

Land Lines

On Science, Art, and Ecotone

By Cindy Salo

There are two kinds of truth: the truth that lights the way and the truth that warms the heart. The first of these is science, and the second is art ... Without art science would be as useless as a pair of high forceps in the hands of a plumber. Without science art would become a crude mess of folklore and emotional quackery.

—Raymond Thornton Chandler, writer (1888–1959)

I have recently heard some SRM members wonder if the society might be focusing too much on science. They worry that we are forgetting about the art of managing rangelands. A recent SRM Section newsletter explained, “What I mean is that when the average rancher, myself included, reads through the SRM publications or attends meetings, he/she is bombarded with way more scientific jargon than what they can wrap their heads around.”¹

I agree that being bombarded with scientific jargon is annoying and exhausting. But I do not believe that this is a problem of too much science. It sounds as if the problem is too much jargon. I would like us to throw out the jargon and keep both the art and the science.

The science and the art of range management cannot light our way or warm our hearts unless scientists and practitioners of the art meet in the ecotone between our habitats and understand each other. Ecotones can be challenging places where resources are in unfamiliar forms and energy and information move in unexpected ways. Living in an ecotone can require new skills and turn comfortable old habits into liabilities.

But ecotones can also be productive areas of high diversity and novel solutions. When we learn to communicate, we will be able to use the unique contributions of practitioners and scientists to develop innovative ways to address the challenges of managing our rangelands.

The Science–Art Ecotone

If I publish a research article in a scientific journal and no one understands it or uses the new information, have I “done science?” No. I have not succeeded until practitioners understand the new information well enough to use it. As one science writer pointed out, “Publishing in a scientific journal

is not disseminating information to the public. It is merely sharing sermon tips among your fellow clergy.”¹

Scientists often say that talking to the public is not in their job description. But more funders are expecting the researchers they support to communicate with general audiences. The National Science Foundation recently hosted a series of workshops on “Science: Becoming the Messenger.”ⁱⁱ An award-winning television producer, a PBS executive, and a bestselling science author taught researchers how to use narrative techniques to tell compelling stories about scientific findings. Participants learned how to tell stories in print, in videos, and online to reach a variety of audiences.

Scientists can no longer hide in their labs and claim that talking to practitioners is not their job. As Thad Box says in his column in the December 2011 issue of *Rangelands*, “Our biggest job may be in teaching science to our fellow citizens.”² Using the story-telling techniques of narrative nonfiction is a powerful way to share the stories of science with range management practitioners and our fellow citizens.

Telling the Stories of Science

We all tell stories. It is how we catch up with each other at SRM annual meetings. “I started a goat weed control business last year,” “I started a new faculty job in June,” and “I lost 30 pounds” are all the opening lines to great stories. Each story has a topic, characters, drama, and lively dialogue. Each story has a setting, a beginning, middle, and end. This is how we relate the narrative arc of our lives.

We are hard-wired to tell stories. We file away our memories as stories. We listen to stories because we can relate to them and they hold our interest. We remember the information in stories because the story line makes the knowledge memorable. When we tell the stories of science we make science interesting and memorable.

Rangelands Editor, Lori Hidinger, asked contributors to “Tell [her] a story” last year.³ In her Editor’s Note, she described a series of workshops organized by Lee Gutkind,

¹LAWRENCE, D. M. 9 April 2011. Re: Disseminating scientific thought to the general public: are scientists making science readily accessible? ECOLOG-L [listserv], Ecological Society of America.

ⁱⁱAvailable at: http://www.nsf.gov/events/event_summ.jsp?cntn_id=122323.

“the Godfather of narrative nonfiction.”ⁱⁱⁱ Godfather Gutkind showed scientists how to use storytelling techniques to communicate clearly with general audiences. Hidingier summarized these techniques in her Editor’s Note and outlined how they can be used in this journal in the latest *Rangelands* Style Manual.^{iv}

Narrative nonfiction uses “scenes,” small stories with characters who say and do things, meet challenges, surmount obstacles, and make discoveries. We are already expert story tellers. When we apply our story-telling expertise to our scientific writing we tell compelling stories about science.

Narrative Nonfiction Conveys Complex Information

Whenever I open a new *Time* magazine I scan the index for Nancy Gibbs’ byline. Her graceful and thought-provoking essays help me understand current issues and inspire me to polish my writing skills. Although Gibbs offers sophisticated analyses of recent events, her skillful writing and story-telling techniques produce essays written at the ninth grade level (I have pasted them into Word and checked using the Spelling and Grammar tool). Gibbs’ essays show that sophisticated ideas do not have to be incomprehensible.

Less than a week after it was published, in February 2010, *The Immortal Life of Henrietta Lacks* hit the New York Times Best Seller List. This book weaves together several narratives to tell the story of HeLa cells, which have made possible medical advances from the polio vaccine to in vitro fertilization. The author explains the progress of medicine by telling the stories of the researchers who developed the new techniques. The fact that the book is still on the Best Sellers List as I write this, during the Christmas 2011 shopping season, shows how powerful scientific narratives can be.

SRM members will recognize the landscapes and characters in Susan J. Tweit’s lyrical books about the West. Tweit started her career as a field ecologist but turned to writing

in order to tell the stories of science. She says that, “nature’s plots and intrigues are as interesting as any in fiction: who eats whom, who sleeps with whom, who cooperates and who competes and who cannot survive without whom.”⁴ In *The San Luis Valley: Sand Dunes and Sandhill Cranes*, Tweit writes, “with the precision of a scientist and the passion of a poet,”⁵ according to the cover. Inside the covers, Tweit teaches us about the landscapes of the San Luis Valley and the people in those landscapes. These are the things that range management strives to teach.

Communicating in the Art-Science Ecotone

Range management needs science to describe the general principles of rangeland systems and to predict what is likely to happen in the future. Range management needs art to remind us what is important and why we do what we do. The art and the science of range management are as essential to each other and as inseparable as plants and soil.

I envision a jargon-free ecotone between science and art where practitioners and scientists share their stories. Learning to use narrative techniques can be hard. I struggle mightily to write clearly and tell compelling stories in print and in oral presentations. But if scientists and practitioners cannot understand each other’s stories, the ecotone between art and science will be a barren no-man’s land littered with jargon and confusion and incapable of sustaining our profession.

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5. TWEIT, S. J., AND G. OAKLEY. 2005. *The San Luis Valley: sand dunes and sandhill cranes (desert places)*. Tucson, AZ, USA: University of Arizona Press. 96 p.

ⁱⁱⁱ Learn more at: <http://graduate.asu.edu/node/3038>; <http://graduate.asu.edu/node/3139>; <http://graduate.asu.edu/node/3142>; and <http://graduate.asu.edu/node/3144>.

^{iv} *Rangelands* style manual. April 2010. Available at: http://www.srmjournals.org/userimages/ContentEditor/1270766189225/Rangelands_style_manual_2010.pdf.

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