



Russell L. Rustici Endowed Specialist in Cooperative Extension in Rangeland Watershed Science



Kenneth Tate
*CE Specialist and
Professor*
PlantSciencesDepartment
plantsciences.ucdavis.edu
kwtate@ucdavis.edu

ENDOWMENT PURPOSE

The Rustici Endowed Specialist in Cooperative Extension in Rangeland Watershed Sciences was established in 2008 by the late Russell L. Rustici to give special recognition to the holder and provide financial support for his or her teaching, research and outreach efforts. Mr. Rustici was particularly concerned with research that investigates the connections between range management, water quality, hydrology and related ecosystem processes towards the protection and enhancement of California's Central Valley rangeland landscape. The Specialist in Cooperative Extension is one of two endowed positions created through Mr. Rustici's giving.

RESEARCH

I am currently using Rustici funds to support the second year of a large-scale field research project to estimate natural, human, and cattle contributions of microbial pollutants in rangeland watersheds - I initiated this research with Rustici funds last year. There is persistent concern among water quality agencies that fecal microbial pollution from cattle degrades water quality and threatens human health. Yet, the relative contributions between natural, human, and livestock sources is not well documented on our rangelands. We must answer this question to complete our understanding of the scientific framework of microbial pollution in rangeland watersheds, and thus fully inform effective policy decision-making and on-the-ground management. We are in our second year of sampling at over 100 sample sites within the Susan River, East Walker River, Upper Stanislaus River, and Upper San Joaquin River Watersheds. We are finding clean water conditions associated with grazing areas and recreation sites across these watersheds. We have shared results with ranchers, water quality agencies, federal land management agencies, local government, and other stakeholders in public workshops and field tours. We are currently developing research publications, and will present results at the California Cattlemen's Association annual conference (Nov 2017) and the Society for Rangeland Management national conference (Jan 2018).



TEACHING

In 2015, I assumed responsibility for "Rangeland Ecology and Management" (PLS 130) which is my core undergraduate teaching responsibility. I completely revised and modernized this course. Based upon my applied CE experience over the past 20 years, I have introduced an integrated focus on rangeland ecology, management, conservation, and contemporary policy issues surrounding working rangelands. I have developed all new lectures, assignments, exams/quizzes, and discussion materials. The course was previously taught every other year, but I now teach the course annually - doubling accessibility of the course to a suite of students from diverse majors. I want to give all interested students the opportunity to learn about rangelands. For a second year, the course filled very quickly to a maximum enrollment of 60, and was very well received by students - many telling me this was one of their first courses that integrated the many agricultural and environmental disciplines they had studied in lower division courses.

At the request of students enrolled in PLS 130 during this winter quarter I offered a "Rangeland Field Laboratory" for 2 units in spring quarter of 2017. This was the first opportunity for most of these students to actually set foot on rangelands and see the interface of agriculture and the environment firsthand. We all had a great experience - including the managers and ranchers that hosted us at field sites - and I am committed to adding a formal field laboratory offering to PLS 130 in the near future.

STUDENTS

During this period, I have funded 7 undergraduate students to conduct undergraduate research internships within our group - all working on Rustici funded projects. I funded these students to assist in a study of microbial water quality conditions relative to grazing, recreation, and rural residential areas within the Susan River, East Walker River, Upper Stanislaus River and Upper San Joaquin River Watersheds. These internships have been excellent experiences for all involved, and we plan to continue and increase our undergraduate internship opportunities within the UCD rangeland group. I also funded fencing supply costs for a graduate student examining the reported benefits cattle grazing for conservation of vernal pools on annual rangelands.

OUTREACH

The Rustici Endowed Specialist funding has allowed me to establish the Rustici Rangeland Science Symposium. The first, second, and third symposiums were held 2012, 2013, and 2015 on the Davis campus. The 2-day events feature innovative partnerships among researchers, ranchers and rangeland managers, agencies and conservation organizations. In total, we have had over 1,000 attendees. In June and September 2016 we conducted the first and second Rustici Rangeland Tours in northeastern California and the central Sierra Nevada with soldout attendance. These events foster conversations and exchanges that are the first step towards a positive, shared vision for environmental and socio-economic sustainability for our rangelands. In March 2017, we conducted the 4th Rustici Rangeland Research Symposium on the Davis campus with over 200 attendees.

Please see the 2017 Rustici Rangeland Research Symposium link below:
<http://rangelands.ucdavis.edu/rustici/rangeland-symposium/>



Finally, I have led the development of the Rustici Rangeland Endowment website within the UC Rangelands research and information center. This site highlights the suite of Rustici endowments, and provides stakeholders access to the fruits of these investments.

Please see the Rustici Rangeland Endowments website link below:
<http://rangelands.ucdavis.edu/rustici/>

NOTEWORTHY ACCOMPLISHMENTS

This endowment supports a mosaic of rangeland research, outreach, and teaching activities and accomplishments - such as the 2017 Rustici Rangeland Research Symposium. During the past year, I was extremely honored to receive the Rangeland Conservation Impact Award from the California Rangeland Trust.

Please see the link below for more information about this award:
<https://www.rangelandtrust.org/press-release/conservation-impact-award-awarded-dr-kenneth-w-tate/>

FUTURE USE

I plan to continue to use these funds to support our grazing and water quality research program. I also plan to use these funds to continue to support undergraduate and graduate students interested in internship and professional development in rangeland management. Finally, I plan to use Rustici funds to help cover startup costs in developing a rangeland field laboratory (e.g., sample equipment for student use).

THANKS

I am deeply indebted to Russ for his commitment to range management and science, and his mentoring early in my career. I am focusing our efforts and the use of these funds on projects and activities which I think Russ would have valued and approved. Every project has direct involvement and input from California's ranching community. I am leveraging other funds and support almost dollar for dollar in the process, which I know Russ would have liked. I remain really excited about where we are headed with range science in CA, and it is in large part due to Russ's investment.

College of Agricultural and Environmental Sciences

Office of the Dean
Development

One Shields Avenue
Davis, CA 95616

(530)752-1639

caes.ucdavis.edu

supportcaes@ucdavis.edu

