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Tri-Basin Topics

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Prescribed Fire Controls Eastern Redcedar

A prescribed burn was conducted on the Platte Republican Diversion (PRD) pasture west of Smithfield, NE on Monday, April 20, 2020 by Tri-Basin Natural Resources District (TBNRD), Lower Republican Natural Resources District (LRNRD) and Central Platte Rangeland Alliance (CPRA). Prescribed burns control native and non-native vegetation that encroach on rangeland prairie grasses. They help maintain the health of existing plants and add nutrients to the soil.

The goal of the burn was to reduce the number of Eastern Redcedar, and clear old grass thatch so native prairie grasses can be rejuvenated. The control of Eastern Redcedar is important in maintaining and restoring a balanced ecosystem.

Fire is a natural feature of native prairie, however as people have settled the plains, wildfires have been suppressed to protect property and life. Without natural fire, some species of plants will dominate and take over the land. The goal is to use fire to restore the native grassland.

There is a great deal of planning that goes into a controlled burn. Specialized equipment and trained people are required to safely execute a fire plan. You must have proper weather conditions and obtain a burn permit from your local fire chief to be allowed to conduct a prescribed burn.

If you drive between Smithfield and Elwood on State Highway 23, you will see a sign on the property that tells about the burn that was conducted this spring.

Since the burn the pasture has regrown and will be ready for grazing this fall. TBNRD advertised and accepted a bid for grazing from August to November 2020.

The PRD pasture is anticipated to be the site of a project that will divert water from the Platte River to Turkey Creek, a tributary to the Republican River.



Above is a drone image of the pasture just after the burn. And on the right is an image of eastern redcedar burning.



"Dedicated to Conservation of our Natural Resources"

<http://www.tribasinprd.org>



Manager's Message

by John Thorburn

Dynamic Grasslands

South-central Nebraska was a vast grassy plain before the arrival of homesteaders in the 1870s and 1880s. It wasn't necessarily the "Sea of Grass" that early Oregon-bound emigrants frequently noted in their descriptions of eastern Nebraska, because lower average annual precipitation resulted in sod-forming, low-growing Buffalo grass and Blue Grama dominating much of the table lands outside the Platte Valley. In the valley itself, tall grasses, such as Little Bluestem and Indian grass were more prominent, due to the high groundwater table. That said, these native grasslands were and still can be a mosaic of plant and animal species, soils and terrain that change continually, defying generalization.

Variations in the frequency and vigor of dozens of species of grasses and broadleaf plants produce a variety of "micro-ecotones" that provide niches for many species of wildlife, ranging from lowly dung beetles to prairie chickens and prairie dogs. Mixed-grass prairies were impacted and to a great degree shaped by grazing ungulates like bison, elk, antelope and deer. Their grazing was seasonal and sporadic, but they significantly affected the landscape because of their huge numbers. Pre-settlement bison herds numbered in the millions. Their impact was most substantial and severe in and around water sources such as streams and Rainwater Basin wetlands. These areas were frequently trampled, compacted and grazed hard, which influenced the plant species mix. Old "buffalo wallows" can still be seen in native grasslands today.

We rarely give them much thought, but invertebrates also have a strong influence on grasslands. Most grasses are wind-pollinated, but insects are the primary pollinators of most broad-leaved plants. Earthworms and other decomposers break down dead plant and animal matter into humus that fertilizes successive generations of vegetation. Insects also consume live plants. A dramatic, but often forgotten, example of insect consumers are locust swarms. Up until the mid-1870s hordes of locusts regularly passed over the plains in countless numbers, blocking out the Sun and eating everything in their paths. They were unintentionally exterminated by settlers as they plowed up river valleys, where the locusts laid their eggs in moist, sandy soils.

The weather has a strong influence on the appearance and composition of grasslands. Residents of this region know that there is no such thing as "average" rainfall on the plains. Our average annual precipitation is about 24" per year, but averages obscure the extremes of which they are composed. The climate record is riddled with examples of wild swings in rainfall from one year to the next. Reviewing weather data from Holdrege, Nebraska as an example, you will find one of the wettest years on record at this location, 1915, had 40.7" of annual precipitation. The preceding year was exceedingly dry, with just 16.3" inches of moisture. More recently we had 31.3" of precipitation at Holdrege in 2011, but just half that

amount (15.8") in 2012. Climatologists warn that global climate change could result in even more drastic variations in rainfall in the future. Such variations of moisture affect the growth rate and seed production of all plants, but some species are more resilient than others. Early or late freezes and heavy snow in winter also sporadically, but sometimes dramatically, alter grasslands.

Another significant disturbance of grasslands is fire. Fire is the "reset button" of grassland ecosystems. Fire occurs naturally as a result of lightning strikes, but it was also widely used as a tool and a weapon by both Native Americans and Euro-American settlers. Prairie fires could be truly epic events, sweeping over hundreds of square miles in a few hours, driven by howling winds. Wildfires not only changed the density and mixture of grasses and other prairie plants, they also limited the ability of trees to expand their range onto the plains. More recently, we have learned to manage and use fires to reinvigorate grasslands. Prescribed burning of grasses is an important tool of both ranchers and wildlife habitat managers.

We have transformed most of the native grassland of our region into highly productive cropland, capable of feeding both our own citizens and much of the rest of the world. This is a beneficial and necessary change, but this massive alteration of land use has disrupted or eliminated many of the natural disturbance mechanisms that maintained a dynamic equilibrium in grassland ecosystems. Grasslands need regular disturbance from a variety of causes to be dynamic and healthy. Leaving them undisturbed is unnatural and harmful to them and to the animals that call them home.



Tri-Basin NRD Summer Interns

Tri-Basin NRD's 2020 summer interns from left to right: Luke McKeon, Grant Edgecombe and Zach Temple

Tri-Basin NRD has hired three interns to work out of the district office this summer: Grant Edgecombe, Luke McKeown and Zach Temple.

This is Luke's first year with TBNRD. He is from Odessa and attends the University of Nebraska-Lincoln, majoring in Natural Resource Conservation and Environmental Economics. He participates at the UNL Newman Center and serves in Nebraska Air National Guard. He enjoys camping and traveling.

Grant is from Minden and is a student at Chadron State College, where he is studying Rangeland Wildlife Management. He is a member of the Chadron State College Wildlife Club. His interests include hunting waterfowl and playing golf. This is Grant's second summer as a TBNRD intern.

Zach is studying agronomy and history at the University of Nebraska-Lincoln, where he is a member of Alpha Gamma Rho Fraternity. As a Holdrege native he serves on the Phelps County 4-H Council and attends Trinity Evangelical Free Church. He enjoys sports, shooting sports, and NAS-CAR. This is Zach's third summer as a TBNRD intern.



Tri-Basin NRD has been employing interns during the summer for 22 years. The district's internships give college students an opportunity to gain natural resources conservation experience. Interns collect and test groundwater quality samples, monitor wildlife habitat, test irrigation system efficiency, and help maintain drainage improvement project areas (IPAs). The interns also work with staff from Central Nebraska Public Power and Irrigation District, and the USDA Natural Resources Conservation Service.

Many of the district's former interns have pursued careers in agriculture and natural resources, taking jobs with agribusinesses, NRDs, NRCS and various state agencies. Dalton Refior, TBNRD's current Land Resources Technician, spent three summers working as a district intern.

Two Directors Appointed by Board

Two members of TBNRD Board of Directors, David Olsen and Greg Jorgensen, recently resigned. The board advertised the openings, reviewed applicants and voted to appoint two new members. Jeff Ryan of Heartwell filled the Director At Large position and David Grimes of Minden will serve Sub-District 6 in Kearney and Phelps counties.



Jeff Ryan

Jeff is a graduate of Minden HS and the University of Notre Dame with a degree in biology. He is a member of the Nebraska Corn Growers Association and has served on the board as well as the Kearney/Franklin County Corn Growers former president. He farms North of Heartwell and is the 4th generation on the family homestead. He and his wife Laura have three children. He enjoys golfing, reading and spending time at the lake. Jeff understands the importance of water and maintaining our current levels, not only for our generation but for generations to come.

David and his wife Becky live near Minden where he farms with one of his son's. All four of their children are grown and married. He serves on the Nebraska Farm Bureau Board and is a member of Minden Rotary, Ag Builders and Nebraska LEAD Alumni. Dave is a graduate of Lincoln Northeast High

School and the University of Nebraska-Lincoln with a degree in Ag Economics. He likes old tractors, traveling and family activities.



David Grimes



Tri-Basin Topics

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RETURN SERVICE REQUESTED

Nebraska's NRDs: Protecting Lives, Protecting Property, Protecting the Future

August 11NRD Board Meeting and Tour, 1:30 p.m.
Blue Moose, Bertrand, NE
August 28-September 7 Nebraska State Fair
September 7NRD Closed for Labor Day
September 8NRD Board Meeting, 7:30 p.m.*
September 24 Rainwater Basin Conservation Day
October 7Land Judging Contest-Southwest Area
October 9Coffee Connection
October 12 NRD Closed for Columbus Day
October 13NRD Board Meeting, 7:30 p.m.*

* Times are tentative. All meetings are at TBNRD office in Holdrege unless otherwise noted.

Bradley Lundeen, Chairman	Wilcox
Todd Garrelts, Vice Chairman	Holdrege
Robin Hinrichs, Treasurer	Axtell
Joe Bilka, Secretary	Holdrege
Brian Bergstrom	Axtell
Mike Cavanaugh	Minden
David Grimes	Minden
Ed Harris	Loomis
Phyllis Johnson	Bertrand
Joe Larson	Loomis
David Raffety	Kearney
Larry Reynolds	Lexington
Jeff Ryan	Heartwell

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Lori Hagan	Office Clerk
Sasha Hahn	Information & Education Coordinator
Nolan Little	Water Resources Manager
Carie Lynch	Administrative Secretary
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Dalton Refior	Land Resources Technician
Esther Smith	Office Assistant
John Thorburn	General Manager
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