
Photo Credit: Wikimedia Commons

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Species Highlight: Fisher (*pekania pennanti*) - Shayna Vendela

Fisher are fascinating mustelids that are native to Minnesota and are one of eight of our mustelid species. Historically, trapping for their fur resulted in a significant drop in fisher populations, which nearly went extinct; however, they have recovered enough to allow a restricted trapping season in the state. One driving factor for their populations is thought to be suitable den (cavity) trees to reproduce in, oftentimes reusing cavities from other wildlife.

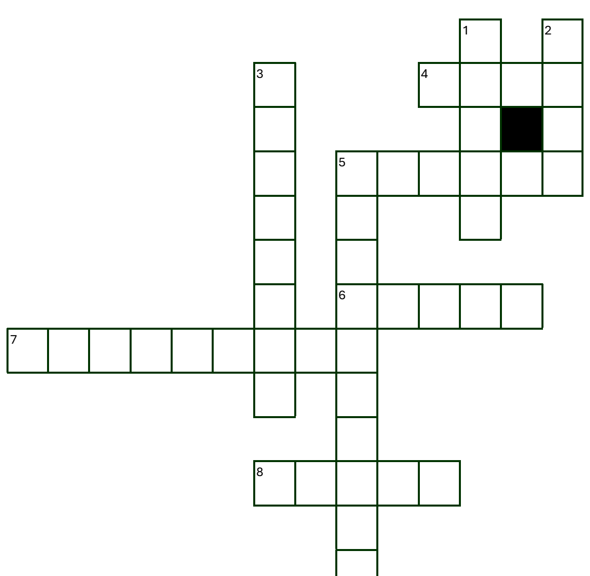
The normal coat color for Fisher is dark brown, however white-coated phased individuals have been seen in Minnesota and Wisconsin. They live in a variety of habitats, all of which are forested. Their diet varies, but because they are carnivores, their primary food source is meat (mice, squirrels, rabbits, porcupines, etc.). They will also consume seasonally available fruits and nuts.

Fisher exhibit a reproductive phenomenon known as delayed implantation, wherein mating occurs in the spring—7-10 days after the female has given birth from the previous year. For the next several months, the embryos remain in a dormant state, only developing into fetuses approximately two months prior to birth in the spring. Following the birth of one to five offspring, the female fisher promptly seeks a new mate, resulting in a gestation period of approximately 352 days. This means that there's only about a week out of the year that a female fisher is not pregnant.

A distinctive characteristic of fishers is their remarkable ability to descend trees head-first, a skill attributed to the unique flexibility of their hind legs, which can rotate 180 degrees. Unlike most animals that must descend trees in a rearward position, fishers can navigate downwards with agility, allowing them to turn around and climb down head-first. This adaptability contributes to their reputation as effective predators, particularly noted for their ability to hunt porcupines.


Photo Credit: Shayna Vendela

FISHER CROSSWORD!



Down

1. Fisher are one of _______ native mustelids in MN.
2. Fishers are pregnant for almost a full ______
3. Fishers are a ___________
5. Fishers are known as ____ or animals hunted or trapped for their fur

Across

4. Fisher give birth to one to ________ young
5. Native to MN, this mustelid is known as a ___
6. Most fisher are a dark ___________ color
7. Fishers are known as one of the only predators to what species?
8. Fishers may build their nests inside of _____

Across: 4. Five, 5. Fisher, 6. Brown, 7. Porcupine, 8. Trees
Down: 1. Eight, 2. Year, 3. Mustelid, 5. Furbearers

Pine County Soil & Water Conservation District

The Pine SWCD Newsletter

Volume 34, Issue 1 Spring 2025

Native Shoreline Buffers- Krista Arne

What is a native shoreline buffer?

A native shoreline buffer is a natural strip of vegetation along the edge of a water body, such as a lake, river, or stream. It consists of native plants that help protect the shoreline from erosion, filter pollutants, and provide wildlife habitat. Native plants have great root systems and provide habitat for animals and insects like pollinators.


Eroded shoreline before restoration.
Photo credit: Natural Shore Technologies


Native shoreline restoration
Photo credit: Natural Shore Technologies

Why Are Shoreline Buffers Important?

Prevent Erosion: The roots of native plants help stabilize the soil, reducing erosion caused by wind and water.

Improve Water Quality: Buffers act as natural filters, trapping pollutants like sediment, phosphorus, and nitrogen before they enter the water.

Wildlife Habitat: Native plants provide food, shelter, and breeding grounds for fish, birds, and other wildlife.

Reduce Runoff: Vegetation slows down stormwater runoff, preventing it from washing contaminants into lakes and rivers.

Continued on page 4...

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Inside this issue:

How to Access Accurate Real Time Local Weather Data - Heather Donoho

Photo Credit: MN Department of Ag

The weather is a fickle mistress, especially in the Midwest. It's hard to predict when the sky will be sunny, rainy, or snowy. For those who make their living off the land, like farmers, it's crucial to have accurate weather data for making farm management decisions that maximize profits and minimize loss. The Minnesota Department of Ag (MDA) received funds from the Clean Water Fund to increase Minnesota's Ag Weather Network by 40 weather stations. These weather stations can improve cropping outcomes and water quality by providing real time weather data to inform and guide management decisions faced by farmers.

"THE CLOSEST WEATHER STATIONS TO PINE COUNTY ARE IN MORRISON, BENTON, AND SHERBURNE COUNTIES. "

Pine County currently does not have a weather station and the closest stations are in Morrison, Benton, and Sherburne Counties. The stations cover about a 20-mile radius with accurate and detailed weather information, so Pine County is outside this range. These weather stations collect data on rainfall, air temperature, wind direction and speed, relative humidity, dew point temperature, soil temperatures, soil moisture, solar radiation, snow depth and snow water equivalent. Through a partnership with the North Dakota Ag Weather Network (NDAWN) additional data is available such as crop modeling, air temperature inversion, daily estimated crop water use, disease risk, regional weather maps, irrigation scheduling, and growing degree days. This information is available for free to the public through the mobile app "NDAWN Inversion" or at the website: https://ndawn.ndsu.nodak.edu/ or https://ndawn.info/. This information leads to more effective utilization of inputs like fertilizer and pesticides, prevents nutrient loss by predicting runoff potential, and assists with decisions of disease treatment by predicting when disease risk is high.

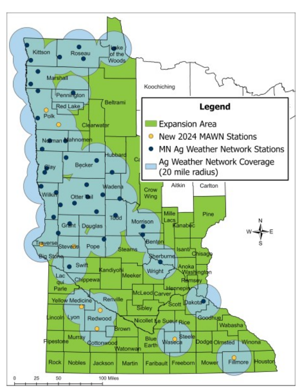


Photo Credit: MN Department of Ag

A weather station in Pine County would be a significant benefit to the community, so what makes a good site for a weather station? The ideal site would be mostly flat and open near agricultural fields, 300 feet from large buildings; trees; or large bodies of water, accessible year-round, and have at least one bar of Verizon cellular signal. Hosting a weather station is a mutual partnership in which the landowner signs an access agreement with the MDA that allows them to build and maintain their equipment. There is no money exchanged through the partnership. The landowner retains ownership of the land and the MDA pays for and maintains the equipment. The stations take up a 30x30 foot area, are 30 feet tall, and last at least 50 years. Those interested in hosting a station can visit: www.mda.state.mn.us/weather-station-host or contact the SWCD for assistance.

The Role of Native Vegetation in Enhancing Shoreline Habitats

- Krista Arne

Fish tend to prefer areas with native vegetation along the shoreline because these plants provide important benefits such as shelter, food, and protection from predators. The roots and dense growth create a habitat where fish can hide and seek out smaller organisms to eat, while also offering a stable environment that helps regulate water quality. Having a natural native buffer also helps birds, pollinators and small mammals. Fun fact, geese do not like taller vegetation and prefer short, mowed lawns. In contrast, areas without vegetation offer fewer resources, making them less appealing for fish, especially for species that rely on the complex structures and biodiversity that plants support.

Meet the Staff!

Krista Arne

Krista started in October 2024 as the Water Resource Technician. She grew up in central Minnesota and spent much of her childhood living on a lake, so the lakes of Minnesota have always held a special place in her heart. Krista has a degree in biology from St. Cloud State and experience as an environmental technician. She is excited to help Pine County landowners with shoreline buffers, stabilization, and wetland restoration. When she's not working, she enjoys spending time outdoors with her family, exploring nature, gardening, and caring for her hobby farm/homestead.

Nick Foss

Nick graduated from the University of Minnesota Twin Cities with a degree in Forestry and Natural Resource Management in Spring of 2024. While in school, he gained experience in the forestry ecology lab at the University. After college, he interned with the National Forest Service at Six Rivers National Forest in northern California. Nick grew up in the Foley, MN area, and attended St. John's Prep for high school. In his free time Nick enjoys hiking, canoeing, spending time with friends and family, playing basketball, and supporting his favorite Minnesota

Cost-Share Available for Projects that Promote Clean Water- Mary Poelman, Kanabec SWCD

The Snake River Watershed Plan Partnership (SRWPP) is excited to offer cost-share funding for projects that support clean water as a primary benefit. If you have a project that helps protect or enhance water quality, we want to support you!

Check out the types of eligible projects and cost-share rates to see how your project can benefit from this opportunity. Funding is project-specific, with priority given to those within the Snake River Watershed area.

Ready to get started? Contact your local SWCD office today to learn more and apply for funding. We're eager to discuss how we can help make your clean water project a reality!

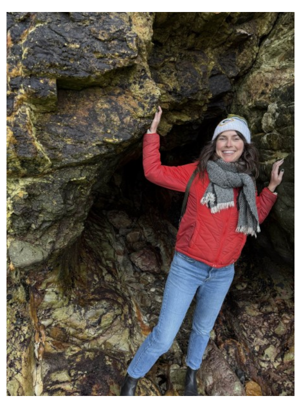
Types of Funded Projects (including but not limited to)		Cost Share
Ag Non-Structural Practices	Tillage and residue management, cover crops, nutrient management, prescribed grazing, perennial conversions	Up to 75%
Ag Practices	Prescribed grazing component practices, erosion control practices	
Livestock Waste Practices	Livestock exclusions, feedlot runoff improvement, manure storage, manure pit closures	
Shoreline Protection	Shoreline restoration, erosion control, rip-rap, coir logs, native plantings	
Forestry Practices	Forest stand improvement, tree planting, forest stewardship planning, conservation easement planning	
Groundwater	Well sealing	
Urban Stormwater Practices	Rain gardens, water storage, rain barrels	
Wetland Restoration	Wetland and water storage practices with water quality benefits	
SSTS	Upgrade or install new subsurface sewage treatment systems (SSTS). Eligibility: low-income households	Up to 100%
Technical and Engineering	Site assessments, surveys, analysis and design, construction, inspection	
Education/ Workshops	Assistance with funding/planning/providing education opportunities on clean water topics	
Planning and Assessment	Sub-watershed analyses, culvert inventories	

Meet the Staff!

Paul Swanson

Paul has worked for the district for 7 years, and 4 and a half years as the District Manager. He is knowledgeable in forest management, ecosystem dynamics, basic conservation information, and plant identification and ecology. Paul is an avid outdoorsman. Hunting ruffed grouse with his dog, Belle, is one of his favorite activities. He also enjoys fishing, both in the summer and winter, boating, and hiking. Paul also has a goal to photograph all 46 species of orchid native to Minnesota. General information about the district, project assistance, and administrative questions can be directed to him.

Erin Hoxsie



Erin is the Administrative Coordinator for the district. She is responsible for maintaining financial records, accounting, billing/invoicing, and making sure all our awesome employees get paid. She also supports the district manager to keep day-to-day operations up and running. Erin has a master's degree in geology from the University of Oregon and has been doing her best to brave Minnesota winters since 2018. Outside of work, she enjoys booking last-minute travel deals, practicing as an untrained sommelier, and going on adventures with her pup.

Eddie Johnson

Eddie is the District Forester for the SWCD since December 2023. Before that, he worked for the MNDNR as a Forestry Specialist. He has 3 degrees, with his main degree being a Bachelor of Science focusing on Forest Management. He grew up in Rush City and spent most of his summers east of Hinckley. He likes to spend his time outdoors in nature learning more...

Shayna Vendela

Shayna is a Farm Bill Wildlife Biologist for Pheasants Forever, partnered with the NRCS (Natural Resource Conservation Service) and Pine County SWCD. She works from the SWCD office in Sandstone on Mondays and Tuesdays, and at the USDA center in Hinckley the rest of the week. Shayna is from Grantsburg, WI and graduated from the University of Wisconsin-River Falls with a degree in Conservation and Environmental Planning. With a passion for the outdoors, she enjoys hiking, hunting, fishing, trapping, and bird watching. Shayna is eager to help landowners enhance wildlife habitat. You can reach Shayna on her office phone (320) 280- 4104, or by email svendela@pheasantsforever.org

Heather Donoho

Heather grew up in Illinois on a corn and soybean grain farm, and graduated from Southern Illinois University with a degree in Plant and Soil Science in 2013. She joined the Pine SWCD staff as the Ag tech in 2023 with the mission to create a community of conservation in Pine County. Heather is a passionate soil conservationist, avid reader, and loving family woman. Please reach out to her at heather.donoho@co.pine.mn.us or 320-216-4247 to discover how conservation practices fit your unique farm operation.

Eddie continued...

about it, as well as spending time with others who are also willing to learn about it. He enjoys knowing the Pine County area well and looks forward to helping Pine County and surrounding areas succeed in their Forest Management goals. Any Forestry, Tree sale, or Woodland Stewardship Plan questions can be directed to Eddie at eddie.johnson@co.pine.mn.us or (320) 216-4245.

Water Body Spotlight: Long Lake - Krista Arne

Long Lake is located one mile north of Rutledge, MN, in Pine County. It is a small lake, oriented NE to SW, covering approximately 77 acres, maximum depth of 24 feet, and with a shoreline length of 2.5 miles. Long Lake has an inlet from Little Mud Lake and an outlet that flows to the Kettle River. Long Lake does not have any aquatic invasive species listed. Due to limited development and the surrounding forested lands and wetlands, Long Lake has remained off the impaired lakes list of Minnesota. Long Lake is in the Kettle River watershed. The data indicated, in a 2019 study, that the lake is mesotrophic (TSI = 49), featuring moderately clear water for most of the summer and offering excellent recreational opportunities.

A recent fish population survey, conducted in June 2023 using trap and gill nets, has offered valuable insights into the current state of the lake's fishery. The survey focused on Northern Pike, Black Crappie, Bluegill, and Largemouth Bass populations, with a notable absence from Walleye, which were previously stocked but are no longer present due to poor survival rates. Walleye were once stocked in Long Lake between 2000 and 2009, but stocking efforts were discontinued due to poor survival rates and lack of return to the fishery. As a result, no Walleye were sampled during the 2023 survey, and it appears that this species is no longer a viable part of the lake's fishery.

Long Lake in Pine County, MN, is a 77-acre, mesotrophic lake with moderately clear water and a diverse fish population. There is a public access located on the north side of the lake with a concrete boat ramp.

"LONG LAKE IS A 77-ACRE, MESOTROPHIC LAKE WITH MODERATELY CLEAR WATER AND A DIVERSE FISH" POPULATION"

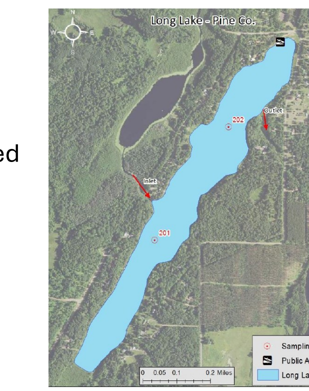


Photo Credit: Pine SWCD

Tree Care Etiquette - Eddie Johnson

Planting new seedlings or caring for large, mature trees, it's important to do it properly to do the least amount of harm and to encourage successful growth. Trees are a big part of the environment and have many roles. They provide habitat for wildlife, they can purify the air, they can help keep the soil cool during sunny days, and they can help ease our minds and help us relax. When caring for mature trees, always try and avoid repeated compaction of the soil near the tree. Compacting the soil can damage the shallow root system. Depending on what aesthetic you want, pruning your trees can be important also. A third thing is to watch for decay or pest damage. This can damage the structure and strength of your tree. When caring for small trees and recently planted seedlings, making sure they are watered is very important. The soil should be damp but not soggy. Soggy soil does not allow Oxygen to penetrate the soil, which is needed for good tree health. To keep the soil damp, mulch can be a great option. Mulch helps keep the soil cooler during the day which helps to decrease evaporation. If the soil is poor and has little nutrients, fertilizer could be a good option. Overall, making sure your trees are healthy can keep the environment healthy. Always feel free to contact us if you have questions about any tree care plantings, pruning, or disease & decay concerns.

2025 Tree Sale

There are 28 shrub and tree species as well as 4 different bundles available this year and now is the time to reach out if you are interested in buying any tree or shrubs.

Feel free to check our website at: www.pinescwd.com > Services > Tree Sale, to see what is available. Many species sell out quickly so feel free to call or email if you are interested.

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Native Shoreline Buffers - Continued from page 1

Photo Credit: Scott SWCD

"NATIVE PLANTS HELP PROTECT THE SHORELINE FROM EROSION, FILTER POLLUTANTS, AND PROVIDE WILDLIFE HABIT"

Healthier Lakes and Rivers: Clean water is vital for recreation, fishing, and drinking.

What Can You Do?

Plant Native Vegetation: Use grass, shrubs, forbs, and trees that are native to Minnesota. These plants are adapted to local conditions and help stabilize the soil.

Avoid Mowing to the Water's Edge: Leave a natural buffer zone of 5-35 feet along your shoreline. The wider the buffer, the greater the protection!

Minimize Fertilizer Use: Fertilizers can harm water quality by adding excess nutrients that promote algae blooms.

Pine County has five watersheds within its borders, each with a One Watershed, One Plan. Funding is available for qualifying projects within these watersheds. To explore opportunities for native shoreline buffers and shoreline stabilization, reach out to Krista, the Water Resource Technician, to schedule a site visit. She can be contacted by email: krista.arne@co.pine.mn.us
or
phone: (320)-216-4242

Win Big with a Nutrient Management Plan! - Heather Donoho

Photo Credit: Ryan Clark

"NUTRIENT MANAGEMENT IS AN IMPORTANT AND EFFECTIVE VOLUNTARY TOOL TO COMBAT SUBSURFACE NITROGEN AND SOLUBLE PHOSPHORUS LOSS"

What's better than winning the lottery? Reducing input costs, increasing profit, and protecting water quality all at the same time! Nutrient Management Plans have been shown to reduce farm input costs by about $30 an acre on average. In addition, they reduce nutrient loss and protect natural resources.

A Nutrient Management Plan is a tailored guide to maximize the efficiency of soil amendments. This is done through the 4 Rs of nutrient stewardship, which are Right Rate, Right Source, Right Place, and Right Time. This reduces the loss of nutrients through processes like leaching or denitrification by ensuring the optimal nutrient source is applied at the right rate, time, and in the right place. To accomplish this a farm is assessed for field conditions, soil, cropping history, all potential nutrient imports and exports, management and production system limitations, climate, drainage, soil biology, and producer preferences to create a new plan or enhance an existing plan for nutrient management. From there, farmers use this information to inform management decisions as necessary. This information is beneficial for all farms no matter the size or type of production.

In addition to the financial benefits to farms, Nutrient Management Plans provide benefits to water quality by ensuring nutrients stay where they are needed when they are needed for plant uptake. Through voluntary conservation practices like no-till and cover crops farmers are making advancements on a national level to reduce resource concerns such as soil erosion, fuel use, and carbon storage. However, subsurface nitrogen loss and soluble phosphorus loss have been increasing on a national level. Nutrient Management is an important and effective voluntary tool to combat this national issue.

There are several organizations that can help farmers start or improve a Nutrient Management Plan. Organizations like the Pine Soil and Water Conservation District (SWCD), the Natural Resources Conservation Services (NRCS), and the Minnesota Ag Water Quality Program (MAWQCP) can provide technical and financial assistance for the development or enhancement of a nutrient management plan. If you'd like to win big with increased profits while reducing environmental impacts on your farm, then contact the Pine SWCD today to schedule a site visit.

Oak Tree Diseases - Eddie Johnson

Other than Oak Wilt, there are two diseases that can affect oak trees.

The first is called, **Twolined chestnut borer**, which is a beetle that lays larvae on the tree, in which the larvae begin entering the tree and feed in the inner bark and cambium layer of the tree. The cambium layer is the layer between the bark and the wood. It is very small but serves as the tree's nutrient highway. This disease affects stressed or damaged trees. With the recent years of drought, most oak trees are stressed which may be why your oaks could look unhealthy.

The second disease is called **Armillaria** which is a root disease caused by several fungal species of Armillaria. When the oak trees are not stressed, the Armillaria fungus survives as rhizomorphs which are tough, black, and string-like structures that occur in the soil and on dead tree trunks and roots.

Both of these diseases usually only flare up when there are stressful events such as drought or frequent flooding events. With the past few years being dry or too wet, this stresses the oak trees, which also opens the door for these diseases to take advantage of the oak trees. This scenario could be why your oak trees may look unhealthy or are dying.

One big reminder is to never prune your Oak trees between April and September. To protect your trees, only prune in the winter.

Photo Top: Twolined chestnut borer.
Robert A. Haack, Bugwood.org

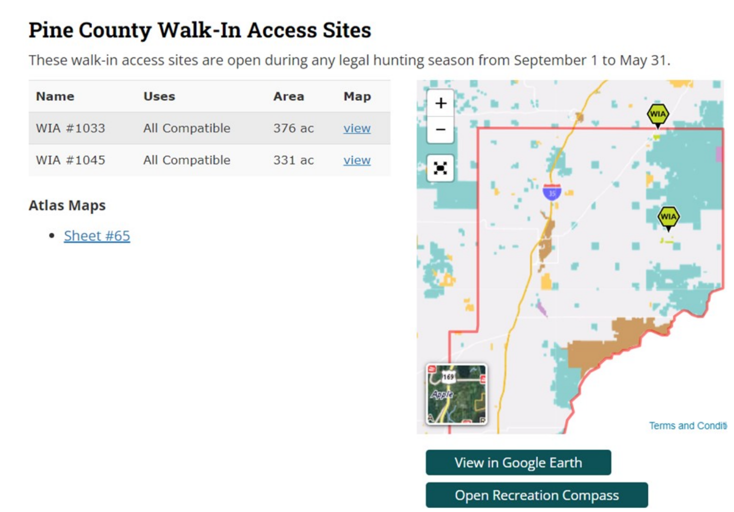
Photo Bottom: Armillari
Wikimedia Commons

Walk-In Access in Pine County - Shayna Vendala

Pine County residents might be interested to know that there are additional acres open for hunting and certain public recreation in Pine County. Thanks to the landowners who were willing to enroll their private property for public access, these parcels are open for hunting and additional outdoor recreational opportunities (such as bird watching and nature photography) from September 1st through May 31st. If you are interested in finding out where these properties are located, you can find a map on the MN DNR website.

Walk in Access acres require a $3 certification for access. No landowner contact is necessary to utilize these lands. If you are accessing the property for recreational uses, it is advisable to wear blaze colored (pink or orange) clothing to make yourself visible to others utilizing the site, especially if doing so during hunting seasons.

Photo credits: MN DNR



Pine County Walk-In Access Sites

These walk-in access sites are open during any legal hunting season from September 1 to May 31.

Name	Uses	Area	Map
WIA #1033	All Compatible	376 ac	view
WIA #1045	All Compatible	331 ac	view

Atlas Maps

- Sheet #65

View in Google Earth

Open Recreation Compass

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