Salinas River Watershed Planning

Devii R Rao, Livestock and Range Advisor-Monterey, San Benito, and Santa Cruz Counties

On Friday, January 22 the nonprofit Ecologistics, the Upper Salinas Las Tablas RCD and UC Cooperative Extension put on a full day symposium at the Paso Robles Inn to discuss the idea of developing a comprehensive watershed management plan for the Salinas River. Their concern is that the human population will continue to grow and put more demands on the river, so we should start planning for a future where agricultural and domestic uses can continue along with a healthy and well-functioning river. They recognized that in order for this type of planning process to work, it will require good communication and collaboration among all stakeholders.

There were several University of California speakers at the Symposium, including Royce Larsen, Natural Resource Watershed Advisor with UCCE, who gave a great overview of the agricultural and ecological importance of the Salinas River Watershed. I will focus on two presentations that may be of particular interest to livestock producers. Dr. Rob Atwill, with the UC Davis School of Veterinary Medicine and Dr. Ken Tate, Rangeland Watershed Specialist with UCCE spoke about their rangeland water quality research.
Dr. Atwill told us that when *E. coli* or other pathogen outbreaks occur in leafy green crops, livestock are often assumed to be the source of the pathogen, but there’s not much connectivity between cattle and the crop fields. Wildlife, on the other hand, can move through crop fields. In one study cattle and wildlife were tested for *E. coli* and *Salmonella*. *E. coli* was found in 2.5% (68/2715) of cattle tested, while 5% (10/200) of feral pigs, 5% (5/93) of American crows, 3% (2/60) of cowbirds, 2% (2/95) of coyotes and 2% (3/150) of tule elk were shedding *E. coli*. *Salmonella* was shed from 3.8% (17/449) of wildlife and 0.13% (1/795) of cattle tested. Shedding was much higher in wildlife compared to cattle. That’s not to say that cattle are not a potential contributor, but that wildlife are more likely contributors since they can have higher shedding rates, can congregate in groups, and have access to crop fields. Another study showed that 9% (67/726) of cows and 20% (136/686) of calves were shedding *Cryptosporidium sp.* and 23% (168/726) of cows and 42% (286/686) of calves were shedding *Giardia duodenalis*. While this may sound high, it turned out that both the *Cryptosporidium* and *Giardia duodenalis* found in the beef cattle appeared to have low to no infectivity for humans. This research is important to take into consideration when developing food safety guidelines.

Dr. Tate spoke more broadly about rangeland in California. California has 57 million acres of rangeland with 22 million acres in private ownership. Eighty percent of surface waters (water used for drinking and irrigation) are derived from or stored in California’s rangelands. These lands also support a $3 billion annual sheep and cattle industry.

Dr. Tate described the California Rangeland Watershed Program which was developed 25 years ago. This was a collaborative partnership between ranchers, the University of California (UC), Resource Conservation Districts (RCD), the Natural Resources Conservation Service (NRCS), the Regional Water Quality Control Boards (RWQCB), and many others. The goal was to implement management practices that would increase livestock production and improve water quality at the same time. Ranchers have been quite active in doing projects to improve water quality. Between 2009 and 2014, NRCS had 7,385 contracts with ranchers for rangeland water quality projects. NRCS spent $302 million, with ranchers providing the same amount either in cash, materials, or labor. These projects covered 5.7 million acres of California rangeland. During this time UC researchers found that more than 90% of pathogens are retained in the cow pat or within 1 foot of the cow pat. An additional 70-99% of pathogens are trapped within 1 yard of the cow pat. They also found that more than 60% of cow pats end up near livestock attractants in the summer, so to reduce the possibility of pathogens entering waterways we can do things like strategically place salt, feed, water, or other cattle attractants away from streams or runoff areas. Livestock producers have done many things to improve both production and water quality like grazing at moderate stocking rates where the stocking rate is in balance with forage production; managing livestock distribution to take advantage of areas that are underutilized; and managing wet season grazing by putting cattle on soils that are less compactable or erodible when

![Dr. Ken Tate](image-url)
wet. Producers also install cross fencing and off-stream drinking water, create riparian pastures, herd cattle away from sensitive areas, and maintain vegetated buffer strips adjacent to waterways.

The Regional Water Quality Control Boards are looking at rangeland water quality again, so now is a good time for ranchers, UC, NRCS, and others to rekindle those partnerships from 25 years ago to help guide the future of rangeland water quality regulations.

Go to http://www.ecologistics.org/salinasriver/ for information about other Symposium presentations, to get involved with the Salinas River Watershed planning effort or to learn more about Ecologistics. Sign up for the Livestock & Range News Blog Santa Benita, Monterey, and Santa Cruz http://ucanr.edu/blogs/LNRBlog/

The “Ground Drinker” Water Trough
Royce Larsen, Rangeland & Watershed Advisor, San Luis Obispo & Monterey Counties

The 6th National Conference on Grazing Lands took place in Grapevine, Texas, on December 13th – 16th, 2015. One of the papers presented at this conference was on a new design of the water trough by George Work, Karl Striby, Bill Tietje, Mark Barnett and Royce Larsen. This newsletter article is a portion of that paper.

Water is the most limiting resource for cattle and wildlife on California ranches especially during droughts. For many years, water troughs have functioned to distribute cattle across the landscape to better utilize forage resources that would be inaccessible due to distance from water. Because water helps control livestock distribution, it has been shown to be an effective management tool. The need for developed water has also been shown to be essential for wildlife. For example, larger wildlife such as deer require a water source between 1 and 1 ½ miles of their home range, especially during the fawning season. In addition, smaller wildlife including birds such as quail, also require water daily and can benefit from developed water sources. Traditional water troughs on ranches can aid in providing wildlife with this much needed water, but they can also become a death trap for some animals unless wildlife escape structures are installed.

Traditionally, providing water to wildlife was secondary to the purpose of water troughs used for livestock production. Recently, there has been an increased interest in maintaining wildlife populations year round on ranches for hunting and aesthetic purposes. On many ranches, water troughs are considered as important for use by wildlife as they are for livestock. Adaptions to traditional livestock water troughs have been made to better serve wildlife. These include the addition of access and escape ramps. These however, can still result in the drowning of some wildlife. Moreover, small birds and other animals can’t reach water that is two or three inches below the top edge of a traditional water trough. Small mammals, reptiles, amphibians and insects aren’t tall enough to reach over the trough rim on standard water troughs making it difficult, or impossible, for them to get water.

A new water trough design has been developed that satisfies the water needs of livestock and wildlife equally. Dubbed the “Ground Drinker,” it has been installed on several ranches on the California central coast with great success. The trough is made of prefabricated, steel reinforced concrete, or can be poured in place. The length of the trough can be changed by adding 4’ sections, up to 12’, or even longer. The added length will accommodate more animals. The trough is narrow with V-shaped sloping sides coming together at the bottom to discourage animals from standing in the trough, (figure 1). The Ground Drinker has a lower water holding capacity relative to other high volume traditional troughs, but it puts the water on the ground. In
addition to the increased accessibility to water, there is less chance of accidental drowning. Insects such as butterflies and bees can drink from the trough and song-birds can bathe on the sloping animal ramps which are built into the trough.

George Work, the Monterey County rancher who designed the trough said, “The Creator put water on the ground, not 3 feet above the ground in a bathtub where only a large adult animal can reach it”. USDA-NRCS Range Conservationist, Karl Striby, worked with George through the WHIP (Wildlife Habitat Incentives Program) in 1998 and later through EQIP (Environmental Quality Incentives Program) to develop and install a number of these troughs on the Work Ranch. Mark Barnett, NRCS engineer later developed a drawing of the water trough (Fig. 1). A full schematic drawing can be obtained from the Templeton NRCS office. A full copy of this article will soon be available in the proceedings of the 6th National Conference on Grazing Lands.

Get BQA certified at Monterey County Cattlemen’s Spring Meeting

If you are new to the BQA program, here’s some information about it: BQA provides systematic information to beef producers and beef consumers of how common sense husbandry
techniques can be coupled with accepted scientific knowledge to raise cattle under optimum management and environmental conditions. BQA guidelines are designed to make certain all beef consumers can take pride in what they purchase – and can trust and have confidence in the entire beef industry.

Through BQA programs, producers recognize the economic value of committing to quality beef production at every level - not just at the feedlot or packing plant, but within every segment of the cattle industry. BQA is valuable to all beef and dairy producers because it demonstrates commitment to food safety and quality, safeguards the public image of the beef and dairy industries, upholds consumer confidence in valuable beef products, improves sale value of marketed beef cattle, and enhances herd profitability through better management.


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**How to Control California Ground Squirrels**

A Free Workshop for Commercial Agricultural Business Owners

**March 21, 2016**

8:30 am to 11:00am

Veteran’s Memorial Building
801 Grand Ave.
San Luis Obispo

2 CE credits approved (1.0 laws, 1.0 Other)

**Topics covered:**

- Squirrel Biology
- IPM Plan
- Using Bait. Carbon Monoxide and more options
- Review of CDFA Bait labels
- Update on Cryptosporidium

**Speakers:**

Roger A Baldwin Ph.D., Pest Mgmt Specialist
Dave Kratville, Sr. Environmental Scientist
Royce Larsen Ph D., Natural Resource Advisor

Register at [http://ucanr.edu/groundsquirrels2016](http://ucanr.edu/groundsquirrels2016)

Or call Ingrid 805-781-5940
Range Improvement Association Annual Meeting & BBQ

Friday, April 22, 2016
Arroyo Grande Association Hall
707 Huasna Rd., Arroyo Grande

Social Hour - 6:00 pm
Dinner - 7:00 pm

Guest speakers will be from Cal Fire and the Range Improvement Association, including Lynn Compton - Board of Supervisors
Topics: Prescribed Fires, El Nino and Weather, & Ground Water Issues

Dinner $15.00  Dues $5.00
PLEASE RSVP: Mike Zimmerman
Call 489-4705 or email at mike@dz-law.net

SLO County Rainfall
Maria Murrietta, Farm Advisor Assistant

Record high temperatures in February had all weather watchers wondering what happened to El Nino. Forecasters have been adjusting and reevaluating as the rest of us wait. But it’s not too late to see some significant rainfall. In fact, John Lindsey has explained that it’s rather common for El Nino to make a later than expected appearance.

How late? Late February, into March and possibly lasting into April. Forecasters expect the jet stream to take position over central and southern California and open up the storm floodgates. A sizable storm and measureable rainfall will provide some immediate relief, but it will not put an end to the drought. Complacency is tempting, but not realistic. The hillsides may green up, but let’s step back and look at the big picture.

Let’s hope for more rain, however caution may be needed. The amount of rain California would need to officially end the drought would have major damaging effects on our landscape, like flooding and erosion, if we get too much rain too fast. Therefore if this rain does come, it’s important to consider flood and erosion control measures on your property to get ready for whatever may fall in the coming weeks.

Figure 1 compares the average cumulative rainfall for three different periods – from 1870 through 2016, 1997-1998 (the last El Nino recorded), and the present water year 2015-2016 through January. This graph shows the sporadic rains this winter are fairly consistent with the 146 year average depicted by the dashed line. However, present rain totals fall well below the totals of the last significant El Nino event from 1997-1998.

Figure 2 shows that downtown Paso Robles averaged approximately 10 inches less rain between January and April than was recorded Cal Poly. The current rainfall, depicted by the solid line, sits between the historic records.
Figure 1. Average cumulative rainfall recorded at Cal Poly.

Figure 2. Average cumulative rainfall recorded at downtown Paso Robles.