

Dr Ron Ehrlich: Hello and welcome to Unstress, I'm Dr Ron Ehrlich. In March this year, I had the pleasure, with my wife Annie, of visiting the Southern New England area around Armidale and Uralla in Northern New South Wales to give a talk and do a workshop with the Southern New England Land Care Group. It also involved spending a day visiting a 4,000-acre sheep and cattle farm owned by one of Australia's well known regenerative farmers, Tim Wright, on his property Lana. You can go back and listen to the interview I did with Tim earlier this year. It was an amazing day and we learned so much. Our guides were the CEO of the Southern New England Land Care Group, Karen Zirkler, and also organic cattle farmer Glenn Morris who manages Fig Tree Organics Farms which runs two properties near Grafton and Inverell, in the Northern Tablelands of New South Wales.

Dr Ron Ehrlich: Not only did Tim, Karen and Glenn show us around but helped explain what it is we were looking at, like many of you I have driven through the country and looked at paddocks and saw some animals, cattle or sheep, and not given much thought to what I was really looking at. It's a bit like I think, going into an art gallery and walking through, making a mental note that you like this or you don't like that and then one day in an art gallery you just happen to eavesdrop on a guide explaining one painting. And you hear about its history, its artist, the time in which it was painted, how various aspects of the painting make a social-political comment or has symbolism and suddenly this painting you would previously just walk past and barely notice takes on a new significance. And you reflect and you wonder about all those other paintings you've walked past. Well, having the land and farms explained, having grazing plans, water cycles, soils, hummus, biodiversity and much, much more explained to you is like having a work of art explained. And when it's well done it is a work of art.

Dr Ron Ehrlich: Now, while we're on the day I had loads of questions, Tim Wright who's property, Lana, we visited explained lots of things and you can go back and listen to that episode, but I had lots of other questions and I wanted to know about land care so I spoke to Karen later on in this episode and I go on to speak also to Glenn. So I've got two conversations tied together here and he ran me through the history and ... of cattle in Australia and that chat follows Karen's. Look, I hope you enjoy this conversation, initially, I had with Karen Zirkler.

Dr Ron Ehrlich: Hi, Karen, great to have you on the show.

Karen Zirkler: Thank you very much for having me on the show, Ron.

Dr Ron Ehrlich: Karen, you know we had this wonderful trip up to Armidale to the New England area and you and Glenn Morris were showing me and Annie around and we learned so much and it struck me that you being in your position in land care; it was just an opportunity for me to get to our listeners something about the history of what land care is about, how long it's been going, what are some of the issues. So I wondered if you might share with our listeners some of that information?

Karen Zirkler: Sure. I'm not sure the breadth of your listeners, but I'll just assume-

Dr Ron Ehrlich: They're very well informed, but maybe not about land care.

Karen Zirkler: Yeah, sure. Well, land care is a concept, a movement, something that started in Australia. It started in Victoria, actually, in the ... I don't have the exact years in my head anymore because I've been involved for a long time, but in the early 1990s, even the late 80s. I think it very late 1980s. And it was an unlikely alliance between two sorts of political stances and also it was around the time of Bob Hawke and some programs that he was running.

Karen Zirkler: Anyway, it was viewed that it would be a fantastic sort of concept to ... for the government to engender and foster and promote, and so the decade of land care was born in the 1990s. And it became a movement amongst, initially farmers actually, and became more and more widespread and it came up into the Southern New England area in the early 90s and that's sort of where I've mostly been involved in land care over the years, since I came to work for Southern New England Land Care in 1998. Before that I was involved in land care in different parts of Australia, but came here and have been here ever since.

Karen Zirkler: It's become an even broader and more all-encompassing sort of a movement, it's very much community-driven and it's all about local people addressing local issues in their local environments. And over the years in Southern New England, it started by addressing ... local groups addressing issues like New England Dieback which was vast areas of native vegetation in the Southern New England around Armidale, from Armidale, Uralla, Guyra down towards Walcha, just during the 70s, were decimated by this phenomenon called New England Dieback. And landscapes were changed vastly forever.

Dr Ron Ehrlich: New England Dieback, tell us about it. I just hadn't heard of that.

Karen Zirkler: Okay, well it was I guess occurred in the 1970s in the New England area of New South Wales and basically millions and millions of trees just started dying right across the landscape and leaving these bare open landscapes and the immediate issue for most farmers, landholders, graziers was that suddenly their flocks of sheep were incredibly exposed to the elements and hundreds of lambs were dying of exposure. Sheep, grown sheep would die of exposure in our very cold winters and so this became a real problem because it hit the landholders hard in terms of animal welfare and profitability. When land care came along this was a way that communities and groups and local groups of local neighbours could get together and start addressing these issues.

Karen Zirkler: Science began to look at it, the university began to look at it and initially I think, to cut a very long story quite short, people were trying to pin this dieback phenomenon on a single cause and in the end it was shown that it's not a single cause because ecology is a very complex thing and it was a breakdown in the whole ecological process that was resulting in this devastation across the landscape. So the land care groups were a part of the solution, well, we're still living with the aftermath of that because we have very open landscapes and land care was seen as a way of mobilizing action on the ground to start planting trees. And in the early years, the only trees that people could get to survive were non-native species like different varieties of pine trees and so slowly we got something established back in the landscape as windbreaks and protection for livestock.

Karen Zirkler: But then gradually over time people realized that, well, it's not just the livestock that we need to start catering for, we need to start looking at restoring habitat for the native wildlife, our flora, fauna. So we've become quite sophisticated in the way that we look at restoring vegetation and landscapes. And then moving away from the sort of addressing directly the dieback issue and people started looking at, "Okay, well, soils; what's happening to our soils? And how are we managing our pastures?" And so land care became a mechanism and a tool and a methodology and a process, largely a process, to address all of these kinds of issues and so land care coordinators were conceived. And I think it was in 1994 that Southern New England Land Care, which had become a collection, a collective, of different local land care groups, I think initially four groups got together and said, "Well, you know we're all kind of addressing issues local to our districts, what are you guys doing? What are [inaudible 00:10:38] doing?"

Karen Zirkler: And so they formed this committee and it was called the Southern New England Land Care Coordinating Committee and then they incorporated that committee so that that incorporated body could start working together and they ended up hosting a coordinator, part-time coordinator. And that coordinator was then able to assist those groups in various ways, so for example, getting in a guest speaker to our [inaudible 00:11:14] from somewhere different.

Dr Ron Ehrlich: Yes, I was very privileged to be one of those. That was a lot of fun up there as an ... in that Armidale. I enjoyed that. I know when you were taking us around, and I said this to Glenn, and I just thought it was just analogous to going through an art gallery and having a guide explain the paintings to you because this was ... there's so much going on out there that we drive passed as city folk and have no idea what we're looking at. But I thought there was one interesting comment that happened during that day and somebody saying, "We're soil farmers. That's what we're doing, we're nurturing soils because from soils come pastures and plants and crops and animals and trees and dah-tee-dah-tee-dah." So that's a very big part of the story, isn't it?

Karen Zirkler: Oh absolutely. And I guess through the land care story we've gone deeper and deeper into the whole picture and the ecology of landscapes and what makes them function, and soils is a very big part of that. But it can't be, again, it's something that it can't be looked at in isolation because soils depend on living microorganisms that thrive and survive in soil and the health of those depends on the health of plants and the root systems that thrive in those soils and feed those microorganisms. And those plants depend on sunlight and rainfall and it's completely interconnected, it's the web of life.

Karen Zirkler: And, as farmers or graziers, we need to be at least very aware of all of that and nurture that as much as we possibly can and people are at different stages of their learning about all of those things. And it's important to nurture the people that manage the landscapes to bring them all along in all of the stages of their learning to help them along in achieving that end goal of healthy landscapes.

Dr Ron Ehrlich: This was, of course, the wonderful book that I got introduced to, the Charlie Massey's book, the Call Of The Reed Warbler, where he talked about those five systems that you've just kind of more or less outlined; the sun and the organisms and also

you've included the water and the diversity and the people part of it. And I guess when you look back on the dieback of the 70s and you say, "It's not just a single cause. It's a whole process of things." And I imagine those five things would be a good way of approaching it.

Dr Ron Ehrlich: But then I wonder whether the dieback in the 70s was the kind of the limit to which the landscape had reached as a result of poor management, would that be a fair comment or would that just be unkind?

Karen Zirkler: It's a fair comment. But I guess what you've got to realize is that people came to Australia, and this if you ... there's another fabulous book by Bruce Pascoe called *Dark Emu*, we came to Australia with very European ideas of how to manage landscapes and Australia is such a different continent to those European landscapes that those settlers came from. And we imposed upon the indigenous landscape management what we thought were the ways of going about things and so, yes, I guess it has been a different type of management that was very unsuited to this landscape. And so we've been trying to learn about how to better manage this landscape, which is very different to what was appropriate in the Northern Hemisphere on completely different soils, much younger geological soils that have higher mineral content, different mixes of minerals available to the plants there.

Karen Zirkler: So it's a, yes, look, it's a complex picture and I'd say we're still trying, we're still at the early stages of learning how Australia really works and I think we ... it would pay to, for us, to take a lot more notice of those indigenous methods of landscape management that were here for thousands of years before we arrived. And I was excited when I was reading Bruce Pascoe's book and I had an opportunity to hear him speak just recently, but I missed the opportunity so I was disappointed about that. But I think there's a lot to be learnt yet, we're still at the beginning of our journey and it's, yes, it is; it's inappropriate management for the landscape that we're in, am I guess what I'm trying to say.

Dr Ron Ehrlich: And I guess there's this, must be this, the tension between the industrial approach to farming and what the land will allow?

Karen Zirkler: Yes, but it depends what you mean by the industrial approach to farming. I think I know what you mean, but I think we need to be very clear when we're talking about these things because it's so easy for people to run off with a term like that and-

Dr Ron Ehrlich: If you look at the majority of farming practices in Australia, how would you characterize ... how would you define that? Well, let's define it, industrial farming; how do you ... what do you understand by that term?

Karen Zirkler: Okay, so yes, industrial farming being ... it's a lot of things, Ron, I really ... this is a hard question for me and we could sit here and talk about it all day because at the moment in my head there's this difference between corporate agriculture and, say, family farming that's a bit of a dichotomy. And then there's industrial versus what, what's the alternative to industrial? I mean we are mechanized, we are ... we do have tractors, we have industry and we have markets and we have corporations and we have ... I did hear Charles Massey speak recently and he talks about this mechanistic way of thinking versus a more regenerative, I think was the other term he used, way of [inaudible 00:19:07]. And there are

lots of terms around this now and I think we are moving into a new space, a different space in the way that we think about landscapes and farming. And it's a fascinating area.

Dr Ron Ehrlich: No, I mean we're not Luddites and we are part of the modern world and, as you say, we use machinery and there are markets and there are financial things, so I guess that's industrial to some extent. I thought that was interesting, corporate agriculture versus family farming. Would you, off the top of your head or even within your position at land care, what proportion of Australia agriculture is corporate and what proportion is family, if you had to make an educated guess? Or you probably know that maybe you know that statistic.

Karen Zirkler: Yeah, I don't know what the statistic is.

Dr Ron Ehrlich: Okay, let's take an educated guess, what do you think? Is it 50-50 or is it ...

Karen Zirkler: I'm a scientist trained by science so it depends on whether you're talking about what portion of land is managed by corporate agriculture versus family farming agriculture, well, I'd say the proportion of land that's managed by corporate agriculture in Australia is much, much larger than the portion of land that's managed by family farms. But I wouldn't hazard a guess. What I do know is that we are ... the trend is moving further and further away from family farms. Corporate agriculture is growing and family farms are declining and reasons for that are, again, complex and convoluted.

Karen Zirkler: But it's a lot about the viability of family farms, they're just becoming less and less viable and more and more difficult to keep them alive and keep them supporting families. I mean family farms used to support at least one family, if not more, plus several employees and their families. That is not the case anymore, a family farm is lucky to be able to support the family that lives on the farm and works the farm and in my experience in our region up here most family farms, one or other of the spouses is also, or both, are [inaudible 00:21:45] farm in paid employment elsewhere just to make the farm work. And that is a very, very sad story, extremely. That, in my mind, is the biggest struggle that agriculture has in our local region because family farmers care about ... they have passion about what they're doing, about their animals, about their land, their soil, their landscapes, and I'm not saying that corporates don't, but corporates are, in my experience, corporates pay less attention to that than they do to become bigger and more efficient and more ... having higher production and keeping the profitability in the equation.

Karen Zirkler: So it's a big question, Ron, and we could go [inaudible 00:22:40] all day but it's a real passion of mine, just recently, because I'm in the situation; I'm a land care coordinator working almost full-time off-farm, my husbands work at least half time off-farm and we've got a small family farm and it's not viable without us doing that off-farm.

Dr Ron Ehrlich: But in your position now, and given all your experience, you must've sat around and thought, "Gee, how can we turn this around? How can we make family farms ..." I mention it in my book that I think, hope this century will be the Century Of The Revered Farmer because, after all, they're the ones growing the food that we need to make us healthy

and they're the ones looking after the soils that we need to grow our foods in. So how do we turn that around? I mean if you had to have a wish or if you thought, "No if I was running this is how it would work." How would you do it?

Karen Zirkler: Gosh, it's complex. First of all, I'd go get a working group or a steering committee or something to help me, a brains trust because [inaudible 00:23:48] working land care, it's not my ideas that are going to solve the world, solve all the problems in the world. It's working together and I'm a real fan of the art of hosting and participatory leadership, so that's how I work with my land care groups. And so I wouldn't solve the problem on my own, that's the first thing.

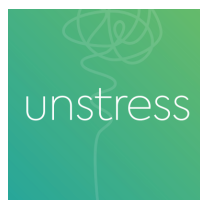
Dr Ron Ehrlich: Yeah, fair enough. No, that's okay.

Karen Zirkler: I'd involve a lot more women in the problem solving, that's one thing and I would ... Yeah, ask me the question again so it gives me a bit more time to think, Ron.

Dr Ron Ehrlich: Well, I just think you know like getting ... It's a bit of a passion of mine too, where I want to ... and it's one of the reasons why I have this subject as one of many on my podcast, and that is I think we need to connect the people in the city who are looking towards getting nutrient-dense foods and care about the environment and maybe connecting them directly with the family farmer who is producing the very product that we want and the consumer is valuing the product. I mean like milk, for example, is a classic example. I watch these \$1 litres of milk and just feel for the dairy farmer and think, "What? That's just crazy." I mean what goes into that product compared to a bottle of water, and yet it's cheaper than water and then Big Deal, Coles and Woolies put up the price by 10 cents, which I'm sure does make a difference, but it's hardly paying the farmer. I can only imagine what the farmer is getting if Coles and Woolies are selling it for a dollar.

Dr Ron Ehrlich: So there's something about the middle man, something about so much being lost along the way that the farmer has become disconnected from the consumer and all the people in the middle are the ones that are doing well out of it.

Karen Zirkler: Yeah. I saw a really interesting graph and it was, I think it was, put up, yes I'm pretty sure it was put up on a display when I saw Charles Massey speak and it was fascinating. The profitability of the farmers themselves has kind of since saying the 1930s when we started this Green Revolution with fertilizers and industrial agriculture if you like, the profitability of farmers themselves was just almost a straight line, level, parallel to the ground. Wiggled a bit and then it dipped right down underneath the actual zero lines of the graph. But then it was rural, corporate business, so the ... I forget the terminology he used for it, slipped out of my brain just at the moment, but all of those middlemen that you're referring to, the businesses that support farming in some way or take those goods and services to the next market; their profitability just sort of was skyrocketing. The gap between the two was huge by this ... since the 1930s they were following each other a little bit, parallels, and then it just skyrocketed. So the gap is quite huge and the whole \$1 milk thing makes me so mad.



Karen Zirkler: I do shop at Coles or Woolies but I do also use our Food Works locally and because we don't ... where we live there's not a hell of a lot of choice in regards to where you buy those sorts of products. But every time I will avoid the \$1 milk and I'll go for the \$£.

Dr Ron Ehrlich: Yeah, but it's a metaphor for what's going on in the family farm, isn't it?

Karen Zirkler: It is. And what we need is for our supporters and our friends and our families and our city cousins to be aware of these issues and support us by buying local and try to have fewer food miles attached to your food and, if you have a choice, pay a little bit extra for your milk because you're only ... By supporting the \$1 milk that profit that's being made by the Coles or the Woolies is leaving Australia. It's not staying even in Australia, let alone locally. I mean yeah, sure, it might pay a couple of checkout people who've got a job at Coles or Woolies, but the big profits, the big corporate profits for those massive organizations are leaving Australia.

Karen Zirkler: So everybody's got to do their little bit, but I think the more connected we can become with where our food comes from and the more connected we can become with the farmers who grow our food; the happier we'll be, all of us.

Dr Ron Ehrlich: No, well I think look, that's, I think, a great note for us to finish on because of this ... I just wanted to talk to you particularly after being ... you guiding us around and I learnt a little about land care and I wanted to share with our listener a little bit about what's going on out there in the land. So thanks so much for today, Karen, and thanks so much for taking us around and I appreciate all that time that both you and Glenn spent with us. It was just fantastic.

Karen Zirkler: Well, thank you for coming up and visiting. It's so exciting and it gives us a lot of heart to have people like yourself, and especially when you're able to then share your message with so many others, it gives us heart that there is hope in what we're doing and we are doing the right thing and we are getting that message out there. So thanks for visiting, we loved having you.

Dr Ron Ehrlich: Thanks, Karen.

Dr Ron Ehrlich: I had so many questions that day, Tim Wright had certainly talked about the economics of cattle versus sheep, water consumption is very different. Glenn started to explain a little about the variety of cattle breeds and how that has changed over the years since the first settlers and how the cattle industry has changed. So here is that conversation I had with Glenn Morris.

Dr Ron Ehrlich: Welcome back to the show, Glenn. Glenn, it never even occurred to me that there were so many different breeds and you had to think about it all.

Glenn Morris: It's got a lot of links with human nutrition when you think about it, because we obviously went from a very rich, fertile land in its natural sort of condition with

the breeds of cattle, and yeah that was sort of what I was getting at as we sort of when, over time, we just kept sort of getting more and more depleted, and we didn't only change the breeds of cattle. Years ago I sat in at a workshop on where Grafton Research Station was going because they were closing it down at the time. But we, as time went on and we were here longer, I guess, as Europeans, the grasses changed as well so the department kept introducing grasses that could handle a poorer soil.

Glenn Morris: Which would've fed into the nutrition of the animals and the people, you know?

Dr Ron Ehrlich: Mm-hmm (affirmative) but what did we-

Glenn Morris: Sort of interesting journey.

Dr Ron Ehrlich: ... what did we start? Like when first settlers came in the 1780s, that kind of late 18th century, I mean when did it kick-off and what breeds were we using?

Glenn Morris: Well, I think the main breed that I mentioned the other day, we started predominantly short horn, Horny Shorthorn Cattle, a British breed that probably came out with the early fleets that came out to Australia to settle the colony. So they were a shorthorn breed and, yeah, they sort of spread out as the herds built, they spread out all over the country and enjoyed the rich, fertile lands that had been cared for by the aboriginals for ...

Dr Ron Ehrlich: Thousands of years. And-

Glenn Morris: Tens of thousands of years, yeah.

Dr Ron Ehrlich: Yeah, well, tens of thousands, actually getting up to ... I've just heard a recent report saying 120,000 years.

Glenn Morris: Yeah, I know, I know.

Dr Ron Ehrlich: It's amazing, isn't it? I mean if we're still around in 120,000 years I'll be very impressed with that. But the shorthorn must've been, I mean coming from England, it must've ... I mean the English climate and the east coast of Australia climate, I mean I guess it was very rich, rich country at that point.

Glenn Morris: Yeah, look I think that sort of hints at what the conditions were like. I think in Australia, particularly now, we don't have any idea what those early conditions were like but the records say that the land was covered in a rich sort of herbage and deep fertile soils. They were well-mulched soils where bullock teams and horses could disappear in the bogs, so ... And I think the hydration of the landscape would've been a lot better, we would have had a lot more water laying around and cooler. A lot more vegetation keeping it cool and we know ourselves on a hot day if we can find a bit of water and the shady tree it's 20 degrees cooler, yeah.

Dr Ron Ehrlich: I remember the last time we spoke that you were talking about humus, the importance of humus in enriching, not only enriching the soil but making it more absorbent for water, to hold the water.

Glenn Morris: Yeah. We would've had a really rich, high humus soil that was so well hydrated it would've been just priming those wetlands and marshes and those wetter areas all the time. Even upon the hills would've been a lot more water lying around, which I've seen in my time, you've seen the springs and in an area that hasn't been degraded too much, the water just sort of pouring out of the landscape, where the soils a bit healthier. Yeah, the whole thing would've been a lot wetter and a lot cooler and a lot of early sort of records, the famous war story and CEW Bean, he talked romantically about the beautiful grasses and herbs and [inaudible 00:35:20] that were all through the Western Country, [Wilcanya 00:35:22], Kobarr, all those areas that we sort of now see as very barren landscapes with creating dust storms but they were quite rich landscapes initially and the damage was done pretty quick.

Glenn Morris: The same records are in Eve Balfour's *The Living Soil* about South Africa and how you couldn't farm the bottom of South Africa because the whole landscape was too wet. Yeah, so we've changed the landscape in lots of countries.

Dr Ron Ehrlich: I have this image of us clearing land and I have this kind of image of two tractors with a chain connected to them and just pulling up a whole raft of trees. So when people would go and say, "Oh, we're going to run cattle on this property but, gee, there are so many trees here." Is that what people would do? Would they clear land to run cattle?

Glenn Morris: Absolutely, and the running of cattle is responsible for a lot of the world's deforestation right now in Brazil and Australia and it's sad to say, Ron, that we're one of the global deforestation hotspots still right now with what's going on in Queensland and New South Wales has just relaxed their laws. So yeah, we're still doing it, devastatingly we're removing the vegetation that we need for the water cycle and keeping the landscape cool and all the biodiversity that goes with it. And it's a tragic state of affairs, particularly at this time of climate change because I think 11 of the top 50 methods for reversing global warming involve planting more trees not less.

Dr Ron Ehrlich: Yeah, and I mean when you and Karen Zirkler were taking us around, up through the New England area around Lana with Tim Wright, I was just struck; what a contrast between the two properties.

Glenn Morris: Absolutely. Yeah, the surrounding properties. If we're going to cope with these rising temperatures, as we know summer was just 3.5 degrees above average in New South Wales, I mean we're already seeing record temperatures, if we're going to cope with those sort of conditions we really need to start trying to cool the landscape down and provide the shade for the cattle, yeah.

Dr Ron Ehrlich: Yeah, yeah, and so if we ... What happened after the shorthorn? Because I remember you running me through the stuff, I didn't even realize there were that

many breeds, although of course there'd be even more than you mentioned. But what was after shorthorn? And yeah because our land changed.

Glenn Morris: Yeah, look I think it was ... Obviously Australia's a big country so there's going to be different soils and different conditions going on all over the place, but predominantly we went from the shorthorn across most of Australia and you see some beautiful old photos in some old pubs and that of the big shorthorn bullocks, weighing a ton and just massive animals. But we went from the shorthorn breed then the Herefords dominated for a period after the shorthorns and spread across Australia as well and these are two very good, soft British breeds with beautiful tasty fat. And they would've been getting their beautiful nutritious grasses coming from a healthy soil, and we were lucky enough, or the early settlers were lucky enough, to be enjoying that beautiful grass-fed meat, full of the Omega-3's and CLA, the conjugated linoleic acids, those things that we need for our nutrition but ... Yeah, so we went from Shorthorns to Herefords and I think that went for a while.

Glenn Morris: At the same time we had little Hinterland Dairies everywhere, beautiful little dairies tucked away in beautiful fertile valleys and enjoying that rich grass-fed milk as well. It was happy days for nutrition I think, in those times yeah.

Dr Ron Ehrlich: What sort of breeds do ... What are they? What sort of cattle are dairy cattle?

Glenn Morris: Well, the dairy cattle, that was another interesting transition in breeds of cattle, in genetics, because initially we would've had a lot of different breeds, the Jerseys, the Ayrshires, the Guernseys and then the ... with the focus, and I think the whole world fell into this trap of high production and forgot about quality, but with the focus on production the dairy breeds then switched mainly to Holstein Friesians, so high, very high producing cows but nowhere near the butterfat and cream of some of the other breeds. But once again the pastures over the years, like I see some very scrubby blocks on the coast that initially were dairies and they were producing cream off and you just go ... Like you can hardly run an old bullock on it now and you sort of think, "How did they do dairies there?"

Glenn Morris: But see; we changed the landscape pretty quickly I think. That's what the story is, yeah.

Dr Ron Ehrlich: And so after Herefords, where are we? Have we got a few more breeds to go before we get to where we are today?

Glenn Morris: Oh, absolutely, yeah. And a few more changes in cattle breeding and production generally, but yeah, after the Herefords I think we started to realize, I think the industry started to see the benefits that could come from some of the Bos Indicus breeds, the Brahmans in particular started to be infused and crossbred with cattle in Australia and even this day we still use a Hereford cross Brahman cow because their adaptability to country is just amazing. But yeah, so the Brahman breed came in and that gave tremendous productivity gains, particularly in the north, the Northern States like Queensland and the Northern Territory where they could sort of using the tropical grasses which are lower in energy. The

tropical grasses and tropical grasslands probably aren't a standard sort of nutritional environment for cattle without some sort of modification.

Glenn Morris: So the Brahman and the Brahman cross cattle and the Santa Gertrudus started to move in and utilize all those northern runs which let the cattle industry expand even more and, as I mentioned a minute ago where the cattle industry is still expanding and unfortunately, which I'm totally disagreeing with, island is still being cleared for more cattle. So yeah Brahmans and Santas sort of got going and that was fine for a while, but yeah.

Dr Ron Ehrlich: Does that come from, did you say, from India? The Brahman?

Glenn Morris: From Africa, yeah.

Dr Ron Ehrlich: Africa, Africa.

Glenn Morris: African breed, yeah.

Dr Ron Ehrlich: Right. Is that where we're at now?

Glenn Morris: There's still a lot of Brahman cross cattle in the north, there was also another breed of cattle that ... well, another whole genetic pool really of bloodlines came into Australia. I was sort of almost a part of the initiation in that with the Simmental breed.

Dr Ron Ehrlich: Simmental?

Glenn Morris: Simmental, yeah.

Dr Ron Ehrlich: Simmental.

Glenn Morris: So a European breed, a dual-purpose breed. It came over from Europe, they used it for dairy and beef but along with the Simmental came to the Charolais breed, so these are very well muscled animals so a lot of breeders started ... Once again we were pretty focused on the production and the European cross Brahman then sort of got going in the Northern States again. Yeah, and great big animals, huge carcasses and you get paid a lot of money for them. But just looking at the meat quality, I think those soft British breeds with their beautiful fat which for years, as we know, grass-fed fat and saturated fats were getting a bad rap and so people were actually favouring leaner type animals for a while and, yeah, I think it's a bit of a tragedy because as we know now those grass-fed fats are full of Omega-3 which we need for our brain and everything else.

Dr Ron Ehrlich: Yeah, and I mean are these very different animals to manage?

Glenn Morris: Yeah, they're a lot bigger animals, a lot stronger, you need a different set of yards. Yeah, like we still have straight Hereford cattle here and just a beautiful, docile type animal to have around. The bulls don't usually give us much trouble and so yeah, you're dealing with a lot bigger animal that ... Brahmans sort of like the outdoors, they don't like being in yards in close confinement. So yeah, the cattlemen up there; they need to know their

stuff and be on their guards. But yeah, they're big mobs of cattle and it's a whole different type of handling. But yeah.

Dr Ron Ehrlich: I know you're on the organic grass-fed, you're ... On your farm, it's a very specific product that you are growing and developing. That's right, isn't it, Glenn? That's what distinguishes-

Glenn Morris: Yeah, that's right, yeah.

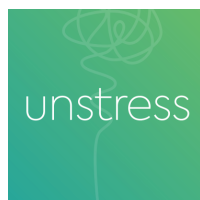
Dr Ron Ehrlich: ... where you're at. But when people bring up cattle, raise cattle and they're grass-fed for all of their lives and then they're sold to market, invariably they go into a feedlot, don't they? Or often?

Glenn Morris: Yeah, well that was another transition and it's a good sort of time to start talking about another change in breeds so we sort of had the Brahman infusion and I'll just sort of add something in there, before we move to the feedlot [inaudible 00:45:56] As the country, and there's a bit of a picture forming here, as the country and the fertility of the country was starting to where out a little bit, if you like, and we went from Shorthorns and Herefords to Brahman cattle and crossbreeding them, the country; we were running into more dry times and I've got a message on that as you know. Linking sort of better soils to better rainfall. But we also bought a lot of supplements, the scientists were starting to work out, the animal scientists and nutritionists, were starting to work out that if we use supplements like urea and molasses to supplement through dry times the cattle could keep going and a lot of that would've been going on this year in the drought. But what we did then pushed our country, we made it even less fertile and so we ... All of this time the message is that the soils were sort of getting depleted along the way and we've just kept pushing them with stock and supplements and different things.

Glenn Morris: But yeah, then we got into the era, I suppose it was around the late 80s, Ron, where because of the, I suppose it was because the soils were starting to get depleted and it was getting a lot harder to get the grass-fed finish on cattle; the feedlots started to emerge in Australia. Initially on a very small scale, a bit of an opportunity thing where a few people would paddock feed a few hundred or a few thousand cattle, but yeah, then they really took off and, as we know, the Japanese love marbled beef and the Angus breed is a very good breed for getting good marbling. And so the Angus breed has taken off since then and the focus on actually a lot of beef producers are now just growing the cattle up to a certain age and then the cattle are shipped off to a feedlot. It's mimicking what happens in America if you like, and then they're grain-finished and, yeah, that's sort of where we've gone to from the late 80s, early 90s, right up until today.

Glenn Morris: The Angus breed now is the dominant breed for its marbling. It's a British breed but it's been finished now, a lot of the time, in feedlots. You'll find very little grass finishing going on now which is-

Dr Ron Ehrlich: And Wagyu, I know I see that, where does that fit into the story? Because that's another thing.



Glenn Morris: Yeah, it's certainly growing at the moment as well and it's a high end, even better marbling breed than the Angus but they're taking off and bring a real premium. The only issue with the Wagyu is the focus has been on the grain finishing and, once again, we're not getting those beautiful Omega-3's that you get from grass-fed. Yeah, so we've got-

Dr Ron Ehrlich: Where did Wagyu come from?

Glenn Morris: Japanese breed.

Dr Ron Ehrlich: Japanese, right.

Glenn Morris: Yeah. Yeah so-

Dr Ron Ehrlich: Because I know, and I'm sure you do this too, you kind of go into a restaurant or a butchers shop and they go, "300-day grain-fed. 150-day grain-fed." And as the days of grain feeding go up so does the price and I look at it and I think, "God, there's no way. I'm not even going to touch that stuff." I mean yes, beautifully marbled, but marbled with what?

Glenn Morris: Yeah, exactly.

Dr Ron Ehrlich: Not only fat but the fat that's not good for us.

Glenn Morris: Fat that's not good for us, and it's sort of the thought of an animal spending 300 days in a feedlot should make anyone walk out of the shop.

Dr Ron Ehrlich: Oh my god.

Glenn Morris: I mean it's just an inhumane way to raise cattle and we're talking about fat that, as we say, the Omega-6, the Omega-3 ratio's just totally wrong, it's not right for us, it's not right for the animal. And we've sort of been convinced that this is the high-end beef, and a lot of that, Ron, was done on the consumer feedback. So consumers wanted a soft bit of meat that they didn't have to use their teeth and chew into, they wanted something super tender and juicy and the market signal was ... that went out to the beef industry and the beef industry delivered in a grain-fed product. But what we forgot the whole time, what we forgot to study and enforce if you like, we had to take some leadership there is beef and eating grass-fed meat or eating meat should be all about nutrition.

Dr Ron Ehrlich: Who would've thought?

Glenn Morris: Yeah, and we moved away from that.

Dr Ron Ehrlich: Who would've thought, Glenn?

Glenn Morris: I know, I know.

Dr Ron Ehrlich: But just going back to this transition from the animal being grass-fed to then spending ... what is it, is it typically about six weeks in the feedlot? What is a sort of a standard? Because I know when we were with Tim, for example, Tim Wright on Lana, he's saying, "Well, I sold my cattle to a buyer and then they may well go into a feedlot." I mean I know yours are very specifically ... you're on an organic, grass-fed so whatever you're selling comes as organic, grass-fed. But for most farmers, even if they're grass feeding their animals through the vast majority of their life, what is a typical feedlot time?

Glenn Morris: Yeah, Ron, it's about 100 days I think is the typical, 90-100 days I think to sort of finish off the animal in the feedlot. And, yeah, quite often they're given a lot of supplements and things that aren't that nice as well to help them grow in the feedlot. But, yeah, they're looking at about 100 days in the feedlot after they sort of leave the farm and go in and, as we mentioned, sometimes longer. One of the things that I dislike about the whole feedlot industry, and I'm not having a go at them but I'm just sort of pointing out something that's not doing our landscape any good and I think with water cycling and the climate getting quite severe we've got to look at these things, there's a lot, there's a hell of a lot of areas that used to be in beautiful rich soils, enriched pastures that were grazing a lot of animals, that was incredibly good for people has now been converted to chemical farming and cropping to feed the livestock in the feedlot. So we're just seeing toxins sprayed all over the landscape. Round-Up which is glyphosate, which has got some bad press lately because of the dangers with it.

Glenn Morris: A friend of mine is a great agronomist, he's probably one of Australia's best agronomists, he's said we are desertifying Australia through our practices and along with warming climate, we've just ... We're doing a lot of damage by having this model of putting cattle through a feedlot and ... Yeah, as I mentioned, this was consumer-driven because people wanted ... they wanted a glowing white fat which is not as healthy as [inaudible 00:53:50] [crosstalk 00:53:53] and they wanted tender beef.

Dr Ron Ehrlich: I remember also talking to chefs, because I love my cooking and can't help myself but talk to chefs, and chefs love the feedlot because it's such a predictable product. They know that whenever they buy a steak it will have; marbling and it will be this and it will be that, so it's independent of any climatic or seasonal change. So it's another aspect to the consumer-driven. What kind of weight can an animal put on in a 90-100 day period? Because this is about, if you're being paid by the kilo, the bigger, the heavier the animal, irrespective of whether it's fat or protein, the more you're going to get. What kind of weight can be put on in an animal in those 90 days?

Glenn Morris: Yeah, look, Ron, I'm not sure. But they'd be sort of punching sort of at least two kilos a day or something in a feedlot, possibly more.

Dr Ron Ehrlich: God.

Glenn Morris: They'd be stacking it on and I think the standard sort of feeder steers about 450 kilos and they're probably coming out of that period over 600 kilos, easy. Looking at it from an economic sense that's one reason it's being done and the reliability of supply is immense and we turn a natural product that's at the mercy of the grass and the seasons and

the rain into a predictable product. You can see why chefs and farmers ... It's industrialized a natural product if you like. And, yeah, unfortunately, there's a lot of consequences that we're starting to see from that sort of model. Not least of which is human nutrition and health, and also what we're doing to the landscape I think by industrializing the farming processes around it.

Dr Ron Ehrlich: So, Glenn, your position in defence of beef is pretty clear, isn't it? What would be your message in defense of beef well run?

Glenn Morris: Yeah, oh look, I did some of the early carbon sequestration work to deal with climate change. It's one of, if not the greatest, solutions for dealing with climate change and reversing global warming, is to grow healthy pastures and along with some trees to sequester the carbon out of the atmosphere back into the soil. It's also the solution for restoring the local water cycling, is to get the carbon and the humus back in the soil, hold the water, let the plants transpire it back up. So beef, run well, with healthy grazing management and, yeah, good timing and all the rest of it is a tremendous solution for climate and human health, as we know, that people should be eating a lot more healthy fat and meat.

Dr Ron Ehrlich: Yeah, well, I mean I think the message overwhelmingly is what's ... Well, actually what came out of our visit up to Armidale, which I loved, it was just so amazing to have you guys be our drives, because we drive through the country all the time, have done all my life and it's like walking through an art gallery which, you look at paintings and you go, "Oh yeah, I like that, I don't like that. I like that and I don't like that." And someone stops you and goes, "Hang on, have a look at this painting. This is the history of it, this is the meaning of it, this is the significance of it, this is what it's trying to convey." It was a bit like that, but I just came away from it thinking, "Actually, it's about farming soil, isn't it? It's about nurturing the soil. Because if you can get that right then the plants will grow, the water will stay, the animals will be healthier, the planet will be healthier, we'll eat healthier food." I mean it's about as simple as that almost.

Glenn Morris: It's a beautiful comparison, Ron, and I think I sometimes describe what we're doing as a bit of an art form. When it's done well, as you saw at Tim Wright's, when it's done well, when the managers right on his game and he's managing the landscape, the pastures, the water and the vegetation too, the whole things working together and tied together through the soil biology and the whole works and we're getting that beautiful nutrition. Up from the humus with all the amino acids, which are essential for every cell in our body, they're coming up through from the humus into the roots and the plant and the animal and then into our bodies. It's an art form to get it right and to restore the landscape.

Glenn Morris: And it's exactly where we need to go, these precarious times that we're in. But I love that comparison because I think farmers are the artists of a healthy landscape and the future and we need to, yeah, we need to encourage that sort of approach.

Dr Ron Ehrlich: Glenn, beautiful, mate. Thank you.

Glenn Morris: Thanks, Ron. Bye.

Dr Ron Ehrlich: So much to learn. When we were with Tim we got a chance to see his property which had so many trees and shrubs and grasses, albeit in the middle of the worst drought in history. Yeah, the grasses were brown, but there was shade, there was vegetation, the soil was being held together and apart from stopping the soil erosion that means that when it rains it wouldn't wash away the soil, along the water. That's the solar cycle, the water cycle and biodiversity issues covered. We drove through his neighbour's property, literally over the fence, and practically no trees or shrubs. Vast open paddocks with a few sheep scattered, looking for shade and bare soils. When the rain hits that property the soil will be washed away along with a lot of the water, it'll take quite a bit of time for the water to be absorbed into the soil and kept on that property.

Dr Ron Ehrlich: This is why I like to learn about the land and the soils and all this farming, particularly regenerative farming. The lessons for us as individuals are there. For example, when it comes to stress, not all stress is bad. Short bursts of fight or flight or activating the sympathetic nervous system are okay. But for most of the time, we should be in the parasympathetic, or the rest and digest mode, calmer, thinking more clearly, feeling good. Now, Tim said something to me which resonated with me. His property, as I've mentioned, is 4,000 acres divided up into lots of smaller paddocks and he rotates the sheep and cattle from one paddock to another and he said at any one time; 95% of his property is being rested. I guess that's like being in the rest and digest, or the parasympathetic mode.

Dr Ron Ehrlich: You see, the herds are kept in a paddock, they eat a wide range of the vegetation that's there, they urinate, they defecate, returning organic matter and microbes into the soil, they trample it and then they move to another paddock and they won't come back to that paddock, that original paddock, for 60 or 90 days, depending on the season and the rainfall. So the paddock in use is under stress, but 05% of Tim's place is rested. He finds that is the best way of managing his land to protect and nurture the soil and the property in a sustainable way. I thought it was a great metaphor for our lives, parasympathetic mode, rest and digest 95% of the time, sympathetic mode, 5% of the time.

Dr Ron Ehrlich: Look, I know we live in the real world and we can't really ... we can't rest and digest for 90% of the time. But by building resilience it means that at the very least we are only in the stressed fight or flight mode for no more than 5% of the time. Now, as regular listeners will know; resilience comes from minimizing the five stresses in life and building physical, mental and emotional resilience by focusing on those five pillars of health. Sleep, breathe, nourish, move and think. That's what this podcast is all about.

Dr Ron Ehrlich: So, until next time, this is Dr Ron Ehrlich. Be well.

Dr Ron Ehrlich: This podcast provides general information and discussion about medicine, health and related subjects. The content is not intended, and should not be construed as medical advice or as a substitute for care by a qualified medical practitioner. If you, or any other person, has a medical concern he or she should consult with an appropriately qualified medical practitioner. Guests who speak in this podcast express their own opinions, experiences and conclusions.

