Research grant to test EKG monitoring software in pocket computers. Prototypes will be tested this summer by the Idaho State Land Department, New Mexico Fish and Game, and some individual ranchers. Orchard reports that the computerized handheld program should be available by summer 2005.

In addition, Land EKG is developing a Web site for land managers to upload data to build a permanent storage bank. The Web site service will also provide an analysis reporting information to producers. For more about the company, contact them at (406) 582-7480 or visit www.landekg.com.



E-MAIL: kindras@gordonresources.com



More benefits of land monitoring

"We can't affect how much rain falls, but we can affect how much moisture is captured by having a soil surface that's ready to collect it," says Charley Orchard of Montana-based Land EKG.

Orchard is an advocate of monitoring land health to help ranchers capture more raindrops and to get better overall returns from their land.

He says, "It's easy for producers to get focused on animal production and things like weights and EPDs (expected progeny differences), but they often forget it all stems from the land, which is their manufacturing plant. Land managers are really solar commodity brokers. To harvest solar energy and turn it into beef, they need diverse plant communities and healthy soils. That, then, allows them to maximize what they are harvesting.

"Improved land health can also lead to diversified opportunities such as ecotourism, wildlife or recreation — in addition to selling beef. It's an entire system," Orchard says.

He likes to pose this question to land managers: Are you doing things right? Like building fences and getting cows bred? Or, are you doing the right things? Like looking at your business and the total resource opportunities you have?

For instance, you may take returns from \$6-\$7 per acre to \$15 per acre with grazing improvements, but another option may be to have returns at \$7-\$8 per acre with grazing plus another \$30 per acre with wildlife and recreation opportunities developed.

Through monitoring, Orchard says, you'll have the information to

make such decisions and transition from doing things right to doing the right things. He adds, "Each business needs to evaluate the opportunities to profit as much as possible, and all things hinge on the land. The land has to be functioning for business aspects to be optimized as well. Monitoring with a system like Land EKG gives you a benchmark to say 'Here we are, where do we want to go?'"

Opportunities on leased land as well

Orchard has also seen growing interest in monitoring methods among producers with private land leases. "I've seen some folks attending workshops to learn how to monitor and develop monitoring documentation for private ranch properties they lease. Their intention is to use the monitoring and reports to impress their current landlord with the stewardship efforts being applied to his or her property, or to market to other prospective landlords the stewardship they bring to the lease as a prospective lessee," he reports.

Similarly, Orchard says he has seen a trend toward absentee landowners who want to establish monitoring as a baseline to verify the stewardship practices their renters are applying.

Orchard adds, "I believe in the near future there will be a sector of ranchers marketed as professional land stewards who will not only be able to acquire lease properties very cheaply — or even for free — but may eventually be paid to provide their professional management services to the lands of the New Age ranch owner."