



Conversation as an Education Medium for the Age of Distraction - the ‘Art of Range’ Podcast

By Tipton D. Hudson

On the Ground

- The Art of Range is an educational podcast designed for rangeland practitioners, including ranchers, rangeland professionals, and researchers. Rangeland management is both art and science; the practice of any art depends on mastery of science, a body of knowledge. Rangeland science, as a truly integrative discipline that encompasses soils, plants, animals, people, and economics, invites lifelong learning and cross-cultural learning.
- True education is a science of relations; this requires communicating with depth and breadth. The structure of modern life in the developed world promotes thin communication, continuous partial attention, and personal and ideological isolation even as moderns are hyper-connected through digital communication devices. A conversational podcast permits deeper exploration of important topics and promotes synthesis and application to one’s own physical and cultural context.
- The Art of Range podcast in 2019 explored a variety of specific topics, such as rangeland management fundamentals, ecosystem monitoring, targeted grazing, managing rangelands for resiliency to climate uncertainty and risk, and understanding and valuing ecosystem goods and services.

Keywords: Education, Podcast, Grazing, Sociology, Psychology, Technology, Outreach
Rangelands 42(1):9–16
 doi 10.1016/j.rala.2020.01.005
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Manley Hopkins’s famous poem¹ “Pied Beauty” speaks of this love of land and people of the land:

Glory be to God for dappled things,
 For skies of couple-color as a brindled cow;
 For rose-moles all in stipple upon trout that swim,
 Fresh fire-coal chestnut-falls, finches’ wings,
 Landscape plotted and pieced, fold, fallow, and plough,
 And all trades, their gear and tackle and trim.

While rangeland ecologists may prefer land not “plotted and pieced”, they delight in the whole of nature. Not just the fish or the cow, but all real living and non-living things in relationship to one another that make up whole ecosystems. Range professionals and practitioners seek to maintain natural ecosystem processes in settings where human dependency on natural resources is part of the landscape. They see this connection—the one between humans and whole landscapes—as unique within agriculture, valuable to society, and worthy of careful scientific inquiry. Inquiry happens most effectively in a context of rich human-to-human interaction. The Art of Range podcast exists to model and provoke this human-to-human interaction, to inspire a land ethic, to promote education and conservation through conversation.

The Art of Range is a first-of-its-kind podcast produced by Washington State University in cooperation with the Society for Range Management and the Rangelands Partnership and is funded by the Western Extension Risk Management Education Center (Fig. 1). The title “Art of Range” plays on the idiom that range management is both art and science. A science is classically understood as a body of knowledge to be acquired. There is much we know about the physical and biological world and the numerous ecological interactions among organisms. An art, classically understood, is the practice, the application of a body of knowledge. Rangeland management is certainly an art as well—those whose livelihoods depend on making sound decisions with land and livestock over a lifetime require skills only developed through continual learning.

Introduction

Range folk are a colorful social group. They represent the entire spectrum of political persuasion, socioeconomic classes, geographic identity, and demographic characteristics, yet this passionate group of people is united by love of land. Gerard

Sustainable Ranching Problems Require Social Solutions

Rangeland-based animal husbandry is a method of food and fiber production that meets human needs while



Figure 1. The Art of Range podcast logo.

maintaining naturally-occurring, biodiverse, heterogeneous plant communities and providing less tangible ecosystem goods and services. This is a good human endeavor if we can do it well. The Art of Range podcast has been designed to support this good endeavor and to help answer the crucial question of how to do it well.

Ranchers, a subset of range practitioners and managers, are among the few Westerners in developed nations economically dependent on healthy rangeland landscapes. Jim Corbett, a Southwest environmentalist-turned-advocate of sustainable rangeland-based livestock production, observed that “ranching is now the only livelihood that is based on human adaptation to wild biotic communities”.² Not all persons involved in rangeland management are involved in ranching, not all ranchers rely exclusively on rangeland, and not all rangelands are grazed by livestock. Nevertheless, the rare interdependence of economics and natural resource use implicit in successful rangeland-based livestock ranching commands public attention. Ranching is a more appropriate term for livestock production in the Western U.S. than beef production because the word’s etymology includes the rich Spanish and Mexican tradition³ of extensive livestock raising on whole landscapes, rather than “land plotted and pieced”, that birthed American ranching. People with diverse philosophical commitments can rally around food and fiber production that relies on naturally occurring, self-perpetuating heterogeneous, resilient, and healthy landscapes.

There is an encouraging Radical Center that is finding shared values around this shared public good.^{4,5} Rangeland ranchers rely on grazing locally adapted ecosystems and taking a minimalist approach to agricultural inputs intended to modify and homogenize plant communities. This style of agriculture may be even more critical to human flourishing if—some would say when—we run out of the cheap petroleum,⁶ which has served as an ecological subsidy to modern agriculture since the 1940s. One cannot plant corn on a piece of land without removing the ecosystem that was there first. Interestingly, crop farming didn’t have a bad name when

corn or bean fields were tucked into arable folds of land and were surrounded by natural plant communities. It is only in the modern era, when intensive agriculture spread its footprint into every square foot of an arable region, that crop farming began to lose its pastoral position in society.

Natural resource problems are social, often both in the understanding and the solution. The rangeland practitioner community mimics natural diversity, each member playing a role in a large and complex social ecosystem with definable edges which set it apart from, say, the forestry community. This distinct social network is important to sustainable ranching. According to Nathan Sayre, “the threats to ranching today are not fundamentally ecological ones...the forces arrayed against it are economic and political in nature”.⁷ Social networks enable us to navigate social problems, and our biggest problems require serious social skills to solve.

A statewide California survey⁸ conducted in 2011 revealed that from ranchers’ perspectives environmental regulations, government policies, and use of land were the biggest threats to the future of ranching. In a 2017 Washington State University survey of beef conference participants, half said they were optimistic about the future of their operation and half were uncertain of their ability to manage through the economic and social risks that trouble their waking hours (unpublished results). Millions of acres of North American rangeland, public and private, wear scars that bear evidence of our learning curve over the last 200 years, a learning curve shaped by political pressures toward economic benefits, as Sayre masterfully chronicles in his 2017 book⁹ “Politics of Scale: A History of Rangeland Science”.

Education that addresses the breadth of social, ecological, and economic risk topics specific to rangeland-based livestock production is needed. But education, as it is defined by default through current practice in the United States, may not be quite the right concept. According to Dr. Fred Provenza, “The process of creating in science and practice is enabled through dialog—the free flow of ideas among peoples of diverse backgrounds”.¹⁰ Education is the science of relationships. Complex ecological and social relationships require complex thinking to work through and work with. The Art of Range offers some of that dialog and relationship building within and between minds. Deep, synthetic thinking is in great demand¹¹ now even as it is in shorter supply.

Information is not Wisdom

Education is often proposed as the solution to humanity’s problems writ large;¹² but education is usually unhelpfully conceived of as mere information delivery.^{12,13} What we need is deep thinking and analysis, synthesis of knowledge and practice, true mental labor. Conversational podcasts in general, and the Art of Range in particular, can lead listeners toward synthesis and decision. We aim to improve the listeners’ ability to do mental labor.

The developed world is awash in information about sustainable land management. We, in internet-enabled

locations, have unprecedented access to more information than one person could ever digest in a lifetime, even on a narrowly defined topic. The presence of information, available to be retrieved by anyone seeking it, does not accomplish anything on its own. The presence of a library down the street does not make a child growing up on the same street a genius. And children are decreasingly able to meaningfully consume what's in a library or other information sources.¹⁴⁻¹⁸ Human development theorists use the term "external storage hypothesis"¹³ to refer to the popular idea that having the ability to review information, that having instant access to everything, is effective for actual learning. The overwhelming evidence shows that one must consume relevant information, chew on it, digest it, synthesize it, break it down and create something original and more complex with it,¹³ before it does any good in the mind and can be turned to action in the real world. This requires something more than information transfer. It requires mental labor.

Mental labor is especially critical in natural resources management because of ecological complexity and the social dimensions of solutions. Nicholas Carr explores our diminishing capacity for important mental labor in his recent book "The Glass Cage".¹⁹ Carr warns:

"If we're not careful, the automation of mental labor, by changing the nature and focus of intellectual endeavor, may end up eroding one of the foundations of culture itself: our desire to understand the world. Predictive algorithms may be supernaturally skilled at discovering correlations, but they're indifferent to the underlying causes of traits and phenomena. Yet it's the deciphering of causation—the meticulous untangling of how and why things work the way they do—that extends the reach of human understanding and ultimately gives meaning to our search for knowledge. If we come to see automated calculations of probability as sufficient for our professional and social purposes, we risk losing or at least weakening our desire and motivation to seek explanations, to venture down the circuitous paths that lead toward wisdom and wonder."

Conversation Strengthens the Brain

Life in a digital world re-programs our plastic brains to be less able to chew and swallow whole strings of thought. Conversation strengthens our single-tasking and attention muscles, quite literally thickening useful neural circuits and building our capacity for mental labor. The idea that our information technologies shape us goes back at least to Plato, who argued with Aristotle over the dangers of shifting from an oral to a written culture—how this would affect human thought and life. Their chief fear, later realized, was the loss of memory. The shift from oral to written culture had, arguably, acceptable consequences; people in literate nations gained a "literary mind" characterized by depth of thought and the ability to share abstract ideas widely.²⁰ The shift to digital communication and entertainment, now advanced, has had less admirable, even damaging, consequences everywhere, including the academy.²¹ The formal dangers of all-digital communication include distraction, atomization of knowledge

(loss of relationship to other knowledge), trivialization of communication, decreased ability to filter knowledge and recognize authority, thin communication, disembodied relationships, and an audience-oriented sense of self which damages realism.^{22,23}

Neil Postman, a communications professor at New York University, argued in his 1985 book "Amusing Ourselves to Death"²⁰ that while a "technology" may be merely a machine, a medium is the social and intellectual environment a machine creates. Postman's predictions have proved prescient. An early-2000s study on the effects of internet use on young people who have spent their entire lives on digital devices found that digital immersion affects the way students absorb information.¹⁰ Tapscott²⁴ claimed "(children) don't necessarily read a page from left to right and from top to bottom. They might instead skip around, scanning for pertinent information of interest".²⁴ Similar studies of researchers, readers assumed to be stereotypically studious and thorough, found erratic, truncated, nonlinear reading behavior.²⁵ Linda Stone, a former executive for both Microsoft and Apple, describes the pattern of thought characteristic in a person formed in our digital age²⁶ as "continuous partial attention", "post-multitasking behavior". Friedrich Nietzsche switched from writing longhand to writing with a primitive typewriter in response to failing eyesight as an adult. He wrote about how this changed his writing style, something already observed by friends who were also writers: "Our writing equipment takes part in the forming of our thoughts".²⁷ Today, many adults no longer read, much less write.

Conversation Counters Pathological Distraction and Apathy

The Art of Range podcast relies on a recorded conversation as the primary educational tool and delivery mechanism. The podcast format allows listeners to attend to a live conversation, allowing the exploration of ideas and granting mind space to work ideas over in their own minds through the increasingly rare act of single-tasking. Conversation, like sustainable agriculture, is an art form that is critical to human flourishing.²⁸ Live conversation shapes the brain.

The plasticity of the human brain is well-known. James Olds, a neuroscientist at George Mason University, says that "the brain has the ability to reprogram itself on the fly, altering the way it functions".²⁹ The principle is no longer theoretical—this is now known as Hebb's Rule.^{30,31} Cells that fire together wire together. Taking all our communication (and entertainment) digitally changes our thinking and speaking due to physical changes in our brains. Tragically, it may produce more sinister long-term consequences than scattered thinking.

Sherry Turkle, a psychologist and social researcher at the Massachusetts Institute of Technology who has studied the relationships of humans to machines for four decades, reports a loss of empathy resulting from immersion in the digital world.^{28,32-34} Plasticity can end in pathology.³⁵ Thomas

Friedman has called our time “the Age of Interruption”.³⁶ Interruption technologies disrupt coherent thought. And technology that is “always on, always on you” continually disrupts and prevents us from engaging with real people as real people.^{23,33} We lose the ability to carry on conversation, which is significantly deleterious. But worse, children formed in a digital world quickly learn to see other humans as a means to their own ends, not equals with equally valid emotions.³⁷ They are victims of instrumentalism, trained in objectification.²² Those persons with brains molded by a lifetime of digital exposure actively avoid face-to-face conversation.

Washington State University’s (WSU) motto has been for some time “World Class. Face to Face.”³⁸ There is perhaps more prophetic and aspirational truth in this phrase than marketers and university president V. Lane Rawlins knew. Face-to-face communication has been proven the most effective means of human interaction.³⁷ And in natural resources, a field rife with social conflict, effective and empathic communication is increasingly needed. President Rawlins’ reflections³⁸ on the WSU motto, written a few years after the 2001 terrorist attacks are quite relevant to my articulation of the reasoning behind a podcast on rangeland management:

“it seems to me that our public discussion of different religions, philosophies, races, and backgrounds has reached a new level of intensity. In this discussion, being politically correct too often means that opinions and reasonable debate are stifled by labels. At both the national and local level, this tension is evident in discussions of issues as diverse as immigration, foreign policy, and trade relations. These are by no means the only big and thorny issues facing this generation. A host of relatively new concerns often put science, scientists, and universities squarely at the center of the debates. Global warming, genetically modified organisms, worldwide epidemics, stem cell research, and cloning are among the issues that have made it from the scientific journals to the news and talk media. So, what does all this have to do with Washington State University? I believe the “World Class. Face to Face” tradition of our university provides a vision for tomorrow’s learning environment that is ideal for reasoning together on these important matters. Only with a lot of face-to-face interaction among caring and educated people can we learn how to think about things more clearly and objectively and reach balance in our views.

Sherry Turkle would likely be dismayed at the land grant universities’ lack of progress toward “reasoning together” on controversial subjects and the rise of distinctly un-caring behavior among educated people.³⁹

Conversation Ennobles

But WSU President Rawlins was onto something. The scientific method can help us understand reality, piece by piece, but conversation is necessary for directing us toward worthwhile ends, informed by scientific understanding. Humans are not just thinking things, contrary to Descartes. We are lovers, motivated by passions. The musicologist Damon of Athens, a contemporary of Plato, went so far as to

say, “Let me write the songs of a nation and I care not who writes its laws”.⁴⁰ Passions may be misdirected, justifying all means in pursuit of inhuman ends. I make two points with this. First, technological progress is not always *forward* progress. Technology may only provide evil men with increasingly deadly means to achieve diabolical ends. Second, scientific information does not stand alone. It does not, on its own, demand application toward anything virtuous. Dynamite may be used to blow up bodies or build bridges. Remember that art is the application of a science. Therefore, we say a person is “practicing medicine” or “practicing law”. The application of a science, plying an art, must be guided by something. Practicing medicine, law, or range science is fraught with ethical dilemmas. Does one preserve life for as long as possible or sustain quality of life if it means an earlier death for a cancer patient? Cancer treatment efficacy studies don’t answer that question.

Do we manage rangelands toward maximum heterogeneity and optimum production of ecosystem goods and services or toward maximum forage production? The answer depends on numerous contextual considerations, including history, cultural geography, land ownership, and more. Conversation is the only way we can navigate toward the range of possible good answers, answers that promote human flourishing, which necessarily includes the flourishing of the natural ecological patterns and processes that support humans.⁴¹

Albert Borgmann, one of the better-known philosophers of our time, said: “disengagement inevitably flattens out the world and shallows a person”.²² “Good conversation”, on the other hand, “opens up a common world”.⁴²

Scientific ideas may have serious sociological implications and philosophy must be employed to guide us. Reason is slave to the will, whether we are scientists or not. Conversation can steer us toward beautiful goals and enable our remarkable brains to untangle complex socio-ecological problems and manage whole landscapes for the brindled cow, rose-spotted trout, finches, and other dappled things.

Art of Range Podcast Episodes

The Art of Range, in its inaugural year, 2018–2019, covered a range of important topics within sustainable rangeland management. The format is intended to be conversation that meanders around a topic rather than tightly scripted lecture designed for information deposit, more long-form audio journalism than cliff notes for range professionals. Episode descriptions are presented here, organized topically. Scientific literature used as the basis for the podcast conversations can be found on the ‘show notes’ link on the Art of Range website (artofrange.com).

Rangeland Management Fundamentals

In Episode 1, Dr. Karen Launchbaugh at the University of Idaho and I as the podcast host, discuss grazing management philosophies, changes in scientific understanding of plant

community dynamics over the last 50 years, and grazing terminology.

Dr. Launchaugh, in Episode 2, covered grazing management principles that apply everywhere, coordinating grazing management across multiple ownerships, stocking rate planning for long-term rangeland health, and the virtues and vices of common grazing rules of thumb.

In Episode 4, Dr. Fred Provenza at Utah State University discusses research into how animals and environment affect each other, including how domestic animals can be selected or trained to match their environment and how this intersects with ecological, economic, and social resilience of rangeland-based livestock operations. He also introduces what is perhaps his magnum opus, a new book titled “Nourishment”.

Dr. Nathan Sayre at University of California, Berkeley has written the definitive work on the origins and history of rangelands science, public ownership, agency management, and grazing philosophy in the United States. He discusses in Episode 12 his background building fences on ranches on the Southwest, his professional pathway to the sociology of rangelands, and then surprising findings in his research for his book. The episode ends with recommendations for modern range management.

A common misconception about late summer and fall range grass is that low-quality forages serve only as fillers and have little value as feed. If this were universally true, wild ruminants would not be able to survive. Dr. Don Llewellyn at Washington State University in Episode 20 explains how to get ruminants to more efficiently digest low-quality forages. This segment introduces rumen physiology and nutrition, then presents some of the fine points of proper protein supplementation for cattle on dormant season range and pasture.

Epigenetics studies in beef cattle have revealed surprising long-term effects of cow nutrition on performance of offspring in muscle and fat development, calf survivability, growth, carcass characteristics, reproduction, and health. Dr. Don Llewellyn discusses research on fetal programming (the more familiar name for this branch of epigenetics) in Episode 21 and some of the research illuminating the relationship between the health of the mother and the subsequent health of the calf throughout its life.

Regenerative agriculture has gained popularity in response to concerns about the long-term effects of various agrochemical inputs we use on a variety of landscapes as well as the growing recognition of the complexity and sheer volume of microbial life in the soil-plant interface and below. Nicole Masters of Integrity Soils discusses the origins of her book ‘For the Love of Soil’ in Episode 27, including some possible conclusions for building up soil health on rangelands.

Healthy rangelands provide an array of ecological and social goods and services (EGS). Resiliency describes the robustness of natural mechanisms that allow land to continue providing those EGS over time with and through disturbance. Disturbances are necessary processes to create botanical diversity, but also changing diversity, across space and time. Human-caused disturbances should avoid pushing ecosystems

over thresholds, tipping points, into new degraded stable states. Dr. Sam Fuhlendorf at Oklahoma State University explains heterogeneity as the basis for management in Episode 28. Sam says scientists and managers should “embrace ecological humility” and assume we know less than we think we do.

In Episode 29, Dr. Fuhlendorf fleshes out the concept of conserving ecological patterns and processes through creative grazing management that supports biodiversity.

Ecosystem Monitoring

In Episode 3, Floyd Reed, a retired USDA Forest Service range conservationist, discusses his book “When the Grass Stood Stirrup-High: Facts, Photographs, and Myths of West-Central Colorado”, which examines landscape photographs taken in Western Colorado between 1885 and 1915. Floyd presents photographic monitoring methods that can be used by ranchers and range professionals.

How many times have you thought: “You should have seen what this looked like 10 years ago?!” We usually mean that a range site or riparian zone looks better than it did 10 years ago, but most people can’t back up that claim. Dr. Sherm Swanson at the University of Nevada discusses ways to document landscape change and translate that data into management action in Episode 13.

The scientists at the USDA Agricultural Research Service Jornada Experimental Range have been at the forefront of research monitoring rangeland health for decades. Dr. Jeff Herrick, a lead soil scientist at the Jornada, discusses in Episode 14 recent advancements in rangeland monitoring methods and tools, including a monitoring app, Land PKS (landpotential.org), that brings together big data and on-the-ground sampling.

Ethan Lane, Executive Director of Public Lands Council (PLC), makes a compelling case for ranchers to build a record of stewardship in order to tell a positive story as well as provide protection from critics of public lands grazing. Episode 15 explores the work of the PLC, why ranchers should be doing their own monitoring, and suggestions for constructively interacting with state and federal agencies.

Can satellite data and drones answer questions we’re not even asking yet? Dr. Jason Karl at the University of Idaho believes that’s a good possibility. We may be able to make connections, associations, observations, even test hypotheses, using images of whole landscapes in tandem with ground-based measurements to better understand and manage rangelands. Jason explains in Episode 17 the limitations and opportunities in remotely-sensed data, how to choose good monitoring indicators and measurements, and presents some rancher-ready tools for analyzing landscapes.

Rangeland vegetation monitoring has always been hampered by landscape variability, site selection bias, and available time to get to remote areas. With the Rangeland Analysis Platform, range managers can get landscape-scale cover values (perennial grass, annuals, shrubs, and trees) over both space and time, with data going back to 1984. Dr. Brady Allred and

Dr. Matt Jones at the University of Montana discuss the origins of the RAP in Episode 25 as well as the mechanics of the technology and applications for land managers.

Targeted Grazing

In Episode 5, Dr. Kirk Davies at the Eastern Oregon Agricultural Research Center (EOARC) discusses the invasive annual grass (IAG) problem on western rangelands and current research into promising new approaches to biological control of cheatgrass and *Venttenata dubia*. The conversation weaves in the role of fire in semi-arid shrub-steppe ecosystems, challenges in rehabilitating annual grass-infested rangeland, grazing as a biological control for cheatgrass, the pros and cons of sagebrush plants as refugia, and Dr. Davies' thoughts on how to promote perennial grasses simultaneous with grazing IAG.

Ralph Waldo Emerson said that a weed is “a plant whose virtues have not yet been discovered”. Dr. Karen Launchbaugh says in Episode 8 that some “plants out of place” present serious ecological and ecological challenges to land managers but that some unwanted plants have redeeming qualities, particularly for domestic grazing animals. This episode covers the origins of exotic species, various control strategies for weeds, success stories, integrated pest management principles, and using specific grazing timing and intensity and class of animal to suppress weed populations.

A half-century of war on cheatgrass hasn't reduced its dominance on the high sagebrush seas. Dr. Barry Perryman at the University of Nevada says in Episode 11 that old-fashioned observations and rancher communication have led researchers to a promising paradigm shift: targeting the unique biology of this biennial grass through fall and winter grazing.

Dr. Matt Germino at the U.S. Geological Survey says that perennial bunchgrass roots are the prize fighter in the wildland boxing ring with cheatgrass, and bacteria may be sitting this one out. Dr. Germino describes in Episode 24 recent research on how bunchgrass roots compete with invasive annual grasses below the soil surface. He explains concepts of resilience and resistance, the ecological mechanisms involved in competition, monitoring measurements that are good indicators of root dominance, and covers discouraging research on *Pseudomonas flavescens*, the bacterium once hoped to be a silver bullet against cheatgrass.

Managing Rangelands for Resiliency to Climate Uncertainty and Risk

In Episode 6, Jack Southworth, a rancher in Eastern Oregon, talks about how he manages for ecological and economic resiliency through flexible stocking rates, changing class of cattle based on the season's feed resources, and maximizing photosynthesis rate through the high desert's short growing period.

Dr. Matthew Reeves at the USDA Forest Service is part of a group of researchers who have developed the Rangeland Production Monitoring Service (RPMS), a retrospective

(backward-looking) prediction tool that is not meteorological forecasting, but a machine-learning approach to a seasonal outlook based on historical climate data. Episode 10 includes an interview with Dr. Reeves followed by the talk he gave at the Society for Range Management 2019 conference.

According to Dr. Shannon Neibergs, agricultural economist for Washington State University Extension, if a grain farmer doesn't have crop insurance, most agricultural business lenders will not consider issuing an operating loan. But livestock ranchers have not historically used many financial risk tools such as crop insurance. In Episode 16, Dr. Neibergs, who is also the director for the Western Extension Risk Management Education Center at Washington State University, introduces listeners to the variety of risk education products available to ranchers as well as various financial measurement and financial risk tools such as livestock insurance products.

In Episode 18, Eric Burton and Dr. Matt Reeves discuss applications for drought management information tools already in use in Arizona.

Understanding and Valuing Ecosystem Goods and Services

Dr. Ken Tate at University of California-Davis focuses his research and outreach on the diverse managed ecosystems that make up California's grazing lands, promoting management that supports the many benefits society receives from these working landscapes, including clean water, biodiversity and agricultural productivity. He discusses, in Episode 7, ecological and social challenges to public lands grazing, including water quality, public opinion, and bad reporting. He also discusses surveys conducted by UC-Davis to better understand ranchers' opinions on how regulations and land management policies affect them.

Dr. Lynn Huntsinger at the University of California at Berkeley has written persuasively about the importance of private land ranching and public lands grazing as a means of conserving, even protecting, open space, wildlife habitat, and clean water. This runs counter to the preservationist paradigm that dominated for several decades, but it is gaining traction as it also gains scientific validity. In Episode 9, she discusses risks of land conversion, benefits of intact ranches, and opportunities for ranchers to capitalize on the less tangible benefits that society receives from private lands.

The value of large public lands is largely dependent on adjacent private lands. Charismatic megafauna that characterize the American West will, perhaps ironically, only survive if large livestock ranches remain profitable. Dr. Rick Knight at Colorado State University, discusses in Episode 22 the unequal ecological value of private lands, the rise of the Radical Center, and the economics of maintaining habitat through ranching. Following the “Cattle Free by '93” sentiment of the 1980s and 90s has come growth in the middle ground, supported by both increasing recognition of the ecosystem goods and services provided by grazed rangelands as well as improvements in grazing management. Dr.

Knight talks about Payment for Ecosystem Services programs that incentivize stewardship instead of non-production.

Lands are tied to people, and any changes in land use necessarily involve people. Understanding people and land together is the work of cultural and landscape geography. Dr. Paul Starrs is a geographer who has written some of the more interesting literature on the lifeways of range people. Paul discusses the culture of the West and challenges to ranching in Episode 26, a wide-ranging interview centered on Paul's opening chapter in the book "Ranching West of the 100th Meridian".

How to Listen to the Art of Range Podcast

You can find Art of the Range at <https://artofrange.com/>. The best way to listen is to subscribe on your mobile device or computer. Each episode description includes "show notes" with links to reference materials or websites mentioned in the interviews. In addition, full transcripts of each episode are available on the website. Listeners can send questions, comments, and suggestions for future content to the email address: show@artofrange.com.

Postscript

In closing, may the land ethic of one of Wendell Berry's fictional characters represent the future of land stewardship in the Society for Range Management and in the range profession. Athey Keith, a middle-aged farmer the book's protagonist Jayber Crow has grown to admire, was "always studying his fields, thinking of ways to protect them . . . he was improving his land, [intending] to leave it better than he found it. His principle was always to maintain a generous margin of surplus between the fertility of his land and his demands upon it. 'Wherever I look' he said, 'I want to see more than I need, and have more than I use.'"⁴³

Declaration of Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

Funding for this project was provided by the Washington State University Western Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture (NIFA), and the National Riparian Service Team, Award Number 2010-49200-06203.

The Art of Range podcast website was developed by the University of Arizona Communications and Cybertechnologies team. Podcast production is under the direction of Darrell Kilgore and Matt Ziegler, Washington State University

College of Agriculture, Human, and Natural Resource Sciences Communications.

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