Volume 1, Issue 1 • November 2021

Fall 2021 Newsletter

Official Newsletter of East Polk Soil and Water Conservation District

Persistent Low Water Conditions Continue to Affect Boaters

As water levels continue to drop due to many areas of drought, boaters are experiencing significant issues with launching and retrieving boats, according to the Minnesota Department of Natural Resources.

DNR crews are repairing and extending many boat launch ramps to provide boating opportunities in these low-water conditions. However, little can be done to fix boat ramps on naturally shallow lakes or in places where power loading has caused holes that are too deep to fix with equipment.

"Boat ramps that were damaged by power loading provide not only a challenge to launching, but can also result in damage to boats, motors and trailers," said Nancy Stewart, DNR's statewide water recreation program lead. "Boaters should always use caution and check the ramp and water levels before launching."

The DNR is encouraging shoreland homeowners who have seasonally docked watercraft to monitor water levels frequently and keep their eye on the available boat removal options for their waterbody. If options are limited, boaters should consider removing their watercraft earlier than usual, before conditions worsen. Assistance may also be available from lake service providers with the capability to remove watercraft using larger commercial equipment.

Boaters also should be aware of new obstructions in the water, such as rocks, stumps and sand bars that may not typically be an issue but are now creating hazards due to low water levels.

For more information visit the MN DNR website for boat launching maps and information about power loading.

DEPARTMENT OF NATURAL RESOURCES

Inside this issue

Special points of interest

- The MN DNR is encouraging the public to monitor lake levels before launching or removing boats on the water.
- See our drought timeline in Polk County.
- Learn about the drought impacts to Polk County.
- Observe our 2021 annual precipitation in Polk County.
- Tree and shrub planting guide for conservation grade trees.
- Pick up a water test kit at the East Polk Soil and Water Conservation District.
- Discover our new employee at the East Polk Soil and Water Conservation District.

MN Drought Still Affects Northwestern MN

Due to the recent rainfall, Polk County has slowly been recovering from drought conditions. Northwestern Minnesota experienced below normal precipitation and during that time temperatures ranged 5 to 10 degrees above long term normal conditions. Since August rainfall measures have been near to above long term normal for the first time in nearly a year according to the National Weather Service.

2019 to 2020 Winter into June

2019 had been a record precipitation year for Minnesota, capping off the state's wettest decade on record. The wet conditions, however, largely ended during the 2019-20 winter, and by February, the state began the first of at least three multiple-month dry spells. February 2020 precipitation was generally less than half of normal, with smaller deficits in March, but then similarly large ones in April and May of 2020

2019 Winter

July & August 2020

Mid-summer 2020 was often quite wet, with several significant rainfall events including one "mega-rainfall" in late July. July and August together wound up among the 10 or 15 wettest on record for northwestern, western and central Minnesota.

2020 Summer

November 2020 to February 2021

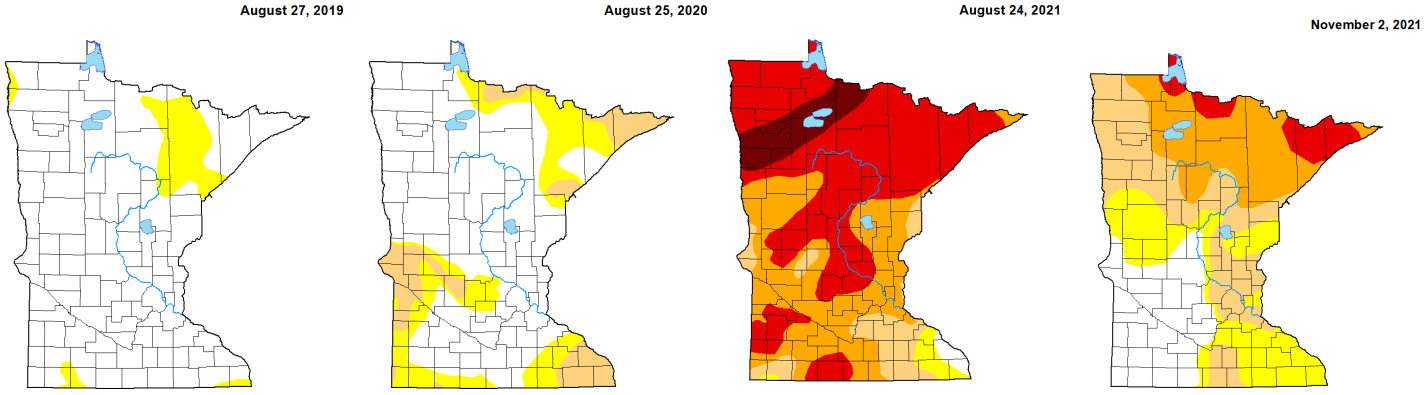
Abnormally dry conditions resumed on a statewide basis during November of 2020, when many areas received less than half of normal precipitation. Thus, began a six-month run of moderate drought conditions, during which Polk County was not in normal precipitation. After winter, Minnesota had a slightly larger long-term precipitation deficit than it had seen at the beginning of the 2021 summer.

2020 Fall / Winter

March & April, 2021

Both March and April of 2021 ended up being slightly wetter than normal on a statewide-averaged basis, but both months were uneven in their distribution of precipitation across the state. Most areas gained just enough ground against the mounting precipitation deficits during this time, that by the end of April, only about 15% of the state was in moderate drought including Polk County, and over 60% of the state was in no category on the US Drought Monitor. Minnesota's generally low coverage of drought was in jeopardy, however: through April 2021, the average Minnesota location was short 4.5 inches of precipitation, and it was clear that a prolonged period of dry, and especially warm and dry conditions, could cause drought conditions to expand and intensify rapidly in the state.

2021 Spring



Summer 2021

May to June 2021

The dry conditions resumed in May. It was one of the ten driest Mays on record throughout northern Minnesota, and the state as a whole finished 15th driest, out of 128 years according to the MN DNR. Fortunately, the temperatures were only slightly above normal. Drought conditions expanded aggressively across Minnesota during June, thanks to an early-summer heatwave, along with a continuation of very dry weather. It was Minnesota's third warmest and seventh driest June on record.

Summer 2021

July to August 2021

In July, the extremely dry weather continued, with the month finishing second driest on record on a statewide basis, and driest on record in many northern Minnesota counties. Once again, most areas received less than half of their normal precipitation that caused Polk County to go from Moderate Drought (D1) to Severe Drought (D2) on the US Monitor. July was warm also, but lacked the heat extremes the state experienced during June. By August 10th, a swath of northwestern through north-central Minnesota was designated in Exceptional Drought (D4), marking the first time any part of the state had made it to that level of drought during the 21-year history of the US Drought Monitor. By mid-August, 8% of the state was designated in Exceptional Drought, and an additional 42% of the state was in Extreme Drought, and this condition continued into the final week of August.

Fall 2021

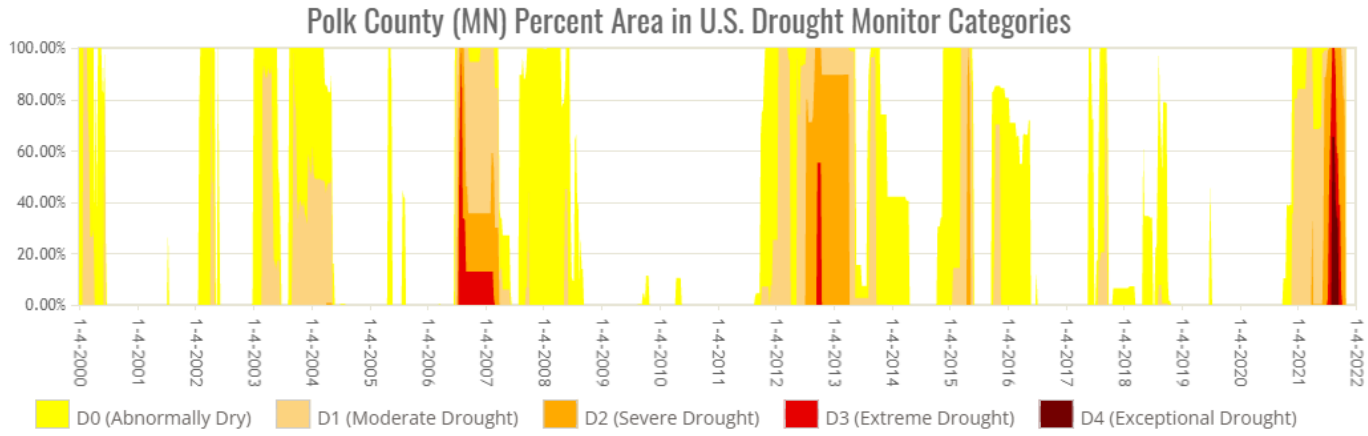
September to October 2021

September ended up finishing slightly drier than normal on a state-averaged basis, with significant shortfalls in the far southeast, and an even split between above and below-normal rainfall over the rest of the state.

A streak of very warm weather that began in late September lasted through the first half October. October precipitation through the 15th was a split, with 0.46 inches above normal precipitation totals in the northwestern half of Minnesota, but generally below normal or near normal over the southeastern half of the state.

The National Weather Service wrote a recent report stating that although drought conditions are decreasing, impacts from the past several months may persist in Polk County for water storage, forests, forage lands, and soil moil moisture levels.

For more information please visit the National Weather Service Website or The MN DNR Website.



2021 Drought Impacts

Wildfire Threat

As the temperature continues to drop and rain events increase the overall wildfire threat has decreased slightly. Nevertheless, Polk County is still showing a precipitation deficit due to the late summer and early autumn heat that continued through early October. With persistent dry conditions, Polk County is predicted to have an abnormal wildfire risk throughout the autumn season as parched grass, crops, and brush remain susceptible to fire starts until widespread snow cover takes hold.

Agricultural Impacts

As we all know, Polk County's croplands have been majorly affected by excessive drought conditions and frequent wildfires from the past summer. According to the Drought Monitor crops are in "very poor to poor condition". Topsoil moisture significantly reduced from the heat and drought which took a toll on major crops like corn and soybeans.

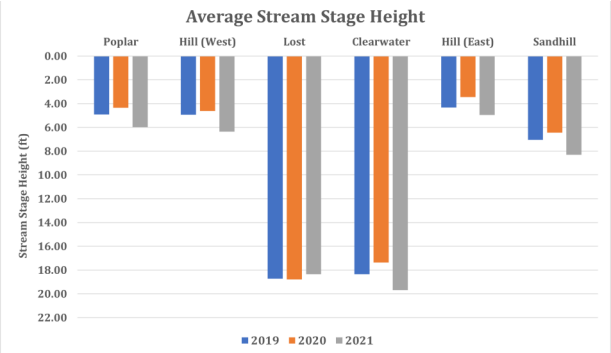


Figure 1 (above)

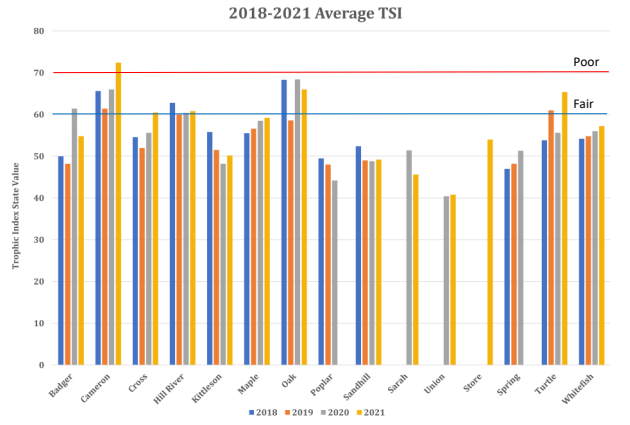
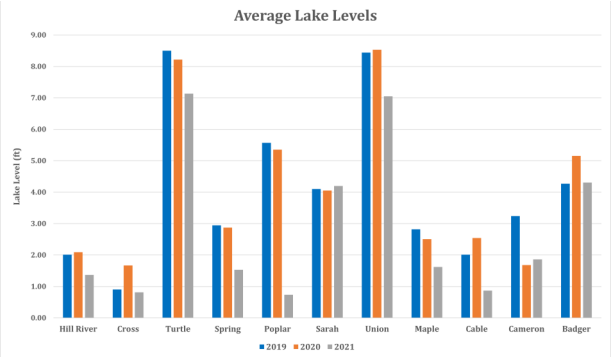


Figure 2 (above), Figure 3 (below)



Stream Impacts from 2020-2021

Stream impacts from the summer of 2020 to 2021 have varied slightly. We monitor 5 streams weekly including: Clearwater River, Poplar River, Hill River (2 sites) Sandhill River, and Lost River. Recent drought has Impacted stream stage height with nearly all monitored locations having a yearly average significantly lower than previous year averages. Water levels have declined on average 1ft this year compared to previous years (Figure 1). Clearwater river shows the highest average change with the average water level being 2.3ft lower than previous years. According to our data, Ph levels and Specific Conductivity numbers have increased in 2021. However, measures in pH and Specific Conductivity are still in the normal range of good water quality. Dissolved Oxygen are also within normal range, except for Hill River. In 2020, Hill River averaged 2.605mg/L in Dissolved Oxygen. In 2021, Dissolved Oxygen increased slightly at 3.758mg/L but is still exceptionally low to be considered to be in good water quality standards. Healthy water should generally have dissolved oxygen concentrations above 6.5-8mg/L., anything below that would be considered polluted waters. What we have noticed in the field is that Hill River is predominately stagnant with little to no flow which will then not allow enough oxygen to incorporate into the water . When Dissolved Oxygen is low , organisms and vegetation tend to die off with lack of respiration.

Lake Impacts from 2018-2021

Looking at our data we can concur that the drought could have impacted the Trophic State Index in certain Lakes. The Trophic State Index is a classification system that rates lake productivity (nutrient enrichment) by taking the average phosphorus, chlorophyll-a and secchi depth from lake sampling. We have monitored 15 lakes once a month within the 4 year scope. Spring and Poplar lake was recently taken off the list for meeting good water quality standards. Store and Cable Lake was just added to the monitoring list this year. According to our data (Figure 2) 9 lakes had low Trophic State Index which put them in the good category. 5 lakes made the fair category this year. Cameron Lake recently changed from fair to poor Trophic State Index this year. This is due to extreme phosphorus levels in Cameron Lake causing excessive algae blooms.

Lake Level Impacts from 2019-2021

East Polk Soil and Water Conservation District monitors lake levels for 11 different lakes. The graph on the left (Figure 3), depicts the lake level changes from 2019 to 2021. With the data showing 8 lakes have been affected by drought conditions. Badger Lake and Sarah Lake water levels show moderately unchanged levels from previous years. Union, Spring, Poplar , Cable and Maple Lake have shown an exponential decrease in water level within the last two years. Cameron has significantly lower lake levels than in 2019 but relative unchanged since 2020.

2021 Precipitation Totals from Minnesota State Climatology

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 11/09/2021. **All values are in inches**.
- 'cc ttt rr ss' is county-township-range-section number.
- '*' 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

2021 Monthly Precipitation Totals in Polk County, MN

TTT	SS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
COLUMBIA	11	.50	.12	.19	2.44	.60	1.81	.72	1.98	2.9			
ROSEBUD	4	*			2.48	.91	2.18	.48	2.84	3.22			
GARFIELD	29	.50		.10	1.43	.40	2.17	.85	2.93	3.75			
QUEEN	15	*			2.11	.44	1.75		2.17	3.07			
KNUTE	3	.33		.25									
WOODSIDE	14	*			1.40	.42	2.36	.39	2.74	3.55			
ONSTAD	4	.23	.10			1.04							
LESSOR	11	.37	.12	.19	1.91	1.70	2.06	.71	3.65				
TILDEN	7	*			1.30	1.07	2.15	.55	4.75	2.85			
GENTLY	15	.34	.22	.11		.61			2.24	*	*		
CROOKSTON (NWS)	19	.31	.17	.10	.67	.95	1.64	.32					
CROOKSTON	31					1.90							
HEGELAND	31	.15	.20			2.72							
County averages		.34	.16	.16	1.72	1.06	2.02	.57	2.91	3.22			
# of observations		8	6	6	8	12	8	7	8	6	0	0	0

DEPARTMENT OF NATURAL RESOURCES

Minnesota State Climatology Office

Tree and Shrub Planting Guide

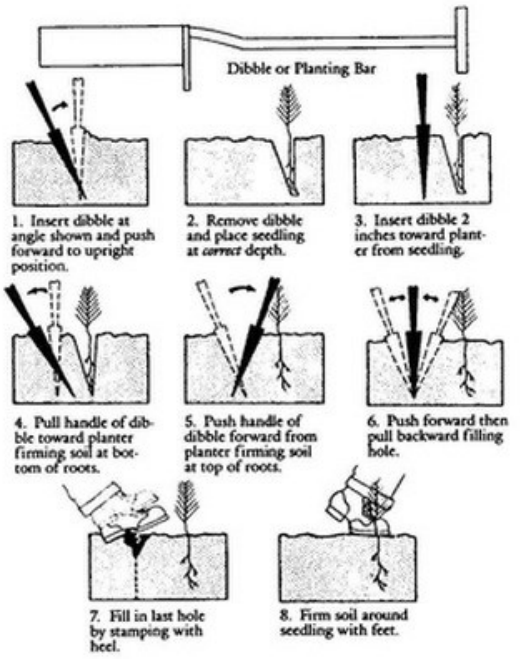


Figure 1: Using a dibble (planting bar) to plant seedlings.

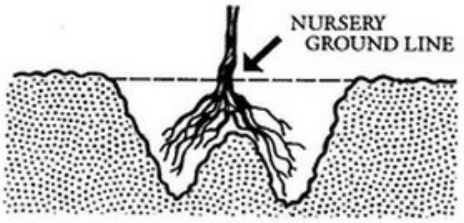


Figure 2: An example of the hole and shovel method of planting seedlings.

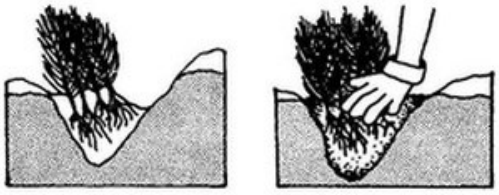


Fig. 3. One method of long-term tree storage is the "heeling-in" technique. Roots must be packed tightly in soil and kept moist, and the heel-in trench must be shaded and protected from the wind.

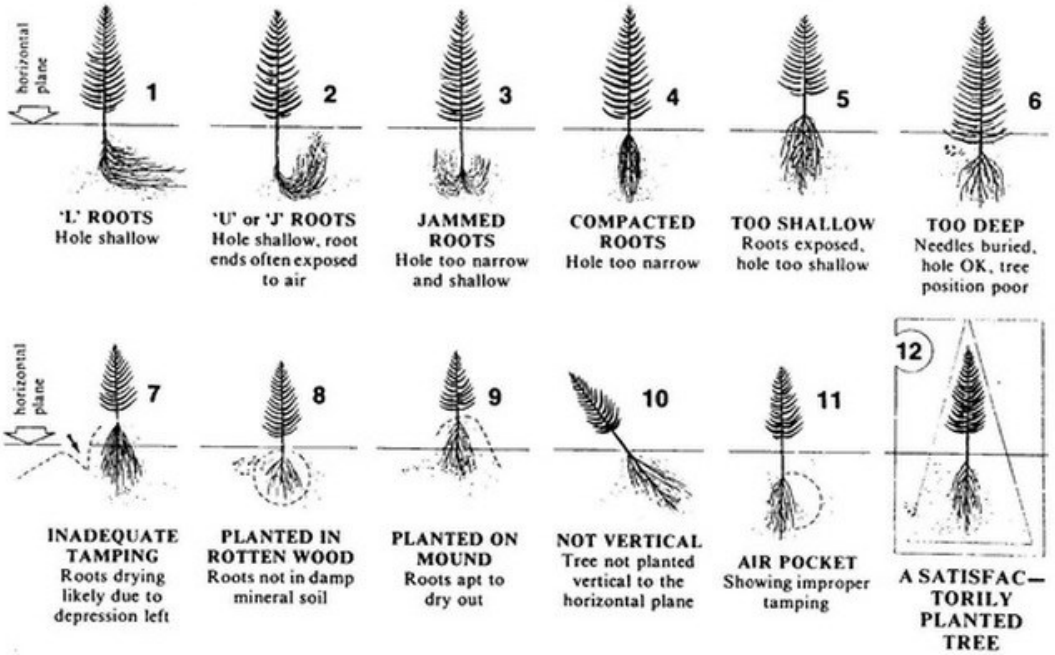


Fig. 4. Drawings 1 through 11 illustrate various ways that trees should *not* be planted. The ideal planting is shown in drawing 12.

Discover What's In your Waters

Clean drinking water is a fundamental building block of good health, and its quality is often taken for granted. Pick up an easy to use water testing kit today at the East Polk Soil and Water Conservation District to ensure water is safe from bacteria, nitrates, arsenic, lead, fluoride & secondary contaminants.

You should pick up your water when….

- Purchasing a home
- You are pregnant or nursing
- There are children or elderly in the home
- Someone in the home has a digestive illness or vitamin deficiency
- There is a private water source on property Living near livestock or heavily fertilized areas
- A new well, pump, or treatment device has recently been installed
- There is a change in odor, taste or appearance of your water
- You want to know the quality of the water you and your family consume
- Your place of business caters to children or the elderly

You can pick up your water test kit at the East Polk SWCD Monday through Friday from 8am-4pm. When you pick up your water test kit please note that you can only drop off finished water test kits Monday through Thursday before 9am.. RMB Labs does not provide a courier service on Fridays. In the event that your water test kit is ready on Friday you may drop off your test kit at RMB Lab's headquarters in Detroit Lakes located at 22796 Co Hwy 6, Detroit Lakes, MN 56501 or you can mail it. The East Polk SWCD will call RMB Lab's courier service when the test kit is ready. Average costs are $12-$27 dollars per test. If you are not sure what to test for we can help! Simply call East Polk Soil and Water Conservation District at 218-563-2777. More information is available on the RMB Website: https://www.rmbel.info/.

New Employee

Jenna joined the team in April as part of a seasonal internship. She recently became a permanent member of the team as a District technician in October. Prior to joining us, Jenna had fulfilled many other seasonal internships and work terms for many agencies. Such as US Fish and Wildlife Service, MN Department of Natural Resources and Student Conservation Association. Her previous roles include wildland firefighter, biological intern, general labor/maintenance, and biologist.

Jenna grew up locally on a farm near Erskine and graduated from Win-E-Mac in 2015. She then moved to Fargo and earned her bachelor's degree in Zoology/Biology at North Dakota State University. An outdoor enthusiast, she spends most of her time outside whether it be looking after livestock on her farm or hiking with her two Boston terriers.

Jenna's responsibilities have been stream and lake monitoring, assisting with the tree program, shoreline restoration program, buffer program and wetland conservation program. She will be taking over as lead for the tree program, feedlot program and AgBMP loan program, while still maintaining other previous responsibilities.

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 Schommer
District Technician
Email:
schommer.eastpolk@gmail.com

Jenna Wiersma
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.