

NGPR Triangle established to facilitate data on rangeland management



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By **MATT MULLALLY** Farm & Ranch Guide

MANDAN, N.D. – What do you do with over 200 site years of grassland and livestock production data?

How about compile it, interpret it and see how this historical information can benefit future livestock producers and agriculture, in general?

That's what scientists at the Northern Great Plains Research Laboratory in Mandan along with the High Plains Grasslands Research Station at Cheyenne, Wyo., and Ft. Koegh Livestock and Range Research Laboratory in Miles City, Mont., are doing.

The three have partnered to form the Northern Great Plains Research Triangle. Its goal is to facilitate research on rangeland management.

Matt Sanderson, director of the NGPRL, said after visiting with colleagues Justin Derner in Cheyenne and Mark Peterson at Miles City, it was discovered the three research centers do carry out similar research and have some fairly long term data sets from different grazing trials.

"Mandan probably has the longest (data sets)," Sanderson said. "We have grazing trials in place, in various forms, since 1916 on part of our south pastures."

Over the years the land sizes have been trimmed down, but to this day, they are still grazing two of the same pastures the very same that it has been grazed since 1916.

Cheyenne has a couple of sets of grazing trials that have been going for about 30 years. Miles City's research is not as extensive, but it does have an interesting component.

"The unique aspect about Miles City is that they have have a very genetically-uniformed set of Hereford cattle that they have had grazing on their experiment," Sanderson said. "It helps us kind of tease out some information that's purely related to grazing."

Add it up and that's close to 200 site years of data on grazing livestock on somewhat similar rangelands. All three are situated on Great Plains mixed grass prairie.

"We have all the livestock information and forage and vegetation information and we also have the same long term weather records," Sanderson said. "Initially, what we are exploring is what is the relationship between changes in

climate or changes in weather over the long term and what has been the associated changes in livestock performance and other similar relationships.”

The goal is determining a close relationship with weather patterns within a year or cross-section of years and match that up with some computer modeling. Then maybe a support tool could be created to help farmers determine their stocking rates based on weather prediction and historical rangeland data that is available.

The first step has been gathering all this information and looking at the patterns associated with the climate and livestock production, Sanderson said.

That step is well underway. Justin Reeves, research ecologist, at the Cheyenne station, has been compiling all the information. Data from Cheyenne have been entered and now data from Mandan is being added and eventually the data from Miles City.

Since there are slight differences in climate between Cheyenne and Mandan’s stations as well as some of the types of grasses on their respective rangelands, some of the findings likely will be different.

Once all the data is entered than a global analysis of all the data will be conducted, Sanderson said.

Researchers will eventually be working with a researcher in Ft. Collins, Colo., who does computer modeling of different agricultural systems, including range management.

Sanderson said gathering some of the data from Mandan’s station has been challenging. Project workers had to go through annual reports as far back as 1916 to get some of the scientist’s findings. The handwritten table of data had to be transferred to a spreadsheet and then interpreted.

The data records also indicated breaks in the grazing. As expected, there was no grazing on lands during the Dust Bowl of the 1930s. As a result there was no data collected. Sanderson said documenting those events is just as important.

Another interesting discovery was when regular rainfall did return in the 1940s, there was a change in the vegetation. Some new grasses or plants cropped up and some native grasses, like Prairie junegrass, didn’t. Eventually, those native grasses did return in part because grazing was not conducted right away. And that allowed those grasses to take hold again.

That is a key finding which may reveal future weather events that can severely affect rangeland, may not permanently cause some species to die off for good. If the land is given the opportunity to recover, those native species can come back.

It will be a few years before all the data can be interpreted and scientists come to conclusions. For now, livestock producers have to rely on present day information and available tools to make rangeland decisions.

In the future, research conducted by the Northern Great Plains Research Triangle could provide another valuable piece of information for producers.