



Stewardship

Providing Leadership for the stewardship of rangelands based on sound ecological principles

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(Photo by Jim Thorpe)

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The Editor's Corner

As I was preparing this issue of *Stewardship* I found myself reflecting on the changes we have implemented in the Society for Range Management. While I don't feel any different from the past, I realize that I'm an "old timer" and look at the Society in a different manner than many of our members. I use a computer and have a simple cell phone. I don't understand most of the new multi-media tools and activities.

I became aware of how *Twitter* works by following the young Amelia Earheart as she recently flew around the world to recreate the famous flight by her namesake (see <http://www.ameliaearhartproject.com/>). Once I figured out what to look for I started checking the SRM Twitter feed. I was surprised by the amount of information on the site, and am happy to report that one of the articles in this issue of *Stewardship* resulted from a Twitter posting!

There is more information available than I will ever be able to assimilate. I will never catch up!

Let me know if you have any interesting items or experiences that we can include in the next issue of *Stewardship*.

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A Word from the President

Hello SRM Members! Here's the latest issue of *Stewardship*, full of information useful to the range practitioner. *Stewardship* continues to receive high marks from folks who are members of SRM and many who are not.

Why don't you print off a few copies and share them with your permittees, members of your SWCD board of directors, or just the guy in the next office? Feel free to forward on via email to anyone interested in the stewardship of rangelands!

Help us spread the good word!

Reading *Stewardship* for the first time? Like what you see? Consider joining SRM!

Visit us at www.rangelands.org and join today!

And don't forget to submit your articles and ideas to Editor Gary Frasier at gfrasier@aol.com.

Happy Trails,

Jenny Pluhar, SRM President 2014

Feel free to call day or evening: 806-679-8729 cell

Dirt Fire and Road: My First Season as a Wildland Firefighter

Originally posted on the USDA Blog, <http://blogs.usda.gov/>, by Michaela Hall, Fire and Aviation Management, U.S. Forest Service, on July 23, 2014 at 12:30 PM

For the second time, I spilled burn mix on my clothing as I reached to replace a drip torch.

After three days of working with the [Davidson River Crew](#), I was getting used to how things worked – except for the drip torch.

I'd spent the first seven years of my career buried behind papers and computers in the Headquarters Office. When I heard of a job to improve firefighting training for [Job Corps](#) students, I jumped on it. As a Job Corps alumna, and someone who's still passionate about the program, I felt that I was the perfect candidate.



Michaela Hall, a Job Corps alumna, challenged herself to learn firefighting skills as part of the Davidson River Initial Attack Crew, stationed at Schenck Job Corps Civilian Conservation Center on the Davidson River on the Pisgah National Forest in western North Carolina. (U.S. Forest Service).

See more at:

<http://blogs.usda.gov/2014/07/23/dirt-fire-and-road-my-first-season-as-a-wildland-firefighter/#sthash.vV6Pevmb.dpuf>

Except that I had no fire experience.

So, eager to bolster my qualifications, I completed fire training at [Harpers Ferry Job Corps](#). A year later, I started a temporary job with Davidson River to get some fire credibility. It was an amazing four months of dirt, fire and road – in the order of what I experienced the most. By the end, I'd learned three lessons for surviving in the fire world. And I soon realized that they could be applied to regular life.

PACK LIGHT

My personal gear bag was a monster. Justifying its size, I swore that it only held essentials. After weeks of teasing, a crew member predicted that I'd

get tired of carrying it. Sure enough, I downgraded after two months. I hadn't needed many of those items and I ditched the "body bag" for a much smaller pack.

Knowing what to take on fires depends on preference. Guided trial and error is the best way to personalize your gear for fire season. Getting rid of the extras from my gear bag was such a relief that I cleaned and downgraded other parts of my life like my massive purse and my shoe collection.

It continues to feel liberating!

SAY YES

Aside from bathing in burn mix, my third day held successes like driving a bull dozer and riding in a fire engine. I think I created many great memories because I didn't say "no". And there were times I wanted to. Times when I had no idea what to do and didn't want to risk failing.

I learned at the Action Review held after each burn that failure is a lesson. And when you share your lessons, others grow. So, the fear of failure dissipated into confidence that no matter what happened I would learn something.

Now, as I participate in meetings and projects, I present ideas or volunteer for lead roles. I'm not afraid of messing up or asking for help or failing. I'm more afraid of the experiences I miss if I never try.

DON'T SWEAT (the small stuff)

The stains, tears and burns on personal gear tell a story about the person using it. A clean Nomex shirt screamed rookie or overhead. One glance at my eager smile and sparkling eyes revealed to which group I belonged.

I was lucky to keep my smile and sparkle for most of the season, although the early mornings and late nights took their toll towards the end of the season. What kept me sane was remembering to not sweat the small stuff. It still works. I ask myself, "Will this matter next year?" If the answer is no, and it usually is, I move on.

My first fire season was an introduction to embracing nature in its creation and destruction. I pushed myself, made friends and traveled to amazing places. I saw beautiful mountainside, prairie land and a lakeside home that I instantly fell in love with.

"How many fire seasons would it take to buy this property," I asked after a day of preparing the property for a nearby burn.

"A lifetime," someone yelled.

I saw that as a good thing because while I don't have millions, I do have a lifetime.



Michaela Hall was part of the Davidson River Initial Attack Crew on the Pisgah National Forest. She is a graduate of the Job Corps program which is taking steps to help protect our environment and connect students with businesses and their surrounding communities through green training. (U.S. Forest Service)

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New ATTRA Publication Gives Ranchers a Formula for Productive Pastures

By Rich Myers, Editor, NCAT Publications Production Team

The grass is always greener on the other side of the fence... That may be due, in part, to the rancher's careful management and accurate record keeping, which allow him to produce an economically efficient rotational grazing program.

A new ATTRA publication, *Grazing Calculator: Extended Cow Calf Pair*, provides producers with a simple means of analyzing their grazing program throughout the season.

"Knowing how long your recovery period will be, that is, the amount of time it takes grass to fully recover between grazings is essential to a successful grazing program," explains Dave Scott, Livestock Specialist with the National Center for Appropriate Technology and co-author of the grazing calculator.

"Not measuring your recovery period is a common mistake for many beginner grazers," Scott points out.

The user friendly spreadsheet will allow producers to keep an accurate record of seasonal pasture production per field which will, in turn, make management decisions much easier and help keep grazing plans on track. Accurate record keeping will allow producers to identify pastures that may become a weak link in the grazing system and enable them to troubleshoot if a problem arises, ultimately making the operation more efficient.

Scott simplifies the result of an often complex management system. "Good things happen when you let your plants fully recover. It increases the quality of grass and health of the soil."

Grazing Calculator: Extended Cow Calf Pair was created by Livestock Specialist Dave Scott and Accountant Brian Coldiron, for the National Center for Appropriate Technology (NCAT) headquartered in Butte, Montana.

Grazing Calculator: Extended Cow Calf Pair is available for free download on NCAT's ATTRA website www.attra.ncat.org.

ATTRA—National Sustainable Agriculture Information Service—was developed and is maintained through a cooperative agreement with the USDA's Rural Business-Cooperative Service by the National Center for Appropriate Technology, a nonprofit organization headquartered in Butte, Montana.

ATTRA has been the nation's leading resource for information on sustainable agriculture since 1987, covering a wide range of topics, including reducing pesticide use on cropland, promoting food safety in sustainable production systems, reducing farm energy use and costs, enriching soils with the use of cover crops, and providing technical assistance in the growing areas of local farmers markets and urban gardening.

In addition to hundreds of sustainable-agriculture publications, ATTRA's other popular offerings include a free sustainable-agriculture telephone helpline and the "Ask an Ag Expert" feature on the home page. It has an archive of webinars and videos generated by NCAT and partnering organizations.

ATTRA also maintains numerous popular databases, including sustainable-agriculture internships and apprenticeships, and is a source for the day's agriculture news, among other features.

Since 1976, the National Center for Appropriate Technology (NCAT) has been helping people by championing small-scale, local and sustainable solutions to reduce poverty, promote healthy communities and protect natural resources. In partnership with businesses, organizations, individuals and agricultural producers, NCAT is working to advance solutions that will ensure the next generation inherits a world that has clean air and water, energy production that is efficient and renewable, and healthy foods grown with sustainable practices. More information about its programs and services is available at www.ncat.org or by calling 1-800-ASK-NCAT. You can also contact Author Rich Myers at richm@ncat.org or 406- 494-8675.

Stewardship in West Texas

By Jake Landers, Extension Specialist, Emeritus (Texas)

<i>Rain on hills in ages past Made the soil and grew the grass That fed the deer and buffalo Now cattle, sheep, and goats, you know.</i>	<i>Now if you have excessive stock And graze the hillsides down to rock The soil your heirs should get, you know Is in the Gulf of Mexico</i>
<i>When the grass was over used Rocks appeared and soil diffused Into the river, silt and sand Of Pecos and the Rio Grande Which moved toward the end, you know To fill the Gulf of Mexico.</i>	<i>And your eternal price to pay Will rest upon that judgment day When God commands: "You lay the track Return the soil upon your back,"</i>

We may wish it so, but there is little chance that those who do damage to the land in their lifetime will have to repair it in their death. That burden rests with their heirs and others. Sometimes it takes a generation or two to repair the damage of poor range management. Valuable grasses, forbs, and browse plants are lost from overuse, and less desirable plants that can survive under poor management take their place. Plants are classified by the experts as Decreasers, Increasesers, and Invaders, if they decrease with overuse, increase with overuse, or come in and multiply with overuse.



Gabionade (constructed of rocks in wire cages) to prevent the formation of a gully in local cropland that would result in the loss of soil.



Gabionade in rangeland constructed by two high school students in one day to hold back leaves, manure and other debris while allowing the water to slowly flow through.

The loss of soil with cultivation can be more severe. Gullies that formed so deep that tractors couldn't fill them in caused many of our families to move west after they could no longer make a living on Alabama and South Carolina farmland. If our land is too damaged here, there is no more open land for our families to settle. Cultivated soils lack vegetative cover much of the year that gives some protection to the soil. New soil is generated over centuries, it is lost in decades.

Stewardship is a word that we use to define the proper care of a resource. Traditionally we have referred to the soil as the resource we are most concerned about. Now, however, it seems that water is the resource that needs to be cared for with special concern. Water is consumed by green plants in the process of photosynthesis and is released when the products of photosynthesis are consumed with the release of energy. Water is used over and over again in the processes of the living. Back and forth in the environment and in and out of living things. Do you think we know how to use water properly?

Stewardship must deal with education. Are we born with the wisdom to use our resources wisely? Seems to me that a person needs to be educated on the proper management of a resource before we can expect stewardship. Are our public schools and universities equipped to do this?

Stewardship deals with awareness. Churches and government agencies such as the National Association of Conservation Districts have proposed that a week be declared as Soil Stewardship Week. Maybe this is a way to continue to learn, respect, and care for the

resources that we have for our lifetime as well as for the lifetimes of many to come. This is not enough. Stewardship should be as much of a habit with us as being able to recite the A,B,C's.

Landscapes and Management

By Dr. Roy Roath, Consultant for Rangelander Education and Consulting, LLC

It has become a mantra in some sectors to manage on a landscape scale. It is more often talked about than achieved.

There are several ecological mechanisms that can be truly said to have landscape scale affects: 1) weather; 2) grazing; 3) fire; 4) redistribution of nutrients; 5) plant invasion; and perhaps 6) disease and/or insect predation (although one could argue that insect impacts are grazing). All other machinations that I can think of are outcomes of effects of process changes.

Weather, disease and insect outbreak impacts are generally beyond our control, although we may have the capability to alter the intensity of these impacts by how we approach other landscape scale relationships. Plant invasions or invasive plant persistence are often portrayed as management independent outcomes. This means "It wasn't our fault!" However, upon further investigation we often find there are management induced relationships that may have been involved with plant invasion, even though we may not have been aware of them. In fact, they often interact with weather impacts on plants and our responses to weather induced events such as drought.

Changes in western landscapes, and perhaps other more mesic environments, are increasingly attributed to change in fire regimes. In the west, this has allowed for drastic increases in woody overstory across the landscape as in eastern red cedar, rocky mountain juniper, western juniper, and increased pine forest densities in many areas. This increase in woody overstory beyond the "natural range of variability" has imposed a major change in water relations in most, if not all, of these environments. Water capture and infiltration rates have decreased dramatically and are associated with canopy interception and increased overland flow. The outcome is loss of understory production and, in many cases, understory plant communities. In other environments, change in fire regime has "allowed" alternate woody plant communities to become dominant. In these cases replacement by subalpine fir, New Mexico locust and a plethora of other species of replacement woody overstory is common.



Example of a pinyon & juniper invasion of a sagebrush community

Livestock grazing is another landscape scale activity that may have either positive or negative impacts. This activity has, perhaps, been blamed for alterations of native plant regimes more than any other. It is true that improperly applied livestock grazing can cause short term and even long term changes in landscapes. In Oregon, it was found that livestock grazing changed the growth rate by increasing the bitterbrush in the woody plant community. This may be regarded as positive depending upon the frequency and intensity of the grazing application. Alternatively, encouragement of excessive woody overstory of less palatable species may be a poor trade-off. Livestock grazing and its associated impacts may create a more xeric environment that is, for the most part, less beneficial to most plants and other grazers; it can also produce whole landscapes with greater species diversity and increased water capture. Watershed studies in North Dakota indicate that appropriately stocked and rotationally deferred lands have appreciably increased the proportionate amount of water capture. Increased water availability leads to greater productivity, diversity and system resiliency when tested by stressors like drought or insect or plant invasions.

Of the many ecological tools we use, perhaps the most important is understanding. This understanding is derived by forming conceptual models of cause and effect relationships that are either confirmed or refuted by observations, and measures of expected responses...aka monitoring! However, almost all monitoring we currently do is at the plant community level (although the NSF document *Indicators of Rangeland Health* makes a stab at landscape responses without really defining the scales of expected response).

The operative question is:

What do we monitor at landscape scales that indicate desirable or undesirable responses or outcomes?

I would like to propose some thoughts on what to observe. I know of no response variable that is more indicative at landscape scales than water. We know that watersheds are defined at scales beyond plant communities and clearly are indicative of the cumulative effects of our “management” changes. Width of wetted green boundaries along riparian communities seems to be an indicator of landscape scale changes. Wayne Elmore, retired BLM National Riparian Service Team Leader, has often illustrated riparian response by documenting increases in riparian habitat acreage in response to management changes. Restored stream flow or increased duration of flow are obvious indicators of improved hydrologic function. Additionally, I would suggest the proportion of deep rooted plants across the landscape is also an indicator; and the decrease in caespitose species or growth forms are also indicators of improved water capture, increased availability, and deeper infiltration.

Erosion characteristics are companion indicators of positive or negative landscape response or change. Increased ground cover changes overland flow and enhances infiltration. However, the cumulative indicators may be changes in the amount of soil and debris movement; and the frequency of which these events happen seem to be very important indicators of landscape scale response. My experience is that changes in the upper drainages of pinyon and juniper, and in some cases sagebrush, has materially changed both the amount and frequency of soil and debris movement due to increases in water capture and decreases in overland flow.



Side by side comparison of before and after a spring burn Trincheria Ranch 1998

Photos taken before and after spring burn of 1998

While the indicators presented here are not intended to be an exhaustive list, they are several which may be incorporated into monitoring protocols to determine effectiveness of management actions.

We will discuss these interactions and assessments during the Colorado Section of the SRM Summer Tour September 11, 2014 at the Bader Ranch south of La Junta, Colorado. The Baders are the 2013 recipient of the Colorado Section's *Excellence in Rangeland Stewardship* Award. They have been managing in the face of an extended drought and have had a major wildfire on their property. We will discuss decisions of stocking and grazing management while dealing with both drought and large scale fires on landscapes in Southeastern Colorado.