

BY LORETTA SORENSEN

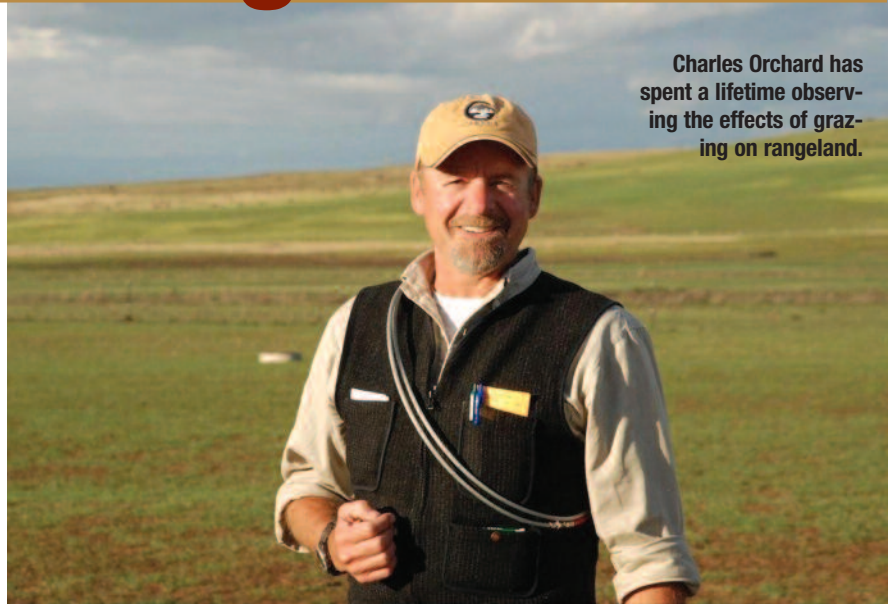
pasture management

PHOTOS BY EKG

Pasture Pulse

Accurately tracking pasture conditions might seem overwhelming at times, but it's critical to making good decisions and optimizing the grazing potential of your outfit. As Charley Orchard grew up and worked with his family on their +100 section Wyoming ranch in the 70's and 80's, he began to see that standard academic or Agency monitoring techniques had some weaknesses (too much rigor and too few answers). His efforts to fill those gaps led him to develop the Land EKG™ Monitoring system he started sharing with ranchers and land managers in 1994.

Orchard says Land EKG™ is intended to clearly validate land condition and function, help make grazing or other management decisions, and



Charles Orchard has spent a lifetime observing the effects of grazing on rangeland.

provide rapid benefits for users of the system. The company specializes in monitoring schools for ranchers, also offering management products and consulting services.

"It's all done professionally, yet very easily," Orchard says. "It's always been our objective to develop the absolutely most practical monitoring tools and techniques available that land managers can apply themselves in order to achieve success."

A big part of Orchard's system con-

sists of DataStore, an on-line database (don't let that scare you - it was fun to use, I tried it when I researched this story) that - from anywhere with Internet connectivity - ranchers have access to both record their personal grazing data and generate reports that provide a snapshot of grazing activity and conditions. The program is maintained on the "cloud" or server Orchard provides so users don't have to contend with software updates or maintenance.

Land EKG Rangeland Technician, Rebecca Ritter, serves as the company's database expert. "We've worked with some ranchers who had good written monitoring records and experienced fire, flood, theft and sometimes just negligence and lost all their data," Orchard says. "DataStore is a 'safe-house'; it's their online data entry system. The pages tell you what data to gather. Once your information is input, the system automatically analyzes it. The click of a button generates a printable report that includes pictures uploaded by the user."

Part of the information gathering process includes establishing permanent line transects or photo stations. Ground hoops are used to confine small areas that are photographed so the images can be used for future comparisons of forage and soil quality. Up to six photos per record can be stored.



Land EKG Monitoring provides simple guidelines for gathering rangeland data and interpreting the information to help create grazing strategies.

Two landscape photos are also recorded so year-to-year images of the area can be compared to help measure soil and forage changes on an annual basis.

“The monitoring process can be fundamental or more comprehensive, that’s up to the individual manager,” Orchard says. “Our basic program is called Land EKG Blink and the comprehensive program is Land EKG Pro. Most ranchers self-apply the Blink program.”

Orchard has developed a Land EKG Monitoring diagram to help managers understand how to thoughtfully and easily build a monitoring program. Basic tactics and tools are used to start a few monitoring areas. Accuracy is added as a second stage. Repeatability is the third level and comprehensiveness can be added with a fourth level.

One aspect of EKG Pro or Blink includes a Grazing Index - a great way to score grazing practices. Two components not found in other grazing indexes include season and year-end litter. Both, Orchard notes, are critical to an accurate evaluation of a site.

“You have to consider the time of the growing season that forage is grazed,” Orchard says. “For instance, when plants are ready to re-seed themselves, you can compare their physical status to being pregnant. They’re less stimulated by grazing than earlier or later growth. We also added precipitation as a factor, and we account for the amount of residue available for soil cover at the end of the season. Those elements significantly impact plant and soil health.”

GRAZING MATRIX REPORT CARD

The Grazing Index matrix looks something like a report card and includes scores for season of grazing, year-end residual, rest opportunity and rainfall. Relative to the management and field visits, each of these indicators receives a +1 to -1 score (rest is +2 to -2) which are then tabulated together. The result is an overall management score ranging from +5 (good) to -5 (not good).

“Recorded scores serve as an extremely effective way to not only historically rank grazing in each pasture, but also provide ‘answers’ for management options to improve the score,” Orchard says.



One of Land EKG’s tools is a report card that provides rangeland managers with a checklist of information necessary for effective evaluation of grasslands.

Orchard’s system doesn’t require ranchers to spend hours observing forage and soil in order to gain at least a thumbnail perspective on their system’s health. Within a few minutes they can gather useful information that allows them to start managing grassland for improvement.

In training with ranchers across the nation, the EKG team has had the opportunity to observe first-hand how some managers miss out on realizing their potential because they don’t have complete knowledge about managing their soils and forage.

“In some cases new knowledge about grazing management has producers not only achieving the land’s estimated best potential, they’re actually doubling, tripling or even quadrupling that ‘best expected’ potential,” Orchard says. “Amazingly, that’s in some semi-arid environment types.”

A big part of that grazing approach intends to return a larger percentage of forage to the soil as litter than what’s being consumed and follow grazing with adequate rest.

“In the end, this causes such an increase in organic soil matter levels it can improve infiltration rates and water holding capacity and available nutrients in some cases up to almost 400 percent,” he adds.

Orchard emphasizes that any monitoring program should provide a way for the manager to clearly verify mon-

itoring activities and make management decisions. A little bit of forethought helps, too.

“Whatever the goal, the program should be planned in order to be effective,” Orchard says. “Without forethought, monitoring turns into a get’t done drive around, kick a turd, snap a pic, call it good program. I’ve never seen anything like that be successful. The monitoring program should demonstrate that the manager is paying attention. That validates landowners’ stewardship practices, especially with leased land situations and urban public perceptions. The monitoring process also must provide objective, understandable and useful feedback that can be used in management decisions. That’s what allows the manager to prosper and stay in business.”

As Orchard describes “typical” rangeland, he notes that, in spite of the huge range of geography and environments found on the nation’s grasslands, ecological principles in each area function quite similarly.

“As long as we consider pasture and range systems from the perspectives of nutrient and water cycling, plant state, and energy flow processes, Land EKG concepts hold pretty true,” he says.

Kansas rancher Ted Alexander, who was just named the recipient of the 2010 Kansas Wildlife Habitat Conservation Award, has adopted

Orchard's EKG system and has seen its effectiveness firsthand.

"You have to measure before you can manage," Alexander says. "That's the key. For every dollar I've invested in land monitoring, I've seen \$50 come back to me. That's how effective it is. It's phenomenal."

Alexander discovered Land EKG in 1997 when his father was suffering from heart ailments. The idea of "checking the pulse" of his land immediately resonated with him.

"If you don't have a goal, you can't know where you're going," Alexander says. "Just Charley's method for clipping, weighing and drying grass to determine the amount of grazable forage in a pasture brought me to another plateau. Now I understand that I need a grazing stick to measure my forage. That's Charley's way."

"There's really good knowledge available regarding how rangelands can be managed to optimize their potential," Orchard says. "People are using grazing management to hold



Ground hoops are used to confine small areas that are photographed repeatedly over time to document progress.

more water in the soil, increase fertility, exceed production and sequester carbon, increasing production levels three or four times beyond what experts thought was possible. This

really isn't rocket science, you just need a good way to pay attention.

More information about Orchard and Land EKG Monitoring is available at www.landekg.com. **WR**