



**Sustainable
Southwest Beef**
knowledge and tools for ranch and
rangeland resilience

Sustainable Southwest Beef CAP Newsletter

March 2022

A Message From The Leadership

Hello all:

The Sustainable SW Beef project is rounding the half-way mark of our five-year endeavor. One obvious characteristic of this project is change, an inherent characteristic of any long-term project. Students complete their training and move to the next phase of their careers; team members grow in their capacity, leading to new opportunities. A sign of our success is the ability to continue to attract high quality students and team members, who bring innovative ideas and approaches and energy to our core goals.

Another characteristic of a maturing long-term project is shifting focus from planning and implementing, to developing innovative ideas and products, to delivery of the new knowledge and products to end users. As technology to support the SW Beef Knowledge System is advancing, we see the need to focus on synthesis of our findings and framing as a series of questions that are relevant to key stakeholders.

For ranchers:

- *Is matching livestock type with my environment right for me?*
- *Is precision ranching right for me? (ours is under development)*
- *Is grass finishing right for me?*

For Feedlot managers:

- *Is manure recycling longer distances from the feedlot right for me?*
- *How will feeding Criollo affect my bottom line?*

For the Beef Industry as a whole

- *How does public awareness of about connections between links in the supply chain affect consumer preference?*

For consumers and communities connected via beef production:

- *How does heritage beef differ from other beef? How important are these differences to me?*
- *How many grass-fed animals can be raised in the SW? What are the market alternatives for these animals?*
- *What are effects of increasing SW grass finishing on the Southwest? Southern Plains? Upper Midwest?*

Meeting the needs of these and other stakeholders to answer questions to them will require building on our partnerships for co-production of knowledge to improve the sustainability of beef production in the SW. We can't imagine a better team to work with as we jointly tackle this ambitious goal!

Welcome!

Paige Ramsey has joined the Extension team as a Program Specialist.

Sajidur Rhaman, software developer, and Andres Perea, a doctoral student in Animal Science, have joined the precision ranching team.

Adam Chess, Besangie Sellars, and Valarie York have joined our OEIE evaluation team. This team is working with the Steering Committee to update the Year 3 Project Evaluation Plan

Moving On

Congratulations to Keegan Taylor, who has been accepted to Veterinary School at Texas Tech in Amarillo, Texas, and will be leaving the team in April to embark on his new adventure - we wish him all the best!!

Congratulations to Alison Teeter, who accepted a position in the private sector and left OEIE.

Congratulations to Mark Musumba, who started a new position focused on agricultural economics at RaboBank. He continues to contribute to Supply Chain reporting.

We say goodbye and wish Melissa Spence well as she has moved on from our Program Coordinator position to a new position with NMSU Extension.

What's New?

Check this out! www.asombro.org/free - Website where educators can access all the slides, worksheets, videos, and other materials they need to teach four lessons developed for the project, including:

- Are You This Cow's Herd? – 3rd grade lesson on traits
- Solving the Beef – Game for ages 12 and older
- Get Out and Graze – Classroom lesson for middle and high school students
- Evaluating Solutions for Sustainable Ranching in the Southwest – Classroom lesson for high school students

Sustainable SW Beef at the Society for Range Management (SRM)



Skye Aney organized and staffed an outreach table in the Exhibit Hall, assisted by other team members.

Our project had a big presence at the 75th Annual Conference of SRM in Albuquerque, February 6-9!

From Sunday to Tuesday, numerous students and other participants stopped by for information about our project. On Tuesday, the National Drought Mitigation Center joined us at the table for outreach about the GrassCast seasonal forage forecasting product which has recently been extended to the SW.



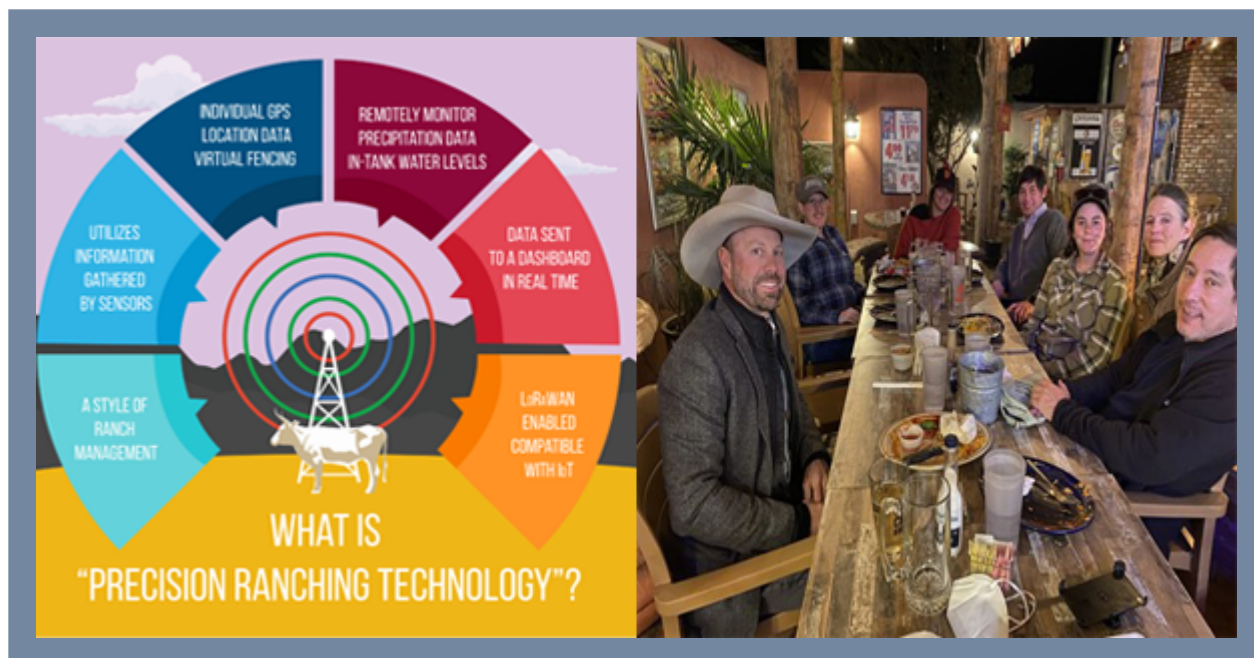
Matt McIntosh and others organized a Symposium, Precision Grazing: State of the Science and Opportunity for User Feedback.

The full day symposium included 13 presentations by members of our project and others and was attended by 50-75 people attending in person or virtually.



Sheri Spiegel and others organized a symposium, **From Desert Pasture to Dinner Plate: Evaluating the Sustainability of Supply Chains for Beef Cattle Coming from Ranches of the Southwest.**

The symposium included 6 presentations covering several aspects of our project, concluding with a very well attended panel of several ranchers, Matt Redd, Cindy Tolle, Andrew Cox, John Guldemann, and Bill Inman. The symposium was attended by 80-100 people, both in-person and virtual.



Extending Our Reach Through Multi-media



It's been a busy two and a half years for the extension team. While we are eagerly anticipating the opportunity to get back to meeting in person, we've also been busy employing other means of outreach this past couple of years, and that has resulted in a variety of resources which can be accessed anytime, anywhere, including podcasts, videos, fact sheets, and more.

Podcasts: In our most recent podcast episode, [Sustainability in Beef Supply Chains](#), project PI Dr. Sheri Spiegel shares her insights and perspectives on Southwestern US. beef supply chains, sustainability, and the importance of taking a whole-systems approach to this research. Previous episodes have focused on topics such as precision ranching technology, and we plan to continue sharing project research and ideas via podcast as the work

progresses. To date, these episodes have had over 458 downloads.

Videos: Four webinars held in 2021 focused on: precision livestock tools; tools for navigating drought; factors that affect meat quality; and sustainability incentive programs in beef supply chains. These webinars had a collective 186 attendees, which included (self-reported) researchers, ranchers, students, and agency and business professionals. In addition to recorded webinars, there are many other shorter videos available on our project's "videos" page, some as brief as 3 minutes in length. Videos produced since the beginning of this project have accrued 2,516 views collectively.

Fact Sheets: Three fact sheets and a [Case Study](#) highlight the novel strategies under evaluation. A second series presents a general project overview and annual top 10 project accomplishments. All are written for general audiences and are available from the project webpage. The Case Study, Heritage Genetics to Increase Cattle Resilience during Drought, has been accessed 328 times to date.

Social Media: We love our social media family! Since creating our [Twitter account](#) (@SustainSWBeef) in February 2020, we've been able to share many fun and exciting moments on social media. We currently have 271 Twitter followers and continue to strive to share content that is helpful and relevant to our followers. Our [Facebook](#) page has a smaller following, but any key updates or announcements are always shared on both platforms, as we know that the users don't necessarily overlap.

We look forward another great couple of years of outreach, through both multi-media and in-person interactions as circumstances allow. If you have any questions, comments, or suggestions for the extension team, please contact Skye Aney (sierra25@nmsu.edu).



Past Events

- Chihuahuan Desert Ranch Research Center Field Day, Las Cruces, NM, October 8, 2021.
 - Asombro Terrific Technologies for Ranching teacher workshop, virtual, January 15, 2022.
 - Podcast on Sustainability in Beef Supply Chains featuring Dr. Sheri Spiegel. <https://swclimatehub.info/podcast>.
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Upcoming Events

March 5, 2022 – Hands-on activity table on virtual fencing at the New Mexico Farm and Ranch Museum's Cowboy Days event in Las Cruces, NM

- At the Dugout Ranch near Moab, Utah. Registration for this event is currently at capacity, but we'll be taking lots of pictures!!
 - April 13, 2022 – Curious About Cows? Engaging NGSS Lessons on Current Criollo Cattle Research teacher workshop for 3rd grade teachers
 - March 10th, 2022, we will be holding our 2022 On-Ranch Demonstration
 - April 18-20 USDA NIFA FY2022 Project Directors Annual Meeting for AFRI Sustainable Agriculture Systems Program, Kansas City
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Journal Articles (Published)

- Nyamuryekung'e, S., A. F. Cibils, R. E. Estell, D. VanLeeuwen, C. Steele, Q. Gong, H. Cao, A. L. González, S. Spiegel, and M. M. McIntosh. 2021. Movement, activity, and landscape use patterns of heritage and commercial beef cows grazing Chihuahuan Desert rangeland. *J. Arid Environ.*
- McIntosh, M. M., A. F. Cibils, R. E. Estell, Q. Gong, H. Cao, A. L. Gonzalez, S. Nyamuryekung'e, and S. A. Spiegel. 2021. Can cattle geolocation data yield behavior-based criteria to inform precision grazing systems on rangeland? *Livestock Science*.

- Armstrong, E., F. A. Rodriguez-Almeida, M. M. McIntosh, M. Poli, A. F. Cibils, J. A. Martinez-Quintana, M. Felix-Portillo, and R. E. Estell. 2022. Genetic background of Criollo cattle in Uruguay, Mexico, Argentina, and the United States. *J. Arid Environ.* 29.
 - Spiegel, S., J.C. Williamson, C. Flynn, A. Buda, C.A. Rotz, et al. 2021. Land use change and collaborative manureshed management in New Mexico. *Journal of Environmental Quality*.
 - Zaied, A.J., H.M. Geli, A.F. Cibils, M.N. Sawalhah, J.L. Holechek, et al. 2021. Beef Cattle Price and Production Patterns in Relation to Drought in New Mexico. *Sustainability* 13(18): 10420.
 - Meredith, GR, Spiegel, S, Kleinman, PJA, Harmel, RD, In Press. The social networks of manureshed management. *Journal of Environmental Quality*.
 - Steiner, J., Devlin, D., Perkins, S., Aguilar, J., Golden, B., Santos, E., Unruh, M. Policy, Technology, and Management Options for Water Conservation in the Ogallala Aquifer in Kansas, USA. *Water* 2021, 13(23), 3406.
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Conference Papers and Presentations

- Aney, S., Elias, E., Burnett, R., Gifford, C., Duff, G., Auvermann, B., Steiner, J. Facilitating knowledge exchange around strategies for sustainability. New Mexico Cattle Growers Association Joint Stockman's Convention. December 16, 2021. (Poster)
- Aney, S., Hurst, Z., Torell, G., Elias, E., Cisneros, J., Wright, E., Duff, G., Gifford, C., Auvermann, B., Steiner, J. Opportunities and Challenges of Grass-finishing on Desert Pastures. Society for Range Management Annual Meeting, February 9, 2022. (Presentation)
- Bestelmeyer, BT, Herrick, JE, Brown, JR, Browning, DM, Densambuu, B, Elias, E, McCord, SE, Peinetti, HR, Spiegel, S, Webb, NP, 2022. Ecological Science Infrastructure for Sustainability Transformations in Rangelands, in: International Grassland Conference Proceedings. Presented at the XXIV International Grassland Congress / XI International Rangeland Congress, Kenya Agricultural and Livestock Research Organization, Nairobi, Kenya/virtual. October 25-29, 2021.

- Cibils et al. 2021. Comportamiento de pastoreo del bovino Criollo Raramuri. Segundas Jornadas del bovino Criollo Uruguayo “Redescubriendo al Ganado Criollo” Uruguayan Criollo Symposium, Nov. 5, 2021. (Uruguay Criollo Conference)
- Cibils, A. F., S. A. Utsumi, S. Nyamuryekung’e, M. M. McIntosh, H. Cao, L. Boucheron, H. Chen, X. Gong, Z. Winkler, R. E. Estell, A. R. Cox, V. Gouvea, C. Brandani, and G. Duff. 2021. Ganaderia de precision en sistemas extensivos: oportunidades y desafios.
- Chilean Soc. Anim. Sci. Annual Meeting. Nov. 11, 2021. (Chile Precision Ag Conference)
- McIntosh, M. M., A. F. Cibils, S. Nyamuryekung’e, R. E. Estell, A. Cox, D. Duni, S. Utsumi, Q. Gong, A. Waterhouse, J. Holland, H. Cao, L. Boucheron, H. Chen, and S. Spiegel. 2021. Testing of a LoRa-WAN digital ranching system on desert rangelands: some practical experiences. New Mexico Cattle Growers Annual Meeting.
- McIntosh, M.M. and others. Precision Grazing: State of the Science and Opportunity for User Feedback. A Symposium at the Society for Range Management Annual Conference, Albuquerque, NM. February 8, 2022. (13 presentations, including 6 from this project).
- Nyamuryekung’e, S., A. F. Cibils, R. E. Estell, M. M. McIntosh, D. VanLeeuwen, C. Steele, A. L. Gonzalez, S. Spiegel, L. Avendano Reyes, F. Rodriguez Almeida, and M. Anderson. 2021. Tolerancia a temperaturas elevadas del desierto Chihuahuense en bovinos Criollo Raramuri. XXXI Reunion Internacional Sobre Produccion de Carne y Leche en Climats. Mexicali, Baja California, Mexico. Nov. 25, 2021. (Mexican Annual meeting focused on heat stress)
- Nyamuryekung’e, S., A. F. Cibils, R. E. Estell, M. Funk, M. M. McIntosh, A. Cox, S. A. Utsumi, H. Cao, L. Boucheron, Q. Gong, H. Chen, S. Spiegel, G. Duff, V. Gouvea, and C. B. Brandani. 2021. Performance of LoRa-WAN sensors for precision livestock tracking and biosensing applications. Proceedings: XXIV International Grassland and XI International Rangeland Congress. Nairobi, Kenya, October 25-29, 2021.
- Spiegel, S. and others. From Desert Pasture to Dinner Plate: Evaluating the Sustainability of Supply Chains for Beef Cattle Coming from Ranches of the Southwest. A Symposium at the Society for Range Management Annual Conference, Albuquerque, NM. February 9, 2022. (6 presentations and one rancher panel).

- Taylor, K., Gifford, C. New Mexico Bull Management and Marketing Survey. New Mexico Cattle Growers Association Joint Stockman's Convention. December 14-16th 2021. (Presentation)
- Taylor, K., Gifford, C. New Mexico Calf Management and Marketing. New Mexico Cattle Growers Association Joint Stockman's Convention. December 16, 2021. (Poster)



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Our mailing address is:
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This newsletter is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2019-69012-29853, "Novel Strategies to Increase Sustainability of Beef Production Systems in the Western United States."

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