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Enough pasture recovery?

Ask the land and monitor

By Patrick Francis

Charley Orchard says there are still far too many livestock farmers with the mentality of 'when there's grass graze it, and when it's gone, find another pasture or provide replacement feeds like hay, silage or grain'.

Systems to assist in monitoring pastures and calculating feed available for livestock have been around for many years and come in different formats depending on the consulting group the farmer is associated with. While grazing charts and rulers all help in making decisions, a holistic based chart developed by Charley Orchard, Land EKG, Bozeman Montana US provides a comprehensive dimension to rangeland pasture monitoring.

Speaking at the STIPA native grassland national conference in Horsham last November, Orchard said his EZ EKG Easy System card puts a complex group of issues into one simple paddock graphic and anyone can interpret it.

This is the type of data more livestock farmers need to determine and record to demonstrate their stewardship credentials especially when it comes to issues such as nutrient runoff, soil carbon sequestration, and greenhouse gas emissions.

Orchard is associated with a group of US rangeland consultants that have developed the Carrus Land System of property management. His company provides monitoring expertise.

"My business is based on the objective of optimising solar profit by creating healthy soil systems and diverse plant and animal communities. We turn data into meaningful information you can make decisions on. It's about achieving a balance between practical information and scientific rigour," he said.

A constant component of Orchards message is about walking in paddocks and making observations, then recording them. He says there are still far too many livestock farmers with the mentality of 'when there's grass graze it, and when it's gone, find another pasture or provide replacement feeds like hay, silage or grain'.

"No thought process could be further from correct when it comes to short and long-term business profits from animals and the land. The value of a grazing plan can hardly be overstated. If done correctly, this planning tool can literally save tens of thousands of dollars annually in purchased feed or lost revenues for a grazing manager, as well as minimise the emotional stress that may occur during drought periods," he said.

Understanding recovery

Based on the group's grazing work in North America, he's concluded there is probably no more important – yet less validated-grazing attribute than proper recovery period. Plants that are grazed need adequate time to recover from defoliation.

Just because it grows back, doesn't mean it's recovered he said. If the recovery period is insufficient, the desired plants will be ultimately subdued and/or replaced by other, better adapted species.

"Unfortunately "subdued plants" are tired plants; they can

How will a grazing plan benefit my operation?

1 Economically: Grazing plans allow managers to generally forecast whether there will be too much, too little, or an adequate amount of forage available for grazing animals. This provides the advanced ability to determine re-stocking and/or de- stocking strategies prior to "out of grass" situations and poor market conditions when everyone else is selling. Most importantly, proper planning can increase profit, primarily through improved animal performance and elevated nutritional plains, increased herd immunities, decreased human and animal stress, and higher reproductive performance at less cost. Furthermore, approved grazing planning documentation will be critical relative to larger global issues such as carbon sequestration and carbon credit payments in the future.

2 Ecologically: Advanced grazing management planning allows the processes of nutrient and water cycling to better hold soil moisture and increase fertility. Biologically, plant and animal communities function better, which includes improved large and small wildlife habitat and riparian system function. Additionally, energy flow (production) can be drastically improved with proper grazing planning as well.

3 Socially: Grazing plans provide a sense of control and peace of mind for on-the-ground mangers. In some cases, planned grazing documentation is a requirement for US federal, land trust, or private leases. More and more, grazing plans are becoming the industry standard.

Graziers can momitor impact of rest by adding exclosures or using existing ones like roadsides and vegetation corridors to find out what the land is saying.

perform very poorly, are more drought sensitive, have lower quality, and may not reproduce. While "replacement species" are usually vigorous, they are almost always less desirable, less productive, and can easily overtake a weakened pasture.

"Then we spend our time unknowingly treating the symptoms by spraying, burning, applying animal impact, reseeding, or otherwise fighting back while our desired plant community may be just simply, ... tired and needing a rest. Does this sound familiar? Think about recovery."

What is a proper recovery period?

When contemplating recovery periods, Orchard said three things should be considered:

- moisture conditions,
- plant type, and then
- grazing intensity.

Compare a controlled environment, irrigated pasture with a less controlled rangeland. Under irrigation conditions there is a lot of grace for pasture (consistent moisture and hardy plants), and

How the EKG Easy System card works

Charley Orchard offers graziers a suite of rangeland monitoring tools but his EKG Easy System meets the requirements for simplicity and effectiveness.

What stands out by marking the card for a particular site in a paddock, is that the farmer obtains an 'instant readout' of its ecological health and likely productivity.

This is achieved by comparing 'profit zone' indicators on the 'x' axis against 'ecological processes zone' on the 'y' axis. These zones are connected via 18 indicators grouped under four main headings:

Nutrient Cycling

- Living organism signs
- Litter amount and distribution

Water Cycling

- Gullies/trails/roads
- Sheet erosion/pedestalling
- Bare ground
- Soil Crusting/germination sites

Biotic State

- Weed/annual plants
- Desirable plants
- Species diversity

Energy Flow

- Canopy cover
- Plant Form
- Production/utilisation

Drawing a line through scores of the card Matrix provides the owner with a snapshot (land EKG- like a human EKG) of the paddock function.

Given the snapshot is taken at the same site on specific dates each year then a history of the impact of grazing management is recorded and the basis for decision making is improved.

For farmers looking for a more specific monitoring tool he suggest the Transect EKG where a specific line through a paddock is monitored through time via identifying the indicators within hoops along the line.

By marking the EKG Easy System card for a particular site in a paddock the grazier obtains an 'instant readout' of its ecological health and likely productivity.

Residual (leaving enough behind)

It is imperative for the grazier to understand the importance of planning for how much residue forage should remain in the pasture at the end of the grazing period and/or grazing season.

Many people talk about utilisation (percent of forage removed), but from a land manager's perspective it is psychologically more important to view this in the opposite light and focus on the percent of forage remaining. This is known as the residual forage, or just residual.

In areas where production is less than 1000kg/ha, leaving at least 50% of total seasonal production is a long-held and common goal.

In higher producing areas, leaving at least 500kg/ha residual is probably adequate. There are situations however, when leaving 60%-100% may be appropriate such as: (1). Pastures are ecologically poor functioning, (2). In drought conditions (3) Too much bare soil exists, and/or (4) Adequate basal or litter cover is low.

recovery periods can be relatively short and become primarily a function of grazing intensity.

So, generally speaking recovery periods may range from 20-45 days depending on the intensity of grazing. The higher the intensity the longer the recovery time needed and visa-versa.

In contrast under less "controlled" western plains rangelands-natural rainfall (≤500 millimetres), native plants, and moderate grazing use, impressive results are emerging using extended recovery periods ranging from 13- 30 months in duration.

Ask the land

Orchard said to determine what is the proper rest period for a paddock, why don't you ask it?

"One of several simple monitoring devices we encourage is to construct a permanent grazing enclosure - call it a recovery pen if you'd like. Picture at least a 5m x 5m area (or larger) permanently fenced, pen-sized area, located at a few places on the ranch. Once completed, just be patient, and watch.

"What we have observed thus far, in all cases, is improvement. It may start slowly at first (one or maybe two growing seasons), but then ecological aspects will begin to move ahead positively (improved infiltration, new species, higher production are examples) for the next one to two years. Following this, with no grazing a permanent period of decline will at some point begin to occur," he said.

There are managers who are moving to these "extended recovery periods" with success, and in one case a Montana rancher now essentially carries his whole herd on 1/3rd of his ranch (using multiple pastures) each year, resting the other 2/3rds. Each year the herd moves onto the "1/3" which has been rested for two years.

"Though utilisation is high and animal performance just adequate, his pastures look exceptional. I believe he has keyed in on the idea of recovery. Is his approach sustainable? …time will tell," he said.

Across Australia enclosures which tell a story can be fenced off riparian or remnant vegetation. Even roadside fences tell a story especially if the road is a travelling stock route where intermittent grazing occurs. However, he cautions about over resting pasture land which can happen with conservation covenants.

What is this saying?

"There are a lot of ranchers aware of old permanent enclosures in their area. For years these "examples" have been used to show the negative long-term effects of not grazing. And most of the time this is true. However, what we are saying is to really observe the short term (two to four years) effects of rest and what it may produce.

"We have now seen in all cases so far, that two to four years of rest have dramatically changed and improved water infiltration, organic matter, desirable plants, species diversity, plant vigour, and production. In some cases, native species we didn't know could be present have begun to show up and thrive.

Orchard contends farmers should think about how recovery periods currently being used are determined.

"Then you might want to ask your land manager instead of a book or your neighbour. Unfortunately, there are a number of land managers who are failing in their mission because they are so focused on "doing things right" (and by the book) that they miss answering the most important question: Are they "doing the right things?" (looking at the land).

"Try building a few of these "recovery pens" on some of your different land types (or concern areas) and watch them over the next few years … and pay attention. If nothing changes then it is good confirmation of your management. But if change does occur, the land may be trying to tell you something," he said.

Find out more:
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