Volume 1, Issue 1 • November 2022

Fall 2022 Newsletter

Official Newsletter of East Polk Soil and Water Conservation District

EAST POLK SOIL & WATER CONSERVATION DISTRICT

Colorado Blue Spruce and the Diseases they Face

This year the East Polk Soil and Water Conservation District has been contacted by a few landowners about sudden death of their Colorado Blue Spruce trees. Colorado Blue Spruce trees are not native to Minnesota but became very popular since their discovery in 1862. These trees are well known for their exceptional beauty and are a top ranking tree in regards to landscaping and ornamental use. They are a slow growing tree with an adaptability to many soil types. However, the species is only moderately tolerate to flooding and drought. The Colorado Blue spruce differs from other spruces in its ability to withstand wind due to its widespread and moderately deep root system, making it a popular choice for long standing windbreaks.

Colorado Blue Spruce trees are prone to Rhizosphaera Needle Cast, Cytospora Canker and Sirococcus Blight. These are fungal diseases that are especially problematic to the health and appearance of Colorado Blue Spruce. During drought and extremely wet springs like the one we had this year. Colorado Blue Spruce are more susceptible to fungal pathogens than other conifers. Due to their non-native status these trees tend to take on more stress associated with climate compared to native species. These diseases will cause needles to die. As with most conifers the needles will not grow back after being lost. New needles are only produced on spruce trees once a year on the tips of branches. As a result spruce trees with a severe needle disease often appear thin, bare or discolored. Branches that have lost needles for three to four years in a row often suffer greatly and are at risk of failure to thrive and even death. If the disease is properly identified and treated before branch damage occurs, the spruce may gradually regain its needles and appear full again.

Management

Management options that can be implemented include cultural practices such as watering during periods of drought (avoid watering the needles), mulching around the base of the tree and providing substantial space between trees to ensure good airflow. A fungicide could also be applied in the spring to protect needles.

Alternatives

If you're looking for something similar to Colorado Blue Spruce but with more disease tolerance the best alternatives would be the Norway Spruce (non-native) and White Spruce (native). These spruce trees tolerate most soil conditions and are usually drought tolerant. They have a moderate growth rate.

Inside this Issue

Special points of interest

- Fungal pathogens effects on Colorado Blue Spruce Trees
- Learn about the Glacial Ridge Prairie Core Area CISMA-Workgroup and their management strategies to combat noxious invasive weeds in the Glacial Ridge Prairie Core Area
- Red River Valley Conservation Service hired two new engineers
- Observe our 2022 annual precipitation in Polk County.
- Laura Schnapp, the new NRCS Conservation Technician for Polk County gives an update on NRCS programs

Glacial Ridge Prairie Core CISMA Workgroup

The Glacial Ridge Prairie Core Area CISMA is a collaborative group that focuses on non-native and invasive weed management within the Glacial Ridge Prairie Core Area in central Polk County. This group is made up of members from the MN DNR, Pheasants Forever, Audubon Minnesota, and local Soil and Water Conservation Districts to educate local landowners about emerging threats and provide management strategies to control existing invasive weeds to prevent further spread. Management strategies for these invasive plant species will be established by delineating priority areas, technical assessments, and best treatment and management practices.

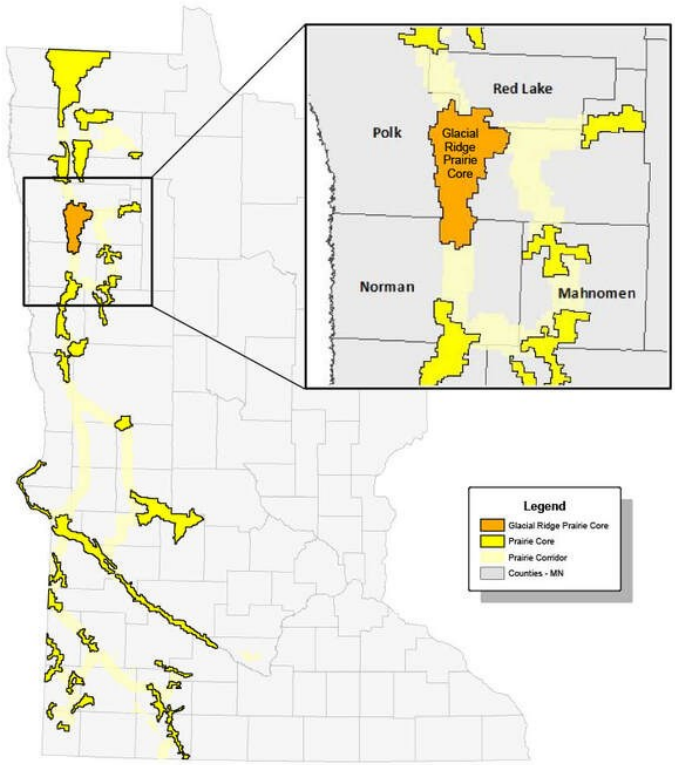
Education/Outreach:

The Glacial Ridge Prairie Core Area CISMA hosts events to benefit landowners, agencies, land managers, and communities within the Glacial Ridge Prairie Core Area. These workshops have experts present about invasive weeds to increase awareness of the impacts of invasive plant species and educate on management efforts. Workshop attendees can also participate in field visits that help landowners identify invasive plants and explain the best treatment options and management considerations for weed management.

Weed Management Plan:

The primary goal of the Glacial Ridge Prairie Core Area CISMA is to identify invasive weeds and determine best management practices to control future infestations. We try to highlight these invasive plants to landowners in the Glacial Ridge Prairie Core Area so they can prevent these weeds from spreading from their land to other properties. Currently, one of our high priorities is Wild Parsnip which is spreading in Polk County. Wild Parsnip can easily be managed in smaller populations but once the population builds up, it spreads rapidly. It has a basal rosette stage in its first year and bolts and flowers during it's second year. It reduces the quality of agricultural forage crops, can negatively impact livestock if ingested, and if the plant's sap gets on people it can cause burns and blisters as the sap reacts with UV light. As with many invasive plant species, mowing or haying when it is seeding out in late summer or early fall allows it to expand to new areas quickly. However, infestations can be prevented by early detection and herbicide use at the basal rosette stage or before seeds begin to form in August.

Glacial Ridge Prairie Core CISMA



Glacial Ridge Prairie Core Area Invasive Threats

Common Tansy *(Tanacetum vulgare)*
Common tansy is a perennial plant that forms dense cover that can outcompete native plants. It spreads by seed and underground roots. It can be toxic to cattle and horses. It can become abundant in pastures and reduce quality forage.

Spotted Knapweed *(Centaurea stoebe L. ssp. micranthos)*
Spotted knapweed is an invasive weed that is poisonous to other plants (phytotoxic) and forms dense monocultures. It especially threatens dry prairie, oak and pine barrens, dunes, and sandy ridges. It spreads rapidly along road corridors and in gravel pits, agricultural field edges, and overgrazed pastures and reduces forage quality in pastures for livestock.

Leafy Spurge *(Euphorbia esula)*
Leafy spurge is a perennial plant that grows well in sunny and partly sunny areas such as pastures, grasslands, prairies, roadsides, and railway right of ways. It greatly reduces the productivity and biodiversity of pasture and prairie land and is toxic to cattle and horses. It can grow well in a wide range of soil types from dry to moist. Plants can reproduce by seed and spread vegetatively from underground roots.

Wild Parsnip (Pastinaca sativa L.)
Wild parsnip is often described to be biennial but is classified as a monocarpic perennial (plant dies after bearing fruit). Wild Parsnip can be confused with a native wildflower called golden alexanders that blooms much earlier in the year. The differences in leaf shape are the key in telling these species apart. Leaflets are coarsely toothed and the base of the leaf stalks wrap or clasp the grooved stem.

Contact
Jenna Wiersma
Simonson, East Polk SWCD at wiersma.eastpolk@gmail.com
or
Alex Wardwell, Audubon Minnesota at alexandra.wardwell@audubon.org
if you would like help telling these two species apart.

Resources for Identification of Invasive Plants in Minnesota and how you can manage them
MN DOT Noxious Weed Guide (Includes native look-alike species for comparison.)
https://www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf (common tansy pg. 22, knapweed pg. 23, leafy spurge pg. 26, wild parsnip pg. 30,

MN State Noxious Weed List (Includes links with more info and photos)
https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list

RRVCSA Program Update

The Red River Valley Conservation Service Area was established in 1994, to provide engineering assistance for Soil and Water Conservation Districts.

Eleven joint powers groups of soil and water conservation districts were created statewide in early 1995 to employ professional engineer and technician teams. They survey and design water quality and erosion management practices such as Water and Sediment Control Basins, Grade Stabilizations and Shoreline Restorations.

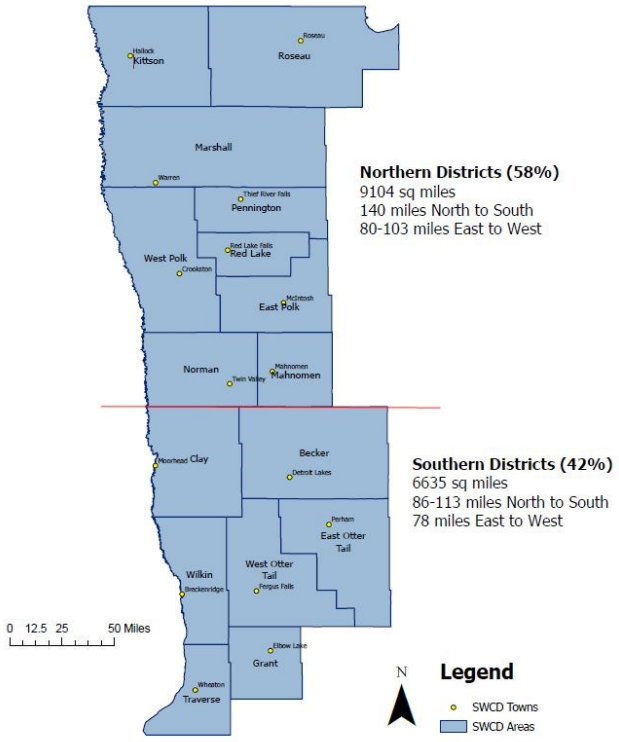
This year, the RRVCSA hired a full time engineer and a technical engineer for the northern districts in Area 1. These counties include: Norman, Mahnomen, East Polk, West Polk, Red Lake, Pennington, Marshall, Kittson, and Roseau.

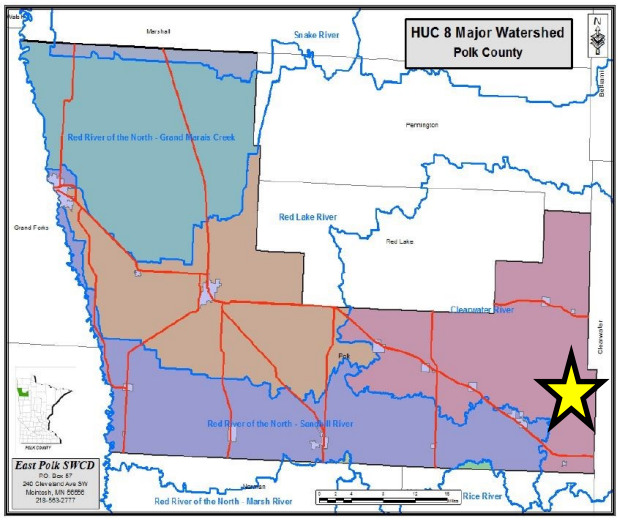
Logan Handyside joined the RRVCSA as a Professional Engineer as of June 6, 2022. Logan is a North Dakota State University Graduate where he received a degree in Bachelor of Science in Civil Engineering. His primary office location is at the Pennington SWCD office but he occasionally assists the East Polk SWCD with Water and Sediment Control Basin projects.

Justin Muller joined the RRVCSA as a Technical Engineer as of October 3rd, 2022. Before starting his career with the RRVCSA he was a Kittson County SWCD District Technician for 8 years. Justin was hired on to design and assist engineering practices for SWCD staff in the Kittson, Roseau, and Marshall county areas but will also help in other counties of the Northern District when needed. He will primarily survey and design Side Water Inlets for Kittleson, Roseau, and Marshall County.

The Clearwater One Watershed One Plan is prepared to disburse funding to the East Polk SWCD and other counties within the Clearwater Watershed next Spring, 2023. If you are interested in a Side Water Inlet or Water and Sediment Control Basin project for next year please contact Marea Gryskiewicz at 218-563-2777 or email: schommer.eastpolk@gmail.com for more information.

TSA Area 1



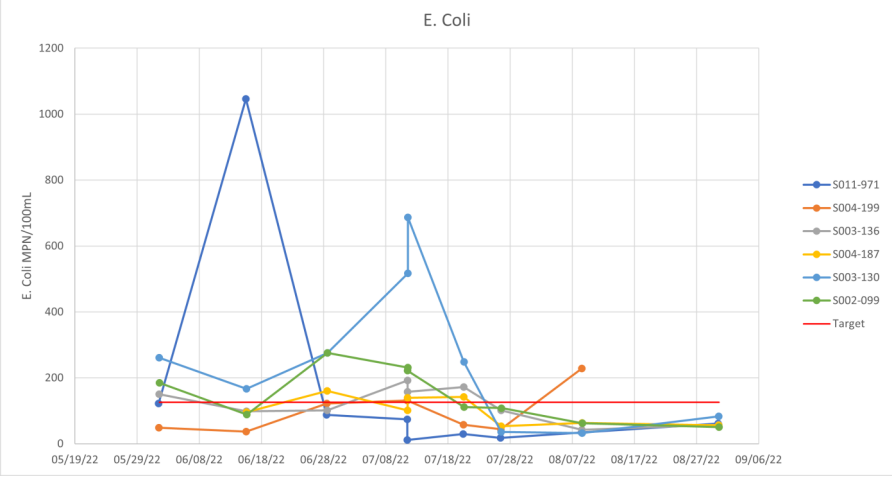


New SWAG Monitoring Program

The Minnesota Pollution Control Agency has partnered with the East Polk Soil and Water Conservation District as of this Spring, to help monitor streams within the Sandhill Watershed District. The MPCA is funding this monitoring program through the Surface Water Assessment Grant (SWAG), to help identify lakes and streams that are in need of restoration or protection strategies in Minnesota. The East Polk SWCD technicians monitor seven stream sites at the beginning, middle and end of each month from May to September to sample chemical and biological data along the Sandhill River. Parameters include: total suspended solids, phosphorus, dissolved oxygen, pH, temperature and bacteria.

Previous studies have shown that when excessive nutrients like phosphorus are available within stream waters an increase in algae is observed. High numbers of Chlorophyll-a and Total Suspended Solids are also a clear indication that algae and other harmful aquatic plants have increased in quantity.

The presence of E. coli bacteria has drastically gone down since the beginning of the summer. The Environmental Protection Agency recreational water quality standard requires that less than 126 MPN of generic E. coli per 100 ml of water. By the end of June, our lab results showed that our E. coli counts were exponentially higher than 126 MPN, meaning the water was highly contaminated and unsafe for recreational activities. Our assumption is that the water was highly contaminated due to runoff from high precipitation this Spring. E. coli counts started dropping around August-September and MPN numbers went back to normal.



Chloride and Total Hardness work hand and hand when it comes to water quality. Hard water is high in dissolved minerals, specifically calcium and magnesium. The higher the amount of minerals, the higher the hardness of water. Chloride is common in most natural waters and is most often found a component of salt or in some cases in combination with potassium or calcium. The presence of chloride in streams can result from a number of sources including weathering of soils, salt used for road de-icing and other runoff. Chloride and Total Hardness tests determine the chemical balance of the stream. Chloride and Total Hardness amounts is an indication if the water is suitable for aquatic and animal habitat and also justifies runoff potential.

2022 Precipitation Totals

MNgage is a volunteer-driven precipitation observing program that began in the late 1960's in the Twin Cities and gradually expanded across the Minnesota in the 1970's. The program is administered by the DNR Minnesota State Climatology Office. East Polk 's rainfall monitor volunteers are spread across the county in 8 different townships including Columbia, Lessor, Garfield, Queen, Knute, Woodside, Rosebud and Tilden. Volunteers monitor rainfall and snowfall events daily and then they send in their data to the East Polk Soil and Water Conservation District at the end of the month. The data gets updated on the Minnesota State Climatology website. The chart below is Polk County's annual precipitation data.

This program has been critical for observing precipitation behaviors in Polk County. Multiple organizations analyze this data for predicting future changes in our weather pattern. If you would like to volunteer for the Rainfall Monitoring program, please call Jenna Wiersma at 218-563-2777 or stop by our office at 240 SW Cleveland Ave, McIntosh, MN 56556.

- Data as received and digitized on or before 10/05/2022. **All values are in inches**.
- '*' denotes a partial monthly record, 'e' denotes that value is wholly or partially estimated.
- Prepared by: State Climatology Office - DNR Waters, phone: 651-296-4214, web: http://climate.umn.edu

2022 Monthly Precipitation Totals in Polk County, MN

TOWNSHIP	SECTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
COLUMBIA	11	.58	.77	.51	7.50	5.20	4.53	4.13	5.15	1.42			
ROSEBUD	4				7.10	4.92	3.06	2.95	5.41				
GARFIELD	29				6.56	5.08	2.32	2.58	2.18	.78			
WOODSIDE	14				7.70	3.78	3.91	1.65	1.66				
ONSTAD	4	.34	1.02	.14	7.34	5.12							
LESSOR	11	.34	.76	.23	7.43	3.89	4.30	3.29	2.27	1.13			
TILDEN	7					5.81	4.41	1.87	1.42	.66			
GENTLY	15	.22	.80	.34	6.71	3.45							
CROOKSTON (NWS)	19	.27	1.03	.25	3.42	4.48	3.15	1.78	.57	.79	*		
CROOKSTON	31				6.73								
HEGELAND	31	*		*	5.73	6.28							
County averages		.35	.88	.28	6.62	4.80	3.67	2.61	2.67	.96			
# of observations		5	5	5	10	10	7	7	7	5			

DEPARTMENT OF NATURAL RESOURCES

Minnesota State Climatology Office

NRCS Program Update

Happy harvest season Polk County producers. My name is Laura Schnapp and I'm the new District Conservationist for NRCS, covering East Polk County. I come to you with 10+ years' experience, working mostly with cattle ranchers in Oregon and Oklahoma. I am excited to be here and learn about farming and fishing in Minnesota. If given the opportunity, I would enjoy a field visit to discuss soil health, how certain management activities may decrease overall inputs, and strategies to reduce risk. While you are out tending your fields make sure to keep an eye out for resource concerns and land management opportunities.

As a reminder, the USDA-NRCS offers technical assistance for free, year-round. We also have financial assistance to address concerns through the Farm Bill. Applications are accepted year-round. Typically, the first cutoff date is early November to be considered for next year's funding for the Environmental Quality Incentive Program (EQIP). For the Conservation Stewardship Program (CSP), the first cutoff date is typically in late January. There are several other programs that folks may complete for financial assistance through-out the year.

The easiest way to stay current at the national level with program activities and deadlines is to create an account or subscribe for updates at: https://www.farmers.gov. You can sign up for email updates through the NRCS MN's website at: https://www.nrcs.usda.gov/wps/portal/nrcs/mn/home.

MN BWSR- Featured Plant of the Month

Sprengel's sedge *(carex sprenglii)*

Description: Only a small percentage of sedge species in Minnesota grow in upland forests. Sprengel's sedge is well-adapted to these conditions. Widely distributed across the state, it's common in mesic and dry forests. It also grows in savannas, floodplains, meadows and long streambanks. Cascading leaves can grow more than 2 feet long.

Uses: The ability of Sprengel's sedge to grow on rocky slopes makes it effective at stabilizing forested hillsides affected by invasive shrubs, earthworms, grazing deer and heavy rains. It is also beneficial on woodland streambanks and the side slopes of shaded biofiltration areas and rain gardens. Its clump-forming nature makes it well-suited for borders in woodland gardens. The sedge provides cover and food for small mammals and insects; it's a source of seeds for songbirds and game birds.

Sprengel's sedge Identification: Sprengel's sedge is larger than most other woodland sedges. It grows in dense clumps up to 2 feet tall. Stem bases are green and leaves are M-shaped in cross section. Flower spikes are on long, slender, drooping stalks. Male (staminate) flowers tend to be at the tip with female (pistillate) flowers in loose spikes slightly below.

For more information on the Sprengel's Sedge please visit the MN BWSR website: https://bwsr.state.mn.us/sites/default/files/2022-09/featured_plant_-_october_2022_-_sprengels_sedge.pdf

East Polk Soil and Water
Conservation District
240 Cleveland Ave
PO Box 57
McIntosh, MN 56556

Phone: 218-563-2777
www.eastpolkswcd.org

East Polk SWCD Employees

Rachel Klein
District Manager
Email:
klein.eastpolk@gmail.com

Marea Gryskiewicz
District Technician
Email:
schommer.eastpolk@gmail.com

Jenna Simonson
District Technician
Email:
wiersma.eastpolk@gmail.com

Call Us at: 218-563-2777

Visit our Website:
www.eastpolkswcd.org

East Polk Soil and Water Conservation District

Our Mission

Our purpose is to assist landowners in applying proper practices for the conservation of soil erosion, land resource planning and development, utilization and management of the waters of the area, preserving our natural areas and the fish and wildlife which inhabit them.

A Resource for Landowners

We partner with County, State and Federal assets to bring dollars back to the community for water and soil health.
We strive to build win-win scenarios for private landowners, the surrounding watersheds, and for our natural resources.

Keep the Land Productive

While protection of natural resources is our focus, we also understand that private and working lands need to be used by landowners for landowners. We promote conservation practices that provide resource production at the same time.