

Spring/Summer 2018



LOW ER ELKHORN NATURAL RESOURCES DISTRICT

# Directions

## Nitrates in drinking water can be harmful

### Phased Groundwater Management Plan designed to address high nitrate levels

The Lower Elkhorn Natural Resources District's (LENRD) concern for groundwater quality, and the desire to further implement best management practices to prevent groundwater contamination, are the primary reasons the district is considering expanding the geographic area of the Phase 2 Groundwater Management Area in Pierce and Madison Counties.

An Open House Public Hearing will be held on Thursday, July 26<sup>th</sup> on the possible changes to the Groundwater Management Area and the phases that could be implemented to protect the groundwater in that area.

Concerns about high nitrates in the district have risen as long-term monitoring has shown increasing levels of nitrate concentration in much of the

groundwater in Pierce County. Extensive sampling of Pierce County irrigation wells was conducted in 2015 and 2017, with over 700 samples collected. The average nitrate concentration of the samples collected was 13 ppm. Some communities in Pierce County have also been plagued with high nitrates in their drinking water.

Several health concerns are related to the consumption of high nitrate water. Nitrates can be particularly harmful to infants under six months of age. Excessively high nitrates can lead to methemoglobinemia, a condition that is commonly known as "blue baby syndrome" in which there is a reduction in the oxygen-carrying capacity of blood, leading to death. Pregnant women and other adults with certain health conditions may also be at increased risk. Because of these potential health risks, the U.S. Environmental Protection Agency (EPA)

has set a maximum contaminant level of 10 parts per million (ppm) for nitrate-nitrogen in public water supplies.

The LENRD's Groundwater Management Area has a system of four phase levels. The designated boundaries for the phases may follow either natural or political boundaries. The boundaries may be drawn around existing problem areas or potentially vulnerable areas.

"The use of several phases allows the district to adapt different requirements to assorted conditions," said Brian Bruckner, LENRD Assistant General Manager. He added, "The requirements for an area may change, either becoming strict when conditions worsen or lenient when conditions improve."

Contact the LENRD for the proposed changes to the phases and geographic area or visit the district's website: [www.lenrd.org/groundwater-management](http://www.lenrd.org/groundwater-management)

**Open House Public Hearing**  
**Potential changes to the Groundwater Management Area in Pierce and Madison Counties**  
**Thursday, July 26th from 5 - 7 p.m.**  
**1508 Square Turn Boulevard in Norfolk**

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## LOWER ELKHORN

### Natural Resources District

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 Norfolk, NE 68701

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*"Striving to improve the quality of life for all citizens of the Lower Elkhorn Natural Resources District by promoting and demonstrating sound methods of stewardship which conserve, develop and manage all natural resources."*

"Equal opportunity employer and provider."



*Protecting Lives - Protecting Property - Protecting the Future*

## LENRD office moves to new location in Norfolk



1508 Square Turn Boulevard  
 Norfolk, NE 68701

The Lower Elkhorn Natural Resources District (LENRD) office recently moved out of the Lifelong Learning Center (LLC), which has been its home for the past 20 years.

LENRD Board Chairman, Dennis Schultz, said, "It wasn't an easy decision to make because of the district's longtime, strong partnership with Northeast Community College, but the need to be as fiscally responsible as possible is what led the board to approve the purchase of the former Sterling Computer building."

LENRD General Manager, Mike Sousek, said, "The new space has ample storage as well as a building for vehicles and equipment on-site. We want to thank Northeast Community College for serving as the district's home for two decades. We hope our move provides new opportunities for the college in creating available space in the learning center for other potential partners."

WEDNESDAY  
**MAY 30, 2018**  
 7:30pm

### WOOD DUCK WILDLIFE MANAGEMENT AREA

Stanton, NE

Hwy 24 from Norfolk to Stanton: Turn south on 563 1/2 Ave. Drive south until you arrive at a dead end, approximately one mile after crossing the Elkhorn River. Head west on 834th Road, for approximately 2.5 miles. Turn north on 561st Ave, for approximately 2 miles. Turn East on River Road. Parking area is on River Road. The event will be marked.



Rachel Lester - Red Hood Herbs  
**WILD HERB WALK**  
 Identify local worthy prairie herbs that have medicinal/nutritional benefits.

Jamie Bachmann - Northern Prairie Land Trust  
**FROGWATCH**  
 Learn Nebraska frog and toad calls and how you can participate in the real scientific investigation of these amphibians through the citizen science project, FrogWatch.

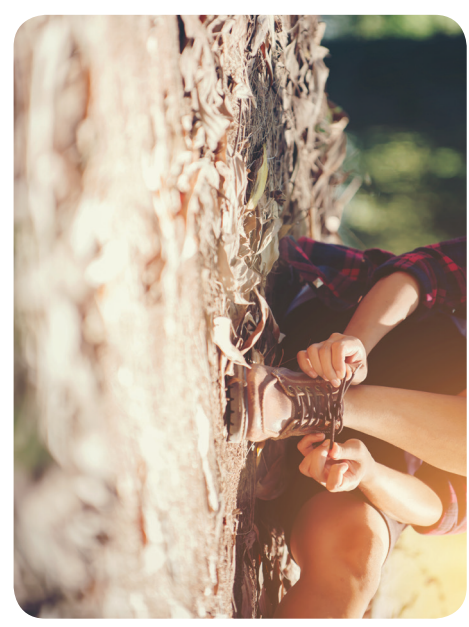
Scott Bohaty - Natural Resources Conservation Service  
**NIGHT SKY PHOTOGRAPHY**  
 How to photograph the stars, moon and Milky Way. You may want to bring a camera (ideally one that you can manually change settings), a tripod and a flashlight.

WEDNESDAY  
**JUNE 27, 2018**  
 7:30pm

### MASKENTHINE LAKE RECREATION AREA

Stanton, NE

9 miles east of Norfolk on Highway 275; then turn south (right) on Ridge Road; continue approximately 2 1/4 miles until you reach the East entrance to Maskenthine Lake Arboretum.



Justin Everson - Nebraska Statewide Arboretum (NSA)  
**HABITAT IN A BOX**  
 Come learn about some of the great native plants that help sustain fireflies, pollinators and other important wildlife and see how a NSA Bloom Box is a great way to get started creating backyard habitat.

Jamie Bachmann - Northern Prairies Land Trust  
**FIREFLY WATCH**  
 Participate in the citizen science project Firefly Watch and contribute to the scientific understanding of the decline in firefly population.

Todd Young - Professor of Physics & Astronomy  
 Wayne State College  
**STARGAZING**  
 Discover the night sky with Todd Young, Director of the Fred G. Dale Planetarium.

WEDNESDAY  
**JULY 25, 2018**  
 7:30pm

### COWBOY TRAIL TA-HA-ZOUKA PARK TRAILHEAD

Norfolk, NE

Head south on 13th St./Johnny Carson Blvd to Ta-Ha-Zouka Park, 2201 S 13th St. Southwest corner of park.



Jamie Bachmann - Northern Prairie Land Trust  
**OWLS OF NEBRASKA**  
 Discover the habits, calls and unique characteristics of these nocturnal birds of prey.

Jason Judt - Local Geocaching Enthusiast  
**GEOCACHING**  
 Explore the great outdoors with the world-wide treasure hunting game of Geocaching! Learn all about what geocaches are and how to find one with your GPS enabled device. We'll even go on a hunt and find some geocaches right in the park!

Tony Stuthman - North Fork Outfitting  
**KAYAKING**  
 Explore the Cowboy Trail and kayaking on the lake at Ta-Ha-Zouka Park.

## Coalition focuses on protecting Nebraska water users

The Lower Platte River Basin Coalition, which includes all seven Natural Resources Districts (NRDs) in the Loup, Elkhorn, and Lower Platte River Basins, and the Nebraska Department of Natural Resources (NeDNR) has, after several years of work, adopted and now initiated implementation of a voluntary basin-wide water management plan that sets criteria for managing new water development in the Lower Platte River (basin). The jointly-developed plan implements goals and objectives that work to protect the existing domestic, agricultural, and industrial water uses in the Basin. The Coalition partners worked to use the best available science to evaluate the balance of supply and demands in the Basin that begins in Nebraska's water-rich sandhills and ends at the confluence of the Platte and Missouri Rivers, covering more than 25,000 square miles, or nearly one-third of Nebraska.

This unique Basin provides water for irrigation that sustains the area's agricultural economy, drinking water for more than half of Nebraska's residents, as well as other important industrial and in-stream water demands.

"This proactive partnership worked to voluntarily develop a plan for the future conjunctive management of the groundwater and surface water systems in this important river basin," Russell Callan, General Manager, Lower Loup NRD, said. "Nebraska's locally-driven groundwater management system, through NRDs, is a unique and strong approach for our state. This comprehensive basin-wide plan is another example of local and state jurisdictional entities working in partnership to protect all of Nebraska's water users, protecting lives, Nebraskans' property and our economic future," Callan said.

For more than 45 years, locally-elected NRD boards have successfully worked to address local groundwater quantity and quality management challenges. Water managers have recognized that what occurs in the sandhills of the upper portions of the Loup and Elkhorn Basins impacts the Lower Platte River Basin near Lincoln and Omaha's water supplies in the lower portion of the Basin. Likewise, changes in a variety of water demands in the lower part of the Basin can impact the upper portion of the Basin. This Basin planning effort improves the collaboration between

groundwater and surface water jurisdictions and managers across the whole Basin and establishes a framework for continually assessing impacts and identifying opportunities for more efficient uses of Nebraska's water. The plan also encourages local NRD and stakeholders to work together with the state to consistently gather and share data, apply technical analyses that will be used for long-term monitoring, and establish benchmarks to maintain water sustainability across the entire Basin.

"The fact that seven locally elected boards with varying local priorities were able to voluntarily sit down with the Nebraska Department of Natural Resources and develop a plan that works to protect all water uses now and for the future, as a foundation to grow our economy, while also ensuring our most precious natural resource is protected, is a valuable outcome for all water users in the state," said Jeff Fassett, Director of NeDNR.

Results from the water balance study that was developed by the Coalition indicated that, on an average annual basis, supply in the Basin exceeds the existing demands. Recognizing the opportunity this presents, but also wanting to be always aware of periodic droughts and protective of the long-term sustainability of the Basin's water supply, the Coalition partners developed a measured, incremental approach to allowing additional new uses. The adopted plan developed targets for allowable development at no more than 10% of the current identifiable long-term average excess waters during the first five-year increment of the plan. It is up to each local NRD board, along with NeDNR, to determine if and how they want to allow for the development of any new groundwater and surface water uses. The plan also lays out a process for annual collection and reporting of important data that will be used to monitor the plan's implementation. Each member will report to the Coalition annually on any new water uses and their associated streamflow depletions or projects developed to mitigate streamflow depletions.

"While this first increment uses the best science available today, an incremental approach ensures we will continue to use the best available science," Mike Sousek, General Manager, Lower Elkhorn NRD, said. "We want Nebras-

kans to benefit from the available excess water, but we also want to avoid a situation where we exceed the available secure and reliable water supplies. This careful, incremental approach and annual reporting will allow us to continually assess changes, adapt, and adjust as needed to ensure existing users are protected," Sousek said.

While the long-term historic Basin streamflows highlight the overall positive balance in the Basin, unfortunately, much of the identified usable supplies occurs during the non-peak water use season, or fall and winter months, when demands for the excess water are much less. But to water managers in the Basin, this average excess supply represents an opportunity for implementing more effective management strategies going forward.

"This plan is a proactive approach to address sound water management, which is the number one priority in the world," said John Winkler, General Manager, Papio-Missouri River NRD. "By capturing and storing some of the water during the non-peak period, those flows can be retimed for delivery during the peak demand periods, not only helping to meet demands during times of drought or when dry conditions warrant, but also mitigating flood potential during extreme excess flow events," Winkler said.

Other efforts by the Lower Platte South, Lower Platte North, and Papio-Missouri River NRDs, in partnership with the Metropolitan Utilities District (MUD), the Lincoln Water System, and NeDNR are looking at opportunities to further address drought periods and when peak demands overlap periods when streamflows are at their lowest.

"The basin-wide Plan is really a step forward for everyone in the Basin," Paul Zillig, General Manager, Lower Platte South NRD, said. "In conjunction with our own drought mitigation planning, the plan allows for potential upstream development, while protecting existing and future municipal, industrial, and in-stream water demands downstream."

To learn more about the Coalition, visit <https://lprbc.nebraska.gov>

### Arboretum Adventure

Visit the link below to become an Arboretum Explorer!

<https://plantnebraska.org/explore>

## Airborne surveys of our groundwater continue

Learning more about our groundwater and the aquifer formations across the district is one of the major projects on deck for the Lower Elkhorn Natural Resources District (LENRD) this summer.

At their February board meeting, the board voted to approve the agreement with Aqua Geo Frameworks, not to exceed \$220,000 to complete additional Airborne Electromagnetic (AEM) surveys, in conjunction with the 2018 Eastern Nebraska Water Resources Assessment (ENWRA) AEM flights that are already scheduled with 6 other NRDs.

LENRD Assistant General Manager, Brian Bruckner, said, "We received funding from the Nebraska Water Sustainability Fund to complete the ENWRA project. By continuing these flights within our district, we'll be able

### Spring Water Levels

The spring report will be completed very soon. Visit the link below for more information in the coming weeks.

[www.lenrd.org/monitoring-programs](http://www.lenrd.org/monitoring-programs)

## LENRD receives grant for telemetry project

The Lower Elkhorn Natural Resources District (LENRD) recently announced that they will receive \$65,720 from the Nebraska Environmental Trust for the "Lower Elkhorn Real-Time Monitoring Well Network Telemetry Project" project. The project is one of the 105 projects receiving \$18,301,819 in grant awards from the Nebraska Environmental Trust this year.

The LENRD is committed to the conservation of groundwater and recognizes the significant value a reliable groundwater source has for its constituents.

LENRD Assistant General Manager, Brian Bruckner, explains, "The ability to utilize real-time data when making management decisions is necessary for the LENRD to proactively manage the groundwater supply in northeast Nebraska. This project will result in real-time access to groundwater level data by any individual with internet access."

The Eastern Nebraska Water Resources Assessment (ENWRA) and the University of Nebraska Conservation and Survey Division (CSD) are committed to providing assistance to

fill in some of the missing areas where we need more data. This project will be a great asset and the information will be used in managing this precious resource in the future."

The AEM survey is a very rapid and efficient way of remotely sensing geology across an entire site without engaging in extensive drilling. To obtain the information, a geophysical device (typically hoop-shaped) containing sensors is suspended beneath a helicopter.

## Phyllis Knobbe retires after 38 years of service



Phyllis Knobbe of West Point has served as the Programs Assistant for the Lower Elkhorn Natural Resources District (LENRD) for the past 38 years. Her office was located in the Natural Resources Conservation Service (NRCS) office in West Point. She has seen many changes in programs over the years, but has always enjoyed sharing the conservation message while assisting our area producers. Phyllis, and her husband, Tom, plan to do some traveling as well as spending time spoiling their two granddaughters!

LENRD General Manager, Mike Sousek, said, "We appreciate her commitment to the protection of our natural resources, and for her constant support of our projects and programs over the years. Congratulations Phyllis, we wish you the very best!"

The LENRD has hired Elisha Smith as the new Programs Assistant in Cumming County. Elisha grew up on a ranch in southwest Nebraska, north of Imperial. She studied Diversified Agriculture at the University of Nebraska - Lincoln, where she met her husband Marty. They now farm and raise their family south of Pender. They enjoy riding and showing cutting horses in their spare time. Sousek said, "She has hit the ground running and will be a great fit to our team. Welcome Elisha!"

**BE PREPARED**

The Moon walk evening experience includes traveling to the site. There is limited restroom availability. Dress in layers because the weather at the location may be different than it is in town. Pack water and snacks for the return trip. Bring a flashlight for cloudy nights and don't forget the bug spray!

All Moon Walk times and places are subject to change due to the weather or other unforeseen circumstances.

For more information contact:  
**Jamie Bachmann - 402-370-3374**  
[jamie.bachmann@nebraska.gov](mailto:jamie.bachmann@nebraska.gov)

**SPONSORED BY:**

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**WHAT IS A MOON WALK?**

The Moon Walks purpose is to provide a family-oriented activity that introduces community to cultural and natural history of our area trails and lakes.

Through this introduction, we hope to foster an understanding and appreciation for these resources that will lead others toward stewardship of public lands.

**A TYPICAL MOON WALK PROGRAM**

Moon Walks are held on Wednesday evenings close to the official full moon and begin at 7:30 p.m.

Most Moon Walks last from 1-2 hours.

We usually walk an average of 1 mile round trip. Each Moon Walk starts with a short introduction to the night's program, then we hike to a designated area where we enjoy presentations. Presenters are experts in their field and are from our local community. The evening wraps up with FREE smores!