Speaking with People in our Profession

An interview with Allan Savory

Allan Savory was born in Zimbabwe and educated in South Africa (University of Natal, BSc Biology and Botany). He pursued an early career as a research biologist and game ranger in the British Colonial Service of what was then Northern Rhodesia (today Zambia), and later as a farmer and game rancher in Zimbabwe. In the 1960s he came to a personal realization about what was causing the degradation and desertification of the world's grassland ecosystems and, as a resource management consultant, worked with numerous managers, eventually on four continents, to develop sustainable solutions. He served as a Member of Parliament in the latter days of Zimbabwe's civil war and a leader of the opposition to the ruling party headed by Ian Smith. Exiled in 1979 as a result of his opposition, he immigrated to the United States where he cofounded the Center for Holistic Management with his wife, Jody Butterfield, and in 2009, the Savory Institute. In 1992 they founded the Africa Centre for Holistic Management near Victoria Falls, Zimbabwe, the purpose of which is to enhance food and water security and human livelihoods through training that utilizes livestock to restore degraded watersheds and croplands to health. Their book, *Holistic Management: A New Framework for Decision-Making* (Island Press, 1999), describes Savory's effort to find workable solutions ordinary people could implement to overcome many of the problems besetting communities and businesses today. In 2003, Allan Savory received Australia's International Banksia Award "for the person or organization doing the most for the environment on a global scale," joining previous recipients Rachel Carson and David Attenborough, among others.

Livestock Can Be the Solution

Question: I understand in recent lectures and talks you have made the statement that the very future of mankind hangs on a slender thread–learning to manage livestock to reverse biodiversity loss, desertification, and climate change over most of the earth's land surface. When most people feel livestock are a major player in climate change and land degradation through methane emissions and overgrazing, how is it your view is so different?

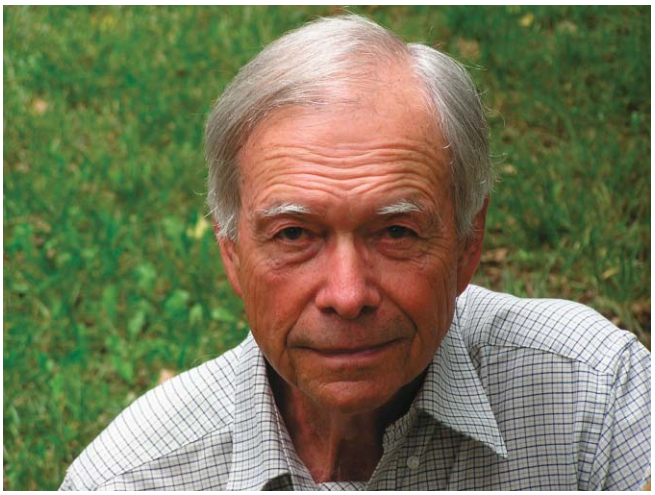
Answer: I am essentially a wildlifer who detests livestock and set out to prove that they were causing such extensive damage in my home country that we had no option but to remove them and return to managing our vast grasslands and savannas (most of the earth's land area) under wildlife. The massive deterioration of these vast areas, both through destruction of soils and annual biomass burning in an attempt to manage grasslands, is contributing enormously to desertification/climate change and with it poverty and violence—far more damaging than the published literature indicates. After more than 50 years of research, management, trial, and error, I have come to the firm conclusion I was wrong and only livestock can now reverse desertification and realistically address this enormous component of climate change. Tragically, the range profession is based on deeply held myths more than hard science, in my view, and we face an enormous problem of paradigm paralysis. Getting beyond the myths of my own education and training, heeding hard science and gaining practical management experience, finally convinced me that I needed to change because I loved the land, wildlife, rural communities, and humankind more than I hated livestock. Today I tolerate livestock because there is no other tool available to us to scientifically manage these vast areas.

Yet, it is said that livestock are contributing greatly to climate change. Would you disagree?

No, I would agree and I believe the data on the extent of livestock's contribution to climate change is woefully inadequate and conservative. Livestock, as managed since domestication, and as managed today in factory environments and on the land, is contributing far more to climate change than the published literature indicates. However, despite this, livestock remain the only tool with which to fully address climate change: sequestering the legacy load of carbon, reversing desertification and the loss of biodiversity so that carbon can continue to be sequestered in grassland soils in increasing amounts. Aldo Leopold made the statement that we might have to use the very tools that destroyed the environment to restore it. He was more prophetic than he realized.

Why do you believe that livestock are the only legitimate tool?

It is simple in the final analysis. A life cycle exists—birth, growth, death, and decay—that is essential to the



Allan Savory

maintenance of all environments, including grasslands and rangelands. As scientists, we have failed to pay attention to a critical stage in this cycle—decay—which is a living process. Plant material that dies and does not break down through rapid biological decay is broken down gradually by chemical and physical processes—oxidation and weathering—and this can take a very long time. Some experimental plots I have studied have individual perennial grass plants still breaking down over 50 years after dying.

For grasslands to maintain health and to sequester carbon (and also water), rapid biological decay is essential because every year millions of tons of plant material dies. If those grasslands exist in environments of perennial humidity this is not a problem and decay is rapid. If those grasslands exist in environments of seasonal humidity and where plants tend to die off in a compressed portion of the year, this is a big problem. In the absence of an abundance of large herbivores that maintain a moist environment in their gut and a synergistic relationship with microorganisms, the annual breakdown switches from rapid biological decay to chemical/physical breakdown, which is slow and leads to the death of most perennial bunchgrasses. To avoid this, humans have over the centuries used fire—rapid oxidation—to keep grasslands alive and healthy. Prior to humans, when large herds of herbivores were kept bunched and moving due to the presence of pack-hunting predators, overgrazing was minimized, due to the movement, and therefore more forage was produced. And, due to the bunching, old, coarse plants unlikely to pass through the gut of the animal were trampled down, providing soil-covering litter.

Isn't one of the problems, though, that your beliefs, your perceptions of "science-based" principles, are not explicitly supported in the peer-reviewed scientific literature?

While there was good reason for peer review to maintain quality it ignored the fact that the finest candle makers could not have either conceived of or developed electric lights. And the finest horse-cart makers could not have done the same with the internal combustion engine and automobiles. Range "science" is based on certain deep beliefs unsupported by any science I know of: that ranges can be overgrazed, that overgrazing is a result of overstocking, that ranges need fire to sustain grasslands, that rest restores grasslands. Looking at the evidence from a "different point of view" I learned that only plants can be grazed or overgrazed, not ranges; that overgrazing of plants is a function of time and not numbers; that rapid oxidation by fire to remove gradually oxidizing plant material exposes soil and cannot replace rapid biological decay. And I learned from rereading the literature, from observing wildlife, livestock, predator, plant, and soil interactions with a new eye that the seasonally humid rangelands thrive on periodic disturbance in the form of trampling, dunging, urinating, and grazing. I believe thousands of range scientists today would agree with me but the social research shows us it will take perhaps another 50 to 100 years for institutional change in the Society for Range Management, universities, government, and international agencies and environmental organizations.

You've written about the need to motivate people to unite around issues of critical importance, such as ending needless violence. What are your keys to motivate people to act in a constructive fashion?

I wish I knew what, short of staring tragedy in the face, would motivate people to try to save themselves and our world as we know it. So many people I have helped over many years have saved their families through reversing the land degradation on their ranches and have thanked me profusely. When asked what brought them to me, despite all the condemnation of what I have been saying for years, most admit that they were at rock bottom and facing financial ruin and I was their last resort. It would, of course, be far better if they were able to learn about and begin to practice holistic management before they were close to bankruptcy, or in the case of pastoralists, close to starvation and killing one another. It is entirely like exercise and eating less. We know that most people wanting to live longer, healthier lives have only to eat less and exercise more. There is a multibillion-dollar industry promoting this but how many people do it? Many who do only do so after facing a near-death experience.

At the center of your perspectives on the causes of poverty, disease, genocide, and war is the issue of land, and how land is treated and managed. Are we making progress in connecting these issues to land health?

Yes we are. I often use the Nobel Prizes to illustrate this progress. When Alfred Nobel established his prize

categories he was undoubtedly advised by some of our best thinkers on what to include: physics, chemistry, medicine, literature, and, later, peace. There was no prize for agriculture or environment, yet without a healthy and productive agriculture and environment, there can be no government, no churches, armies, universities, or any of the trappings of civilization. In the last few years, however, people have been awarded a Nobel Prize for connecting poverty and violence to land health and it had to be done through the Peace Prize. Nonetheless, this is significant progress.

When people realize that we cannot end the violence associated with desertification through planting trees we will have achieved another milestone. Whether or not we will reach this point fast enough remains in doubt, because livestock are key to restoring deteriorating land and they are under enormous attack due to the methane they produce as a byproduct of rumination.

In the universal decision-making framework we all use, we only recognize certain "tools" with which to manage our environment at large: technology in all its many forms, fire, and resting land. Train in any profession in any university and unknowingly you will only be trained to use one or other of these three tools to address desertification/climate change. This is impossible. Why? Simply because none of these tools can maintain rapid biological decay annually over the world's vast grasslands, savannas, and man-made deserts. Grazing and animal impacts, such as trampling, dunging, urinating, digging, and rubbing, however, can and should be included in the land management tool bag.

How do you see the issue of the global spread of invasive species, and is this one of the key issues that needs to be addressed in terms of land and its management?

I believe this is a trivial issue, yet we spend vast amounts of money year after year eradicating these species, which I liken to rearranging the deck chairs on the Titanic. In the United States alone, range scientists support the expenditure of well over $300 million per year, with no success on any real scale. Such spending is futile because these invasions are not a problem. They are merely symptoms of biodiversity loss/desertification and when that is reversed the "problem" disappears, usually at no cost. Let me give an example. On a ranch I am involved in managing as a learning site in Zimbabwe, on which everyone can benefit from all we learn, warts and all, we have now increased livestock 400% and have so much vegetation growing that we simply cannot keep pace with it even in dry years. And we have sequestered so much water that we have open pools of water, complete with water lilies and fish, a mile higher in the drainage than we have historically known water. And of course because the fates of water and carbon are tied to soil organic matter we will have sequestered an amazing amount of carbon, although not quantified. A few patches of a so-called noxious bush have increased dramatically in density and we are just watching and learning. So far all the bush has done is produce an amazing explosion in some wildlife species using it as cover with no loss of money, water, or carbon.

If the US government and various states simply diverted current budgeted funds from treating symptoms like noxious plants to adult education and training for universities, extension services, and ranchers it would make a very significant dent in the desertification of the United States and begin to solve the noxious plant "problem."

Other than your livestock epiphany, in working on land management over the last 4+ decades, is there a particular perspective of yours that has changed over time? In other words, is there something else you think you now see differently than you saw or thought years ago?

Yes. With regard to the land, I keep learning all the time and will do so the rest of my life. My greatest learnings other than that have been associated with what is so well described by Thomas Kuhn in *The Structure of Scientific Revolutions*. What is it that makes us, including myself, unable to see the obvious when it differs from our prevailing paradigm? What is it that causes us scientists to react with so much anger when exposed to a new paradigm? What is it that results in individual scientists being able to change but unable to influence their organizations in less than about 100 to 200 years? Andre Voisin established that overgrazing has nothing to do with numbers of animals but is entirely a function of time—the length of time the plant is exposed to an animal and then reexposed. If an animal remains in the area too long or returns too soon, the plant will be overgrazed. Good sound work, published in five major languages 50 years ago. Why could I understand that and use that knowledge in management immediately but to the best of my knowledge it is not accepted by any university I know of yet? Just as it took the Royal Navy 200 years to accept that lemon juice would end scurvy while thousands of sailors died, so it is apparently going to take range science institutions an equal time to accept new concepts developed and proven in management while millions of people continue to die from the symptoms associated with desertification and biodiversity loss.

So, where do we go from here?

Anthropogenic climate change is not a product of fossil fuel emissions alone, but also of biodiversity loss and consequent desertification. If we were able to eliminate the contribution made by fossil fuel emissions tomorrow, we could not effectively address climate change because two of the legs of this single stool—biodiversity loss and desertification—were occurring as a result of human environmental management thousands of years before fossil fuels were discovered. So in answer to "where do we go," I would urge that we adopt a two-pronged strategy to address climate

change—and place this effort on a "war footing," so to speak. First, a massive high-tech initiative to discover/develop benign forms of energy to support cities and transport. Second, adopt holistic management as a low-tech approach for reversing desertification, storing water, and sequestering carbon permanently in soils—on rangelands/grasslands, forests, and croplands, mainly, and in this order.

We have all of the money required to do this but we do not enjoy the luxury of time.

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