May2013

Fort Keogh Researcher

In cooperation with

Inside this issue:

Introduction	*1-2*
Removing Russian Olive along the Yellowstone River on Fort Keogh	*3-4*
Visiting Scientist	*5*
Activities	*6*
Recent Publications	*6-7*
Retirement	7
Assistant's Corner	*7*
Hoofin' it for Hunger	*8*

Introduction

Dr. Mark Petersen, Research Leader

Greetings from Fort Keogh. Hope this newsletter finds you under a rain cloud. We were nearly 90% of normal for April receiving 1.2 inches and during the weekend of the Bucking Horse Sale we received approximately 2 inches. This May moisture certainly improves our outlook. I have not been out to see if the reservoirs have accumulated any water. Now it looks like we will make some grass. We culled last fall heavier than normal to reduce our numbers in anticipation of a dry 2013. The uncertainty of moisture adds to the justification for our new 5 year research plans implemented January 2013. Both the Beef Cattle and Range projects address research evaluating more grazing and less feeding on heifer success, subsequent cow longevity, supplementation strategies, native forage responses and their impacts on optimization, efficiency and sustainability. The Range project has a strong emphasis on the impacts of sequential drought and interaction with grazing. We are pleased with the new objectives and look forward to sharing the results with you.

One of the themes, that has monopolized the news recently, is the federal budget. The decisions on how to manage the budget have changed how we operate. In 2010, our Fort Keogh budget allotted approximately 60% of the funds to personnel services, which is total salaries and benefits. After changes (in the last 3 years) in appropriated funds, increases in costs (such as fuel and purchased feed etc.) and salary raises for deserving employees we find that personnel services now makes up 76% of our budget. Unfortunately the remaining 24% (not personnel services) of our budget is not enough to pay for the expenses to fully operate our facilities and Ag operations. In order to balance our budget we abolished an open position. The open position was the Quantitative Geneticist (previously held by Dr Mike MacNeil-retired). Fortunately, Fort Keogh's livestock operations has improved strategic marketing of livestock either by better timing of the market, adding value to the animals sold, or changing our potential market which has lead to improvements in livestock income to slightly offset some of the federal fund reductions. It is important for our beef cattle research program to have a complete complement of scientists so we will be looking for ways to reinstate the genetic scientist in the future.

When you received your fall 2012 newsletter, we were preparing to co-sponsor, with the Society for Range Management, a "Recovery After Wildfire" symposium. The symposium resulted in an opportunity for some of the science we know about fire effects to be presented and understood to a wide audience. Ranchers that had experienced wildfire and several government agencies such as the Forest Service, BLM, NRCS and MT

Introduction (continued)

DNRC shared their perspectives. There were over 100 participants in attendance that took part in a number of formal and side conversations about fire and its effects. We are planning a summer Fire Tour in South Eastern Montana as requested by participants at the symposium. The details of the tour will be distributed. As a result of this interest, our Fire Ecology Scientist, Lance Vermeire, will be conducting research in collaboration with the Forest Service in the recently burned areas of the North Dakota National Grasslands. The Forest Service provided Lance with a $60,000 grant to conduct his research. Hopefully he will be able to set up a similar experiment in SE Montana.

Other news from the Fort includes that the new 5 year projects have been implemented starting in the fall of 2012. We are very pleased with the studies designed. One of the new studies is a collaborative effort with the NRCS and the 5 State Missouri Watershed coalition. An article on page 3 describes the work being pursued. The basic tenet is that Fort Keogh has an extensive Russian Olive invasion along the Yellowstone River that has diminished grazing. When we remove the trees, how do we best (low cost and effective) rehabilitate the land, inhibit a weed invasion, and return it to useful habitat.

We will miss Dr. Matt Cronin (University of Alaska) who was on a sabbatical at Fort Keogh for a year. He worked closely with our genetic/genomics group evaluating the ancestry of Polar bears and bison though genetic relationships to establish what unique genetic populations exists. He was a pleasure to have at the Fort. Dr. Travis Mulliniks was a PhD (NMSU) student who completed his work with Andy Roberts and myself is on the faculty in the Animal Science Department as a Beef Cattle Nutritionist at University of Tennessee. Morgan Russell (NDSU) is finishing her PhD work with Lance Vermeire (we anticipate she will be gainfully employed by next winter) and we have a visiting doctoral student from Oregon State University Merilynn (Hirsch) Schantz who will be returning to Oregon sometime this summer, and an undergraduate student Drew Gaskill (MSU) is back working with Tom Geary. In spite of the fact that our budget cuts did not allow us to hire any summer student interns this year, we have had visitors working at the Fort and enhancing what we do.

Lastly we would like to invite you to participate in a 5k, 10K and half marathon co-sponsored with the Farm Bureau as a fund raiser for the Montana Food Network. It will be held on October 13, 2013. You can register on the Farm Bureau web site http://mfbf.org/event/2012/09/hoofin-it-for-hunger/.

Please call to set up a visit us for your group (406-874-8200). It is a good method for us to visit with everyone about the work we do here.

Have a good summer.

Removing Russian Olive along the Yellowstone River on Fort Keogh

By Jennifer Muscha & Erin Espeland

Who would have thought that a conversation between Jennifer Muscha (Rangeland Management Specialist at Fort Keogh) and Robert Kilian (NRCS Area Range Management Specialist in Miles City) at the 2009 Montana Range Days in Miles City has now turned into a major research and demonstration project on Fort Keogh. Robert and Jennifer discussed collaborative projects for Fort Keogh and the NRCS that would benefit rangelands on Fort Keogh and also provide needed information to NRCS. Removal of Russian olive along the Yellowstone River was a high priority. If Russian olive populations continue to increase, Fort Keogh may begin to lose its cottonwood forests along the river. Approximately 8 miles of the Yellowstone River runs through the Fort Keogh boundary, and Russian olive trees are creating a dense understory beneath established cottonwoods. This understory prevents cottonwood seedlings from establishing and makes some of the most productive rangelands at Fort Keogh inaccessible to livestock. Robert approached Research Leader Mark Petersen a few weeks later with the idea and a collaborative project between the two USDA agencies in Miles City was initiated. By fall of that year, we began meetings to discuss the goals of the project. Joe Scianna (Manger/ Horticulturalist) and Roger Hybner (Research Agronomist) from the USDA-NRCS Bridger Plant Materials Center and Erin Espeland (Research Ecologist) from the USDA-ARS in Sidney, MT, also participated in designing the study.

Our first goal was to determine how Russian olive trees could be removed effectively. We started contacting people who had previously removed Russian olive to determine the most successful method for removal. We not only asked people what method they used, but also their resprout rates and what problems arose after Russian olive removal. Respondents reported resprout rates ranging from 3 to 60%, commented that the use of imazapyr resulted in "dead zones" that could not be revegetated, and by far the biggest drawback to Russian olive removal was that other weeds came in. Most respondents pointed out that follow-up treatment was required in the year following removal to control Russian olive. People who cut stumps to ground level with a tree shearer and immediately sprayed the stumps with a 3:1 ratio of basal bark oil and triclopyr had the lowest self-reported resprout rates. This was the technique we decided to use, in addition to the follow up herbicide treatment. In the fall of 2010, Fort Keogh invested in a brand new skid steer and tree shearer. We had hoped to start removing Russian olives immediately, but due to the large amount of snow that winter we did not get started until April of 2011. Fortunately, we finished cutting about 2500 trees in mid May 2011, right before the Yellowstone River flooded due to heavy rains.

Our site flooded twice that year, and because of the flooding of the plots a number of salt cedar plants germinated and established in our plots. We treated the salt cedar with herbicide in 2012. Without the flooding, we do not think salt cedar would have been an issue. Our total Russian olive resprout rate was 4% of all the trees that were cut, but many of these were root sprouts exposed by flooding. Without flooding, we suspect our resprout rate would have been less than one-half of one percent. Thus, the method we chose was extremely effective for removing Russian olive even with the flooding.

Our second goal was to determine the benefits of revegetation after Russian olive removal. Revegetation is expensive, and little research is available to show if and when this expense is justified: sometimes native communities recover without assistance. At our site, the Russian olive trees were so dense that grasses and other plants were not growing under the trees. In addition, operation of the skid steer to remove the dense understory of Russian olive trees left the ground even more bare and susceptible to weed invasion. Revegetation can prevent weed infestations under some conditions, and our experiment is designed to test if revegetation prevents weed problems after Russian olive removal. The four revegetation treatments are 1) herbaceous layer only, 2) herbaceous layer plus shrubs, 3) herbaceous layer plus trees, 4) herbaceous layer plus shrubs and trees. The fifth section of the block contains a control with Russian olive removed but no revegetation. The herbaceous treatment included a combi-

Figure 1. Russian olive invaded site, pre-removal at left, during removal at center, post-removal at right.

Removal of Russian Olive continued

nation of grass and forb species. Each of these treatments involves a different cost and labor outlay, and we will compare the treatments to determine the best practices to prevent weeds after Russian olive removal. We also included the no-revegetation treatment as the lowest-investment option in order to generate a cost-benefit analysis of revegetation vs. weed problems in recovering sites similar to Fort Keogh. We have permanent vegetation transects marked in each subplot and are also keeping track of all plant species that germinate. We counted the number of Russian olive trees cut in each block and plan to do an economic analysis on the cost of removing the Russian olive trees. We continue to count and control Russian olive resprouts and seedlings that germinate yearly.

Grasses seeded included slender wheatgrass (Elymus trachycaulus), western wheatgrass (Pascopyrum smithii), prairie cordgrass (Spartina pectinata), and switchgrass (Panicum virgatum). Forbs included yarrow (Achillea millefolium), dotted blazing star (Liatris punctata), prairie coneflower (Ratibida columnifera), Canadian milkvetch (Astragalus canadensis), prairie thermopsis (Thermopsis rhombifolia), white prairie clover (Dalea candida), purple prairie clover (Dalea purpurea), Maximilian sunflower (Helianthus maximiliani), purple coneflower (Echinacea angustifolium), and Lewis flax (Linum lewisii).Tree and shrub species are shown in Table 1.

Soil was saturated and access to the site was limited in 2011, so we delayed revegetation until spring of 2012. A 7 ft. fence funded by the NRCS and constructed by Fort Keogh, NRCS, and the Custer County Conservation District was built in the fall of 2011 to protect the trees and shrubs that would be planted the following spring from being eaten by wildlife. The National Wild Turkey Federation (NWTF) also contributed to funding the project because cottonwood trees are an important roosting habitat for turkeys. Unfortunately, 2012 was the second driest year on record for Miles City and very few seeds from the herbaceous revegetation treatment germinated. We are following standard revegetation guidelines and are waiting for year three after seeding to determine the success of the herbaceous revegetation. Transplanted trees and shrubs were censused this spring, with 784 plants successfully established (Table 1). This experiment has provided the basis for additional collaborations to scientifically inform restoration practice and rangeland management. Transplantation of cottonwood trees is expensive and it is important that these plantings are successful. As shown in Table 1, we had very poor establishment of cottonwood trees in our revegetation experiment. Does growth of the transplant prior to planting affect survivorship? To answer this question, we planted 90 cottonwood trees along the riverbank at Fort Keogh in 2011. The cottonwood trees were started from seed collected at Fort Keogh and germinated at the Bridger Plant Materials Center (NRCS). They were grown in 3 different tubular container sizes – 10", 24", 36" – and the container size determined the depth to which cottonwood roots could grow in the pots prior to being transplanted. One-year survivorship of cottonwood seedlings from 10" pots was the lowest at 66.7%. The cottonwood seedlings grown in 24" and 36" pots both had high survival rates of 96.7%.

Another collaboration is with the Missouri River Watershed Coalition (MRWC) who received a large grant to study Russian olive removal. They chose Fort Keogh as one of their research sites, in part because of our ongoing project begun in 2009. The MRWC removed Russian olive trees in the fall of 2012 at two sites (28 acres) on Fort Keogh as well as at sites in Hardin MT, Lovell WY, and Sturgis SD. These sites have not received revegetation treatments, and we will follow the recovery of understory vegetation to determine how much the flood year of 2011 affected the changed plant community after Russian olive removal in our 2010 removal experiment at Fort Keogh. We can also see if the location of Russian olive removal (MT, WY, or SD) affects susceptibility to weed infestation or ability of the site to recover naturally. Incorporation of MRWC sites into our study allows us to give better information to stakeholders across the northern Great Plains regarding the costs and benefits of removing Russian olive.

All of our collaborators have invested significant funds and labor into this project. Without everyone's time and effort it would not have been possible. This study provides a perfect platform to study long-term effects of revegetation and how disturbances such as invasive species and their removal affect landscape functioning. We consider this a long-term research project that we will evaluate for a number of years in the future.

Table 1. Planted tree and shrub species with total number successfully established at our experimental site one year after planting.

Common name	Scientific name	Number established
Wood's rose	*Rosa woodsii*	282
silver buffaloberry	*Shepherdia argentea*	104
golden currant	*Ribes aureum*	174
chokecherry	*Prunus virginiana*	70
plains cottonwood	*Populus deltoides*	7
narrow leaf cottonwood	*Populus angustifolia*	2
green ash	*Fraxinus pennsylvanica*	120
box elder	*Acer negundo*	25

Visiting Scientist

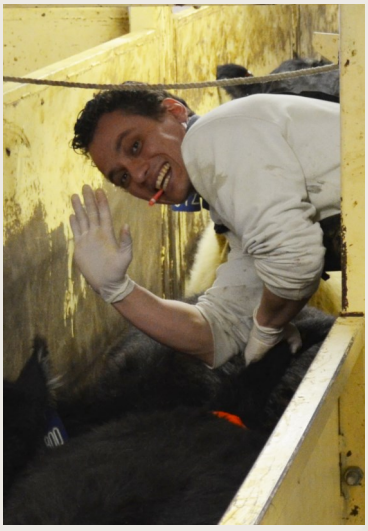
On December 26, 2012, Thiago Martins stepped on a plane in Sao Paulo, Brazil where it was 92°F and stepped off a plane in Billings 22 h later where the temperature was 16°F into an environment he had never seen before. After a stop for long johns, Muck boots, and Carharts, it was off to a life at Fort Keogh for the next six months to work with Tom Geary and Crystal Madsen conducting research in reproduction.

Thiago is a 29 year old native of Sao Paulo and attended grade school and high school in the city of more than 11 million (metropolitan area > 20 million) people. He attended the national university system (Universidade Estadual Paulista Júlio de Mesquita Filho; UNESP) in Aracatuba, Brazil and graduated in 2007 with a degree in Veterinary Medicine. He entered a residency program within the Veterinary Diagnostic Lab at UNESP in Botucatu, Brazil after obtaining his degree and was attending an extension course in the Fall of 2008 when he met Dr. José Luiz Moraes Vasconcelos. Dr. Vasconcelos is a scientist at UNESP, Botucatu. The two started to work together on some projects in animal reproduction with the goal of improving reproductive efficiency in Bos indicus (Nelore) cattle using artificial insemination (AI). Nelore heifers usually don't reach puberty and get exposed to breeding until they are 2 years old and it is not uncommon for Nelore cows to fail to rebreed each year. Thus, estrous synchronization protocols that induce puberty or cyclicity after calving are more valuable to beef production in Brazil than in the United States. In mid-2009, Thiago began a Master of Science program with Dr. Vasconcelos. His Master's degree focused on effects of progesterone concentration, length of proestrus and follicle diameter on conception rate of Nellore heifers inseminated after estrous detection or submitted to timed AI. Thiago met Dr. Geary in Brazil when he was a speaker at an annual meeting organized by Dr. Vasconcelos in March 2011. This was Dr. Geary's second trip to Brazil and because his first Brazilian student (Fernanda Abreu) turned out to be such a success, Geary was interested in bringing back another student. However funding limitations prevented Thiago from coming to Montana until this past December. In the meantime, Thiago completed his Master's Degree in November 2011 and continued to work with Dr. Vasconcelos until funding became available for him to come to Montana.

Thiago's mother and father still live in the house where he was raised. His two sisters are now both married, but still live in Sao Paulo with their families. Thiago communicates in Portuguese with his family regularly via Skype. He is the first of his family to ever travel outside of South America.

Compared to Montana, Brazil has just one season, summer, with or without rain. He has adapted well to the colder environment (and snow) here and each time we have a nice day, asks if winter is over. We tell him that we will probably still have a snow storm or two in May, but he finds that hard to believe. Thiago has even braved the snow and went skiing at Red Lodge with the junior high class of Sacred Heart School in early March. He may miss snowfall in May though as he is going to travel to the University of Missouri to work on research projects with graduate student Ky Pohler, and Drs. Mike Smith and Peter Sutovsky.

Here at Fort Keogh, Thiago has been a huge help with an NIH funded project in heifers aimed at identifying genetic markers associated with fertility, collecting blood samples associated with various projects, evaluating bull fertility for the annual Line One Bull Sale and upcoming breeding season, and perfecting an ovum pick up procedure in cows that will allow research on variables affecting oocyte viability and quality. He is extremely gifted with ultrasonography and ovum pick up. Our lab is trying to develop this technique to enable us to better characterize some of the factors affecting fertility. Before Thiago can apply for graduate school in the United States, he has to pass an English proficiency exam (TOEFL) and score well on the GRE exam. He plans to take both exams during the next two months in between helping with research at Missouri and here at Fort Keogh. He is working on a grant proposal to the Brazilian Government to pursue a PhD in the United States with Drs. Smith and Geary. Thiago will have to return to Brazil in mid-July because of his visa and wait to hear on the grant proposal.



Fort Keogh Outreach Activities

April 30,2013: Lance Vermeire and graduate student, Morgan Russell, went to Sheridan College and talked about fire at this semester's Natural Resource Lecture. Lance's talk was titled "Fire Research and How to Respond this Year" and Morgan spoke on "History of Fire in the Northern Great Plains." There was a total of 87 in attendance including 15 college and 2 high school students.

April 19, 2013: Kurt Reinhart was invited to the Graduate Careers Awareness and Trends Day at the University of Alabama, Birmingham, AL, to speak about careers in ARS, specifically opportunities in Ecology.

April 2013: Ben Rice, Montana State University student, worked with Diona on updating the road map using GIS for his semester project. He remapped over 200 miles of roads.

April 3, 2013: Matt Rinella gave a talk 'Shrub restoration research update' at the Spring Creek Mine, Decker, MT.

April 1, 2013: Andy Roberts talked with 6 students from MCC on the Grow Safe project.

March 4, 2013: Bill Almy, area rancher, came in and discussed grazing in drought with Mark Petersen and Richard Waterman.

March 2013: Jaclyn Ketchum, a student at Ekalaka High school and an intern at Fort Keogh working with Dr. Tom Geary and Dr. Andy Roberts, participated in a science fair competition in Billings, Montana. She presented a talk titled: and took first place. She received a cash prize, a trip to ISEF in Phoenix, Arizona, and a $1000 scholarship to Montana State University.

February 21, 2013: Roundtable with producers – Mark Petersen

February 2013: Dustin Strong gave a talk to the Miles City Rotary Club titled: Fire Research on Rangelands

February 13, 2013: Lance Vermeire presented "Fire ecology and fire-grazing interactions in the northern Great Plains" at the Dakota Prairie Grasslands Grazing Association Meeting held at Comfort Inn in Bismarck, ND.

February 13, 2013: Matt Rinella gave a talk 'Using large datasets to estimate biological parameters' at the Plant Sciences Department, University of Sacramento, California.

February 11, 2013: Matt Rinella gave a talk 'Prescribed Grazing, Herbicide, and Seeding Effects on Invaded Grasslands of the Northern Great Plains' at the Plant Sciences Department, University of Sacramento, California.

January 7-11, 2013: Mark Petersen presented at the Ag Winter Series January 7th-11th

December 7, 2012: Held an open house with tours.

December 1, 2012: Mark discussed feed alternatives for drought with Bighorn Grazing Association.

November 30, 2012: Mark Presentation South Eastern Livestock Association meeting

Nov. 15, 2012: Morgan Russell hosted the Ag class from Miles Community College for a discussion on fire management. She also took them to tour the plots where they have burned.

Fort Keogh Current Publications

Atkins, J.A., Smith, M.F., MacNeil, M.D., Jinks, E.M., Abreu, F.M., Alexander, L.J., Geary, T.W. 2012. Pregnancy establishment and maintenance in cattle. Journal of Animal Science 91:722-733.

Cronin, M.A., MacNeil, M.D., Vu, N., Leesburg, V,.L.R., Blackburn, H.D., Derr, J. 2013. Genetic variation in bison (bison bison) subspecies and cattle (Box Taurus) breeds and subspecies. Journal of Heredity doi:10.1093/jhered/est030.

Endecott, R.L., Funston, R.L., Mulliniks, J.T., Roberts, A.J. 2012. Implications of beef heifer development systems and lifetime productivity. Journal of Animal Science 91:1329-1335.

Fouts, D.E., Szpakowski, S., Purushe, J., Torralba, M., Waterman, R.C., Macneil, M.D., Alexander, L.J., Nelson, K.E. 2012. Next generation sequencing to define prokaryotic and fungal diversity in the bovine rumen. PLoS One. 7(11):e48289

Jinks, E.M., Smith, M.F., Atkins, J.A., Pohler, K.G., Perry, G.A., MacNeil, M.G., Roberts, A.J., Waterman, R.C., Alexander, L.J., Geary, T.W. 2013. Preovulatory estradiol and the establishment and maintenance of pregnancy in suckled beef cows. Journal of Animal Science 91:1176-1185.

Mulliniks, J.T., Hawkins, D.E., Kane, K.K., Cox, S.H., Torrell, C.A., Scholljegerdes, E.J., Petersen, M.K. 2013. Metabolizable protein supply while grazing dormant winter forage during heifer development alters pregnancy and subsequent in-

herd retention rate. Journal of Animal Science 91:1409-1416.

Reinhart, K.O. 2012. The organization of plant communities: negative plant-soil feedbacks and semiarid grasslands. Ecology 93(11):2377-2385.

Reinhart, K.O., Johnson, D., Clay, K. 2012. Conspecific plant-soil feedbacks of temperate tree

Retirement

Rod Stieg
HVAC Maintenance Specialist

Rod Stieg, Heating, Ventilation, and Air Conditioning Specialist, retired in December after 25 years of federal service. Rod was responsible for all the maintenance and upkeep of the main office and laboratory building inside and out and did a wonderful job. We will surely miss him though he will be back occasionally to help out until a replacement can be hired. Rod and his wife will be traveling around the US with their fifth wheel trailer and finding new adventures along with hanging out with family and friends.

Assistant's Corner
By Brad Eik

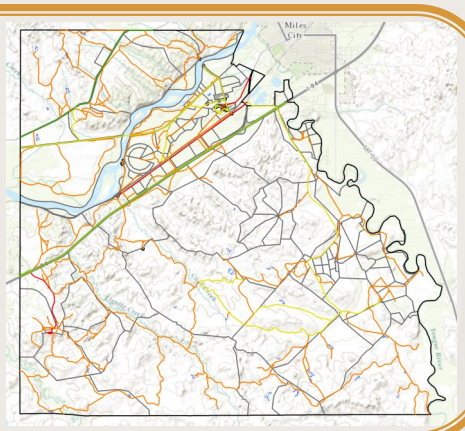
Well , here we are again at the close of Bucking Horse Sale weekend and watching some beautiful needed rain come down! Greetings from For t Keogh I hope everyone has had a good calving season and are getting some of this moisture for your pastures and hay land. We are just finishing up with a few head of cows left to calve and have branded up everything born so far. We are in the process of prebreeding all the cow herds and trying to wait as long as we can to turn pairs out on native range to give things a chance to come back from that dry summer last year. The drought was terrible on our native range and pastures, however, the dry warm weather was great for our irrigated hay land as we had one of the best hay years we've had in a long time . We averaged 6 ton/acre on most of the fields and a little better on some others. We did sell two of our cow herds last fall to try and prepare for this summer possibly being as dry as last. Our Season Of Calving (SOC) cow's project had basically come to an end and we dispersed them last December. They were in great condition and sold very well at MCLC. Our production sale in March was mediocre at best . We weren't sure if it was due to the droughty spring we had and the uncertainty of everything or due to the change of sale dates this year to a Wednesday after the regular cattle sale may have effected it also. We averaged around $2,100.00 on 34 head of bulls which was down quite a ways from our $4,002.00 average a year ago. We did, on a positive note, sell more bulls to local producers than we ever have so that was a positive for us. We would like to thank everyone that bought a bull and came to the sale we appreciate the support for our program greatly.

We have begun the third year of our fly control study putting out mineral with IGR starting in April and we will put fly tags in this summer. We are hoping to have some good results to share with everyone this fall.

We do have a number of CGC composite bulls for sale private treaty if you find yourselves needing a bull come take a look. These boys look great! You won't be disappointed. With that I hope everyone is having a good spring and enjoying nice weather. As always, if there is anything I can do to help your programs, please give me a call, I am glad to do so. Thanks for your time and take care

Brad A. Eik
Ranch Manager
Phone: 406-874-8226
Cell: 406-853-2635

Thanks goes out to Ben Rice, Montana State University student from Miles City, for remapping our roads using GIS technology this spring for his semester project. Ben drove over 200 miles on Fort Keogh marking the roads with his GIS unit and provided us with a very nice set of data to update the maps we use for working our land. We wish Ben luck in his future endeavors!



USDA-ARS
Livestock and Range
Research Laboratory
243 Fort Keogh Road
Miles City, MT 59301-4016
http://www.ars.usda.gov/npa/ftkeogh

If you have email and would rather
Receive this newsletter as a .pdf file,
send an email to:
Fort.Keogh@ars.usda.gov

,

Hoofin' it for Hunger Fun Run

Planning is underway with the Montana Farm Bureau Young Ranchers for the next Hoofin' it for Hunger Fun Run on October 13, 2013, to be held at the Fort Keogh Livestock and Range Research Laboratory at Miles City, Montana. This year we will include a 1/2 Marathon, 10K, 5K, and a 1 & 2 mile fun run. The long runs will be over dirt roads and trails, so preparation is a must! The registration form is available at http://mfbf.org/event/2012/09/hoofin-it-for-hunger/.

Save the date!

October 13, 2013