Trio Angus—
Improving Production through Drought and Fire

BY ANN ADAMS

In the past two years Matt Cherry & Shelley Piper of Trio Angus have had to deal with challenges of biblical proportion. In February 2017 the Sir Ivan Bush Fire roared through and burned all 1,700 acres. Then they continued to have drought conditions for the next two years. Luckily at that time they had just begun to learn about Holistic Management from HMI Certified Educator Dick Richardson. The result? This year, despite, still being in drought, they have 25% more forage production on their land than they did before the fire.

Switching to Planned Grazing

Matt and Shelley purchased the farm and stock for Trio Angus from Shelley's parents in 2012 near Cassilis in New South Wales, Australia. Their main business is raising and selling seed stock cattle. Shelley grew up on the family property and Matt had grown up nearby. They both went off to university and further studies. Shelley went on to be a Project Manager for a feed yard and worked for the Angus Association. Matt also worked in a feed yard and was a livestock marketing agent. "But, it was always our dream to come back to the family farm and run our own business," says Matt. "We had to wait for the right opportunity." It was a two-year transition when they decided to buy the farm. First, they leased and then they set up the paperwork as they paid for the farm and the purchased the seed stock over five years.

Then in 2016 they met Dick Richardson who was involved in a field day near them. "It was really interesting," says Matt. "We had been running a set stocking operation, and doing a rough rotational grazing program, nothing structured. Dick's way of talking and thinking about all aspects of the environment really made us think about what we could be doing. So we got involved with a bit of a working group with eight other farmers from the area. We've been meeting quarterly and we generally meet together on one property with Dick. We do a rotation with picking a different property each time. We learn from Dick and the group and what practices people are trying on the other farms. It's really helped us.

"What got us interested the most was what Dick said about how we could get more performance out of our native grass. We always had lot of rank, mature grass that we couldn't get the cattle to eat. As we worked on that, we also learned about soil health and biodiversity. We hadn't been educated in these aspects of grazing, so we began to look into more of these aspects of the land and how it was influencing the forage. But Dick really helped us understand the importance of having different patterns of use for each paddock. We had patterns of using the same paddocks in the same way, and he made us think about changing it up for the health of the land and the animals.

"The difference was amazing. We've had a rough run with the bush fire and bad drought. But even through that period, we've been able to lift production and have our cattle in good health. We're really excited at the gains we've been able to make. Previously we were on the track of replacing our native grasses with Lucerne (alfalfa) and introduced temperate and subtropical grasses, which would have been very costly. Instead we've been focused on having bigger mobs and smaller pastures to get more out of our native species, which has cost us very little in the way of wire and some water." That 25% increase in production has come despite currently being at 70% of annual rainfall for over two years.

"The neighbors have been interested in

From left to right: Shelley, Owen, Eli & Matt.

Trio Angus raises seed stock Angus.

what we are doing," says Matt. "When our grazing group has toured our property, they can't believe the change we are getting. We are just implementing the grazing strategy that Dick has suggested. We lease 600 acres across the road from us. Originally it was five paddocks, and we've got it so we have 12 paddocks now, about 8–30 ha (25 acres) each, where we can now run a single mob of dry cattle all year because we have two different calving seasons. We have four to five mobs in total now, which is half the number we used to have. We can see the benefit of smaller paddocks and moving the animals more frequently, but we don't want to move every day. So that means they spend three to seven days in a paddock. We have 80–100 cows in a mob or 50–60 bulls, weaners, heifers, etc.

"We've been following Dick's "Grazing Naturally" pattern of use as part of a grazing plan he's helped us set up. He told us to pick one paddock as a priority paddock in the rotation. We number that number 1 and then number the other paddocks from there. In the growing season, when that number one paddock, reaches 1,000–1,200 kg/ha (900–1,000 pounds/acre), then we go in and graze it again. We then go on to graze the other paddocks in the same sequence until the number 1 paddock is ready again. We might graze that first paddock eight times, other paddocks will be grazed less times and we might not graze some at all and leave them for a stockpile."

In this way, Trio Angus' recovery period varies depending on the rain and the desired influence on a given paddock. During the growing season, the recovery period averages around three weeks. "We talk about having a landscaping event on a paddock, where we may graze it hard to stimulate root growth, but we work to still maintain ground cover," says Matt. "So we may pick Paddock #1 because it needs improving because it is the least productive. All the other paddocks revolve around Paddock #1. Dick's benchmark is to allow a paddock like that to get to the height of a cricket ball (approximately three inches) then to graze to the height of a golf ball (one inch). This grazing works well for us in our 25-inch rainfall. Groundcover is not the issue for us. We have more issues of utilization of grasses. The other paddocks might get four weeks for recovery or even five weeks. For example, we only got to Paddock # 3 but then we headed back to Paddock #1 because it was time to be grazed. During the dry season we went through all of the paddocks only once and with this system we've been able to grow a lot of bulk for the winter. We want to really mix it up for each paddock, so we can get the plants to experience different pressures."

Prior to the fire and planned grazing, much of the lovegrass was under-utilized and was creating a mono-culture of grass. Now, with planned grazing Matt and Shelley are seeing a lot more plant diversity and have increased production by 25%.

Even in the dry season there is good production despite the two-year drought. You can see the post graze on the right side of the picture and the pre-graze on left.

Trio Angus' stocking rate is down a little a bit as they have 160 cows currently. They run a total of 450 head all year. These numbers are working for them as even through the dry season they've been able to keep their ground cover. "We've had similar numbers from when we started despite the drought and bush fire," says Matt. "Sure, there's still room for improvement. Right now we are tackling the water system. We've been busy upgrading fencing and water by putting in underground water, poly pipe and 20 troughs. From there we've been able to split paddocks with one permanent electric fence wire for internal fencing and keeping the existing external fence.

"We've found incredible labor efficiencies with our water investments," says Shelley. "Before we were spending so much time on maintaining our old water system. Now we've upgraded to solar panels and have sensors at all the bores and tanks so it saves a lot of labor with everything being automatic. We were spending half of day a week on water and now we don't really have to do anything. Our system is set up to handle a potential capacity of 1,000 head. And the water is better quality with the troughs instead of drinking out of dirt tanks. Now we have two wells and Dick gave us advice on positioning these water points to help us make the best investment."

"Every three months Dick checks in with us and we go over our grazing plan for the property. We crunch the numbers and he checks our work and asks questions. We've been using the Maia Grazing software, but we've just got going on it. It's a great tool! We've started to use it to document our grazing chart and to predict our base forage on rainfall and stocking rates. We've only been doing it this year. We knew the information, but we didn't know how to use the software. We put our previous year's data in and then we are adding as we go along. The greatest value is that Maia is a lot quicker with

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Trio Angus

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the math so you can get that info very quickly. Being able to project where you are headed to figure out how you will stock and destock lets you make use of opportunities. We can also share the data with Dick more easily."

Moving Forward

Matt and Shelley have been excited by the results they've been able to achieve with these new practices. "In the past, we were treating a lot of symptoms like spraying weeds or putting on fertilizer to make paddocks productive," says Matt. "But with the planned grazing we've been able to reduce inputs. That has meant massive savings. We don't use fertilizer or herbicides as much anymore as we don't need them." Those changed practices means an annual savings of at least $10,000–20,000 for Trio Angus.

The impact of the fire shows still after two years particularly on the improved pastures. The fire came through and burnt the right side of this pasture. Due to lack of ground cover there are still challenges with low organic matter and low water infiltration rates.

Even Dick Richardson has been amazed at what Matt and Shelley have been able to do in such a short amount of time. "We just pick up the simple things we can do," says Matt. "We quickly realized, the number one resource we need to focus on is our people. We felt we were limited by our education and so we focus on education and look at ideas that challenge our way of thinking. We think we can make even more changes in the future.

"We had to learn how to recover from the bush fire that hit us in 2017. Other neighboring properties have been slow to respond after that fire. They can see what we are doing and how the land is responding, but it's so easy to keep doing what you are doing. Some of our neighbors are coming to the end of their careers so they are less interested in changing. We've learned we have to keep challenging our way of thinking, and ask ourselves what could we be doing and why are we doing it. We've got on so well with Dick as he always keeps you thinking.

"We were just like everyone else. We hadn't really been looking to change, but we got hooked. We got some information from that field day and then we made a few little changes and got some big results. Now my father is experimenting. He had a couple of paddocks and tried fencing it into some smaller paddocks and found the cattle did well and always had feed in front of them. Now he's going to experiment with some permanent pastures.

"We are also passionate about sharing this information with other young farmers. We held a young farmers' breakfast in the middle of the drought and had 60 people attend. Some people from our farmers' group also came. We introduced a few conversations about how we are handling the drought and are going to have a farm tour to get more people in the district on board and help share the information.

"In a nutshell, since the fire and drought, we've really had to watch our grazing management. Without Dick's involvement we wouldn't have been able to capitalize and maintain production the way we have and his help has been really valuable. Really what he taught us to do was to match our stocking rate to our carrying capacity. If you don't do that, the land suffers. If you do that, everything begins to work better and the land responds in the rain.

"Our vision for the farm is to work more with nature rather than against it and aim for more perennial pastures and a grazing system that supports that. We have a couple soil types—sandy and basalt. The sandy soil has consol and lovegrass. I hate that grass because it matures so quickly, but it's been one of our best assets through the dry due to its ability to maintain cover and respond quickly to small falls of rain. It really gives a lot of production, but it has to be managed as it gets rank. That was one of the best things about the bush fire. It burnt off the rank stuff and gave us a clean state.

"With Dick's help and planning we were able to manage the lovegrass and the amount of grazing was unbelievable. We're growing more dry matter now and keeping it from going to seed. We've seen changes in species, and the new species are spreading more, and are more obvious to see. The other species are coming in to fill in since the lovegrass has been grazed more—clovers, herbs, and annual grasses as well due to getting access to more sunlight. The fire made us realize that there are opportunities in every situation. The drought and fire has helped us make us more resilient."

To learn more about Trio Angus visit their website at: www.trioangus.com.au

Paddock moves happen every 3–5 days and are made easy with new fencing and water infrastructure which has helped improve labor efficiencies.

LAND & LIVESTOCK

Grazing Naturally

BY DICK RICHARDSON

Holistic planned grazing was originally developed based on the old science that soils build from the top down and building masses of soil surface litter is the secret to soil health. However we now know this is not true. Soil is built by biological activity living off root exudate from green actively growing plants. Old litter at soil surface inhibits this process if too thick and plants whose growth rates are slowing down or becoming less vegetative no longer feed the rhizosphere as much as before.

Planned grazing was built around using recovery periods based on the recovery rates of plants results in lighter grazes when plants grow quickly and less and less active plant growth across a growing season. The subsequent stagnation in biological activity leads to less soil development and poorer quality feed production. People perceive the magic bullet to fix this issue to be very high stock densities that further compound the problem by increasing soil surface litter and stressing the animals. This is a lose-lose scenario.

Venter & Drewers Grazing Method

Scientists Venter and Drewers developed and tested a variable grazing strategy in South Africa that comes close to fitting with the variation and extremes of nature. A fire treatment is included in this strategy. The method is based on a 5-paddock or 5-zone plan (multiple paddocks divided into 5 zones). Over a period of 5 years, each paddock or zone, is repetitively, heavily grazed, then used less and less until rested completely in the 5th year. The rest year commences with a wet season and ends with a burn prior to the break of the following wet season. Prior to the burn, the paddock is used for a light graze, e.g. calving cows. The rested and burned paddock (or zone of paddocks) becomes the priority or repetitively, heavily grazed paddock the following year. **(Table 1)** presents the Venter and Drewers grazing method. This strategy covers many of the natural variables and Venter and Drewers found it to result in high levels of change, sustained over time with higher stocking rates and good animal performance.

Note in the Venter-Drewers table that the "short-graze height" in the "priority paddock" is measured as "sole height" and the herd is returned when growth begins to reach "toe height". "Also note that this heavy utilization only happens for one season or in Year 5. The grazing pressure drives photosynthesis, speeds up the mineral cycle, increases plant basal size and thus reduces plant spacing. Although such pressure can result in plants appearing to be over grazed, it is for only the one season in five and the total 5-year succession results in soil and plant health improvement.

Reference: "Benefits of Multi-Paddock Grazing Management on Rangelands: Limitations of experimental grazing research and knowledge gaps," *Grasslands* by Richard Teague et al, 2009 describes Venter and Drewers grazing system.

Grazing Naturally Method

Dick Richardson's Grazing Naturally method **(Table 2)** is a modification

Year	Pad/Zone 1	Pad/Zone 2	Pad/Zone 3	Pad/Zone 4	Pad/Zone 5
1	**Priority**	2nd choice	3rd choice	4th choice	**Sabbath**
2	2nd choice	3rd choice	4th choice	**Sabbath**	**Priority**
3	3rd choice	4th choice	**Sabbath**	**Priority**	2nd choice
4	4th choice	**Sabbath**	**Priority**	2nd choice	3rd choice
5	**Sabbath**	**Priority**	2nd choice	3rd choice	4th choice

Table 1: Venter Drewers Method: 5-Paddock (or zone) Plan for a single mob / herd during Growing Season or Wet Season

Year	Pad/Zone 1	Pad/Zone 2	Pad/Zone 3	Pad/Zone 4	Pad/Zone 5	Pad/Zone 6	Pad/Zone 7
1	**Priority**	2nd choice	3rd choice	4th choice	5th choice	6th choice	**Sabbath**
2	**Sabbath**	**Priority**	2nd choice	3rd choice	4th choice	5th choice	6th choice
3	6th choice	**Sabbath**	**Priority**	2nd choice	3rd choice	4th choice	5th choice
4	5th choice	6th choice	**Sabbath**	**Priority**	2nd choice	3rd choice	4th choice
5	4th choice	5th choice	6th choice	**Sabbath**	**Priority**	2nd choice	3rd choice
6	3rd choice	4th choice	5th choice	6th choice	**Sabbath**	**Priority**	2nd choice
7	2nd choice	3rd choice	4th choice	5th choice	6th choice	**Sabbath**	**Priority**

Table 2: Grazing Naturally Method: 7-Paddock (or zone) Plan Growing Season or Wet Season

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of the Venter-Drewers system to avoid regular use of fire to drive an animal-reliant rather than a fire-reliant community. While Venter-Drewers use fire to prepare a rested paddock for priority grazing, Grazing Naturally uses grazing to prepare a paddock for a spell, a Sabbath. Thus, the priority grazed paddock (or zone) becomes the Sabbath paddock. After a one-year spell, this paddock does not become the priority paddock as in the Venter-Drewers method, it is the least-utilised and grazing gradually increases over six years, becoming the priority paddock, prior to another Sabbath. As with Venter-Drewers, priority paddocks are grazed until short, though not as short, i.e. down to the toe of the boot (or golf ball), not the sole. It is grazed again when the grass is ankle height (cricket ball). In the northern tropics, it is better to at least start by measuring low by using a beer can on its side and high by the can standing upright.

The Grazing Naturally method reverses the paddock selection sequence of the Venter and Drewers method. Fire can be used in the Grazing Naturally method, during the growing season while livestock are present in the paddock. Burning takes the form of patch burning non-grazed unpalatable grass through the paddock (or zone). Such treatment may be more necessary in the first years of implementing this grazing method. We have people practicing this from the far North east tropics of Australia with 2.5m (100 inches) of rain down to the Southern central coast where some of these lands are in very marginal rainfall conditions with rainfall to 250mm (10 inches).

Venter & Drewers System

Priority Paddock/Zone: Burn after break of dry season (storm season) i.e. commencement of the wet season – effectively creating 'green pick'. Graze as soon as the grass reaches toe height; graze short and as often as regrowth allows (8+ times); graze until you can see the sole of your boot from the side and return as soon as it starts to hide your toe.

2nd choice after priority paddock – return to priority paddock as soon as the grass reaches toe height or move on to next choice (3rd).

Stock Number Note: If getting to **4th** paddock more than once, a **stock reduction** should be considered. If not reaching the **3rd** paddock, an **increase in stock** number should be considered.

Sabbath: Rest for 12 months (or 10 to 14 months) – no grazing through the growing season; Graze while waiting for next season to break i.e. calving. Then following a burn this paddock becomes the priority-paddock at the break of season in Year 2.

Grazing Naturally System

Priority Paddock or zone of paddocks: Graze short and as often as regrowth allows (8+ times); graze until you can see a beer can lying on its side and return when you cannot see a beer can standing upright. Note: This paddock / zone becomes the Sabbath paddock / zone in Year 2. Always move from the priority to paddock / zone 2.

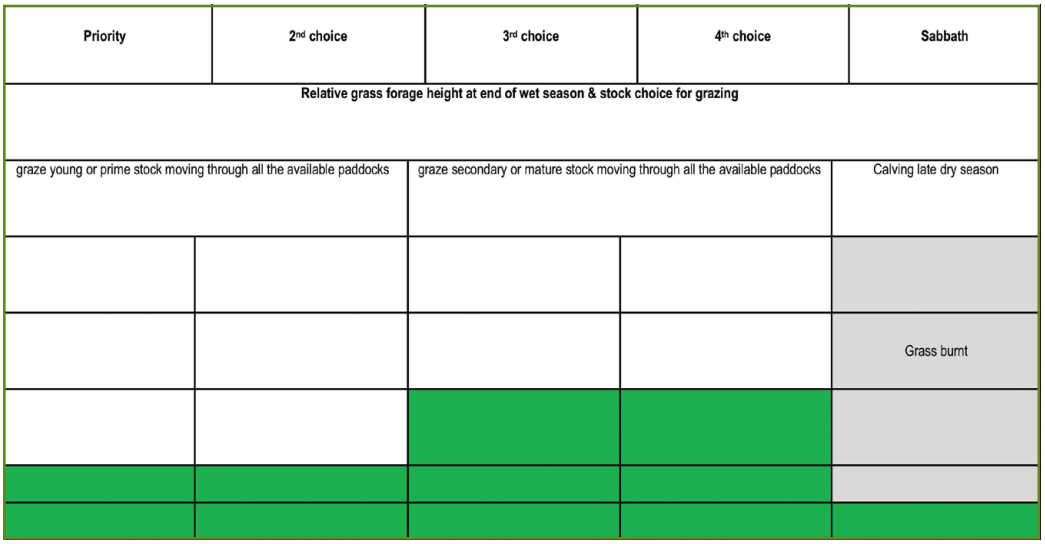

Figure 2: Venter and Drewers Method: Non-Growing or Dry Season: Previous Growing Season Use of Paddock or Zone

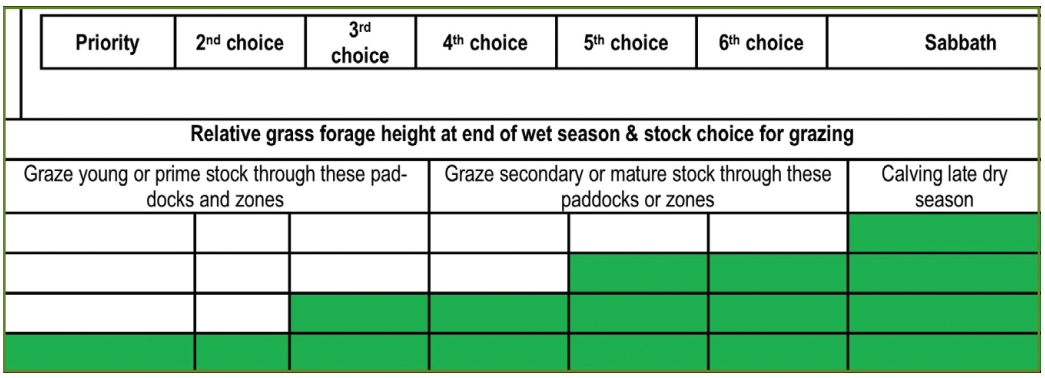

Figure 3: Grazing Naturally Non-Growing or Dry Season: Previous Growing Season Use of Paddock or Zone

2nd choice paddock / zone after priority paddock: return to priority paddock / zone as soon as it gets to beer can height or move on to 3rd choice. Note: This paddock becomes the priority use paddock or zone in Year 2.

3rd to 6th choice paddocks – used progressively as needed until priority paddock / zone requires grazing again.

Stock Number Note: If getting to **5th** paddock / zone more than once, a **stock reduction** should be considered. If not reaching the **5th** paddock, an **increase in stock** number should be considered.

Sabbath: Rest for 12 months (or 10 to 14 months) – no grazing through the growing season; can use for calving in the late dry season. This paddock or zone becomes 6th use paddock at the break of season in Year 2, i.e. is the least used in Year 2.

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Reader's Forum

Investing in Soil Health is an Investment in Our Community

BY KATHY KAESEBIER

My family has been farming in Illinois as far back as anyone can remember. Farming supported my parents and grandparents and generations before them. In recent years, then, I've wondered why, when we're farming twice the acres they did, my husband and I need off-farm jobs to make ends meet. The answers we're discovering are coming from a surprising place: the ground under our feet.

First, let me step back a few years. We were having some unusual problems with our soil that no one could explain, and when a friend suggested we sign up for an intensive soil health training course, we jumped at the chance. The course gave us a new and comprehensive understanding of the soil microbiome and strategies for strengthening it, while addressing our disease and weed pressure challenges.

We started planting cover crops—20 acres at first, and now on every acre possible where we practice full soil health measures. We're testing our soil for active organic matter and we adjust the nutrients we add accordingly. And we've diversified, a lot. Besides corn and soybeans, today we're also raising wheat, a few cattle, Katahdin sheep, meat and layer chickens, and honeybees.

Our yields are steady, we're saving money and we're having more fun farming than we have in years.

But what we've learned is bigger than our farm. As modern farming practices separated crops and livestock, farmers were encouraged to buy more inputs from chemical and seed companies. Farmers became reliant on recommendations from retailers and big agricultural companies. In recent decades, farmer incomes have stayed flat while agribusiness profits have skyrocketed. The impacts of not keeping our money in our communities are clear: small farms have gone out of business and our downtowns, schools and churches are struggling.

And here's where we find the answer to my question: investing in soil health is an investment in our community and our local economy. On our farm, our cover crops—and now our animals—are saving us money on inputs.

We spend far less on fertilizer and we've limited insecticide, fungicide and seed treatments on the fields where we practice soil health. That's more money in our pockets. The livestock will bring us additional income and they're keeping us busier than ever. Bringing animals back to more farms would create much-needed rural jobs. We have a strong farmer community who are generous in sharing their on-farm experience and knowledge with us, which helps us know better what our fields need and how to provide it more naturally.

There are so many benefits to improving soil health, but there are many uncertainties when considering a change like planting cover crops. We also sell crop insurance, so we understand the importance of managing risk—and there is a tool that can help mitigate the risk of this transition.

Kathy and Rick Kasebier

Iowa piloted a program last year giving farmers a $5 discount on crop insurance premiums for every acre planted with cover crops. We need a similar program in Illinois, to make farmers more comfortable when adopting cover crops. The proposed program here has broad support from farm and conservation groups.

On an individual field, cover crops improve the soil, save money on inputs, and often give a yield bump on the next crop. Widespread planting of covers, along with introduction of more grazing animals and other measures to improve our soil health, will yield benefits for our whole state and region.

Kathy and her husband, Rick, are Holistic Management practitioners farming in Elkhart. This opinion editorial was first published in The State Journal-Register: https://www.sj-r.com/opinion/20190419/guest-view-investing-in-soil-health-is-investment-in-our-community.

Grazing Naturally

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Non-Growing or Dry Season:

Depending on the number of paddocks available, the Grazing Naturally method can work on a four to seven-year cycle, though a seven-year cycle is preferred. If only three paddocks are available, then one of the paddocks can be wet season spelled, one treated as a priority paddock in rotation with the other. The paddock used as priority is spelled the following wet season. When paddock numbers exceed seven then paddocks can be divided into zones of paddocks. Where multiple mobs are run each mob can have its own set of paddocks.

In any method of grazing, it is advisable to avoid stock densities getting too high, to avoid fouling of forage and to allow animals to choose when and how to graze. For example, animals graze into the wind to avoid reduction of forage intake by emission of plant toxins (e.g. tannins). High densities can be used with heavy landscaping events. The ideal graze period for animal performance is two to three days.

Development Corner

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of the Holistic Management framework.

In a world beset with so many challenges, it is very exciting and motivating to be involved with the Holistic Management community where there are very powerful positive stories of success. These stories provide hope and practical solutions to healing our degraded landscapes, our depleted food systems and our human psyche. We humans correctly blame ourselves for pollution, extinctions and degradation. However, we can now, through better decisions, be part of the solution to past errors. We can build vibrant ecosystems, healthy environments and healthy relationships. I see HMI as being a key in fostering and empowering this growing community of success. Collaborations, training and sharing are what have sustained HMI. This passion to share, refine and improve what Holistic Management can do for ecosystems, communities and individuals is why I remain involved with and support HMI.

Wayne Knight is a beef farmer near Mokopane, Limpopo Province, South Africa