

Ranch Update



Shad Cox, Ranch Manager

What a beautiful day, as I sit down to update you on what has happened since the last issue, I am patiently awaiting the clouds to start building and a moderate chance for rain today. The winter and spring were very good to us this year allowing us green feed since March. The break over the last month or so, coupled with intermittent cool nights has slowed everything down, however we are much primed for any moisture we receive prior to the monsoonal season. I expect a great year and am ready for anything other than what we have gone through the past few.

A former boss of mine told me a few years ago that "change happens", at the time I thought, "it doesn't have to", but inevitably I am realizing that it does happen and that if you don't welcome it, it will just push you aside and leave you standing there. It has now become apparent to me that being involved can help foster the direction and magnitude of what is changing and make you more comfortable and knowledgeable with whatever direction change takes you. As expressed in past issues of this newsletter, the last couple of years has been a transition period for Animal and Range Sciences, with new administration, new faculty and more vacant positions. We continue to transition as new faculty are hired, more vacant positions develop through retirement and other opportunities. This years budget woes have left vacant positions in limbo until funding is stabilized. All changes on the departmental, college and university levels affect the CRLRC in some way or the other. I am starting to embrace these changes and learning to enjoy meeting new faculty and administration, explaining our mission at CRLRC and learn of new and exciting ideas that will mold our future and possibly help add to a positive future for agriculture and lifestyles in rural New Mexico. There are many new and exciting research plans for CRLRC that deal with beef cattle nutrition, wildlife habitat, grazing management, alternative energy, just to name a few.

At this time I would like to thank everyone who has supported the efforts for construction of the new Southwest Center for Rangeland Sustainability located at the ranch. The SWCRS will be an outreach hub for the CRLRC collaborating with the Agriculture Experiment Station, Cooperative Extension Service, Animal and Range Sciences and hopefully, many more, as plans develop. Currently, the project is out for bid with a due date of today (May 27th). A general contractor will be selected soon, with a construction start date in mid July. It is our hope that with a 300 day construction timeframe, that the 2011 Triennial Field Day will be held at the new SWCRS.

You will find in this issue, an introduction to our newest member of the Corona research team and a summary of a biofuel project completed last year. Dr. Eric Scholljegerdes moved into his office a little over a month ago and has hit the ground running. He and a few graduate students spent the last week on the ranch helping us AI around 100 head, gather and distribute bulls, then brand all the calves before the end of the week. We had a great time during the week with many a discussion including management of the herd, research ideas and plans, and teasing everyone in proximity. The topic of alternative energy seems to come up in almost every conversation. Two years ago, a cooperative study was initiated to study alternate methods of estimating juniper biomass. A small plane (large ultra light) took aerial photos of the ranch, then we brought in a crew to harvest trees that had been measured from the ground, photographed and analyzed with a computer, and then chipped and weighed to develop a formula for estimating biomass reliably. The best estimate was largest diameter of clumps of trees measured on the ground or by plane. This study may be very important to future biomass electric generation plants as they plan harvest acres and contract with land owners for a steady supply of juniper biomass.

In closing, I would like to invite you to visit the ranch during our Half Day of College program on June 10th. Information on times and topics are located on the back of this page. Please know that you are always welcome to visit us throughout the year. Please contact me when you're in the area at (575)849-1015 or email me at shadcox@nmsu.edu.

Shad

THE CRLRC WELCOMES DR. ERIC SCHOLLJEGERDES TO THE TEAM



Eric Scholljegerdes, Ph.D.
Ruminant Nutritionist

In April of this year the Department of Animal and Range Sciences welcomed Dr. Eric Scholljegerdes (pronounced Scholl-a-gerdes) to the faculty. Dr. Scholljegerdes took over the

Range Ruminant Nutritionist position formerly held by Dr. Mark Petersen. Dr. Scholljegerdes grew up in Missouri where he received his bachelor's degree from the University of Missouri in Animal Science. After that Eric moved to Laramie, Wyoming where he received his Master's and Doctoral degrees from the University of Wyoming in Animal Science with an emphasis in Ruminant Nutrition in 2005. After graduation, he took a position as a Research Animal Scientist with the USDA-ARS Northern Great Plains Research Laboratory in Mandan, North Dakota.

"Research has always been a passion of mine, even as a young kid" says Scholljegerdes. His research career started out investigating the impact restricted intake had on amino acid supply

to the small intestine of beef cattle. This work allowed researchers to develop a better understanding of how to balance supplements for cattle experiencing feed deprivation during droughts or severe blizzards. From that work, Dr. Scholljegerdes shifted his focus over to supplemental fats and their impact on reproduction in beef cows. Scholljegerdes notes, "We know that there are certain fatty acids essential for reproductive function but what we don't know is how tissues specific to reproduction utilize these fatty acids". Therefore a good deal of his work thus far has focused on the impact oilseeds have on not only growth performance of lactating beef cows but their conception to artificial insemination. In addition to nutrition-reproduction work, Dr. Scholljegerdes has worked with strategic supplementation strategies to improve the efficiency at which grazing steers gain body weight. Thus far he has determined that feeding a moderate level of fat to yearlings during the summer will reduce forage intake and improve average daily gain, which may prove useful in years where forage avail-

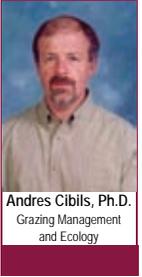
ability is limited.

Dr. Scholljegerdes plans to continue looking for ways to improve the efficiency at which beef can be produced in the extensive rangeland systems of New Mexico. Although, Dr. Scholljegerdes is located on campus and will be teaching upper level animal science courses the majority of his work will be conducted here at the Corona Range and Livestock Research Center. His research goals are to not only increase the performance of beef cows but by improving the nutrition the beef cow during key times of gestation he hopes to also improve the health and growth performance of the offspring.

Eric and his wife Bridget and daughter Ellie are excited to be living in New Mexico and are looking forward to the climate and new culture. "We are probably most excited for the climate change from North Dakota", jokes Eric.

Eric Scholljegerdes can be contacted directly at (505)646-1750 or email: ejs@nmsu.edu.

PREDICTING JUNIPER BIO-FUEL YIELD USING VERY LARGE SCALE AERIAL (VLSA) IMAGERY



Increased interest in juniper biomass as a source of bio-fuel to generate energy requires information on standing harvestable bio-fuel amounts. To address this issue, a pilot study was conducted at CRLRC to find out whether one seed juniper (*J. monosperma*) chip yield can be predicted with reasonable accuracy using tree-crown dimensions measured on the ground or derived from VLSA imagery.

Geo-coded, nested and simultaneous, aerial images with a 2-camera system mounted on a light sport airplane were acquired in September 2007. The images have very high resolution which allowed us to clearly identify individual trees or tree clumps. Flights covered the entire Corona Ranch and images were captured at 1,314 target locations along approximately 150 miles of flight lines at an altitude of 100 m above ground level.

Fifty-seven individual trees from a 0.10 ha plot and 17 tree clumps (72 individual trees) from a neighboring VLSA surveyed

site were harvested in January 2009. A timber extractor and a horizontal grinder with a 10 cm screen were used to harvest and grind individual trees. Chips from each tree were collected and a green weight was determined. Random grab samples were taken from each tree to determine dry matter content of chips which was 67.1 %.

Crown and stem dimensions of all harvested individual trees and tree clumps had been measured in the fall prior to the harvest by a team of foresters. Overall, tree or tree-clump dimensions measured in the field or derived from VLSA images were very good predictors of aboveground dry chip yield of juniper trees. The correlation between on-the-ground and image-derived data was very high. Image-derived measurements, however, were slightly better predictors of chip yield than on-the-ground measurements. Longest tree-clump diameter (easily obtained from VLSA images) was the best predictor of tree clump chip yield. Close to 95% of the variation in chip yield in this pilot study was explained by the longest tree-clump measurement, which means that the ability to predict juniper bio-fuel yield from VLSA



images appears to be very high.

We hope to conduct further measurements involving other ecological sites and soil types to validate our predictive equations. This pilot study was made possible through a collaborative agreement that involved NMSU, BLM, USDA-ARS High Plains Grasslands Research Station, NM Forest and Watershed Restoration Institute, and Ranch Resource Management LLC.

For more information contact your county extension office or Andres Cibils directly at (505)646-4342 or email: acibils@nmsu.edu.

For more information or directions to the CRLRC contact:

Shad Cox — Ranch Manager
CRLRC
P.O. Box 392
Corona, NM 88318
(575)849-1015 Office
(575)849-1021 Fax
E-mail: shadcox@nmsu.edu

Directions to CRLRC Headquarters: Turn east off of Hwy 54 (north edge of town) at the Field Day sign. Follow county road (thru underpass) for 8 miles. Road ends at gate.

Map and Directions available for download and printing on our website at <http://Corona.nmsu.edu>, click on Maps on right-hand side of page.

Half Day of College



Thursday, June 10, 2010

Registration at 9:00 am

Introduction at 9:30 am

Classes begin at 10:00 am

Three Concurrent Sessions

Solar & Wind Energy For the Landowner—Options, Costs, & Return
By-product Feedstuffs—Nutrition, Costs, & Concerns
Animal Health—Trichomoniasis (Trich)

Our website address is: <http://corona.nmsu.edu>

P.O. Box 392
934 County Line Road
Corona, NM 88318

Please feel free to contact us with any comments or suggestions regarding format and content of this newsletter. If you would like to help cut printing expenses and receive this newsletter via email, or if you would like us to add you, a neighbor or friend to our mailing list please call (505)849-1015 or email: corona@nmsu.edu

