

COOPERATIVE CONNECTIONS

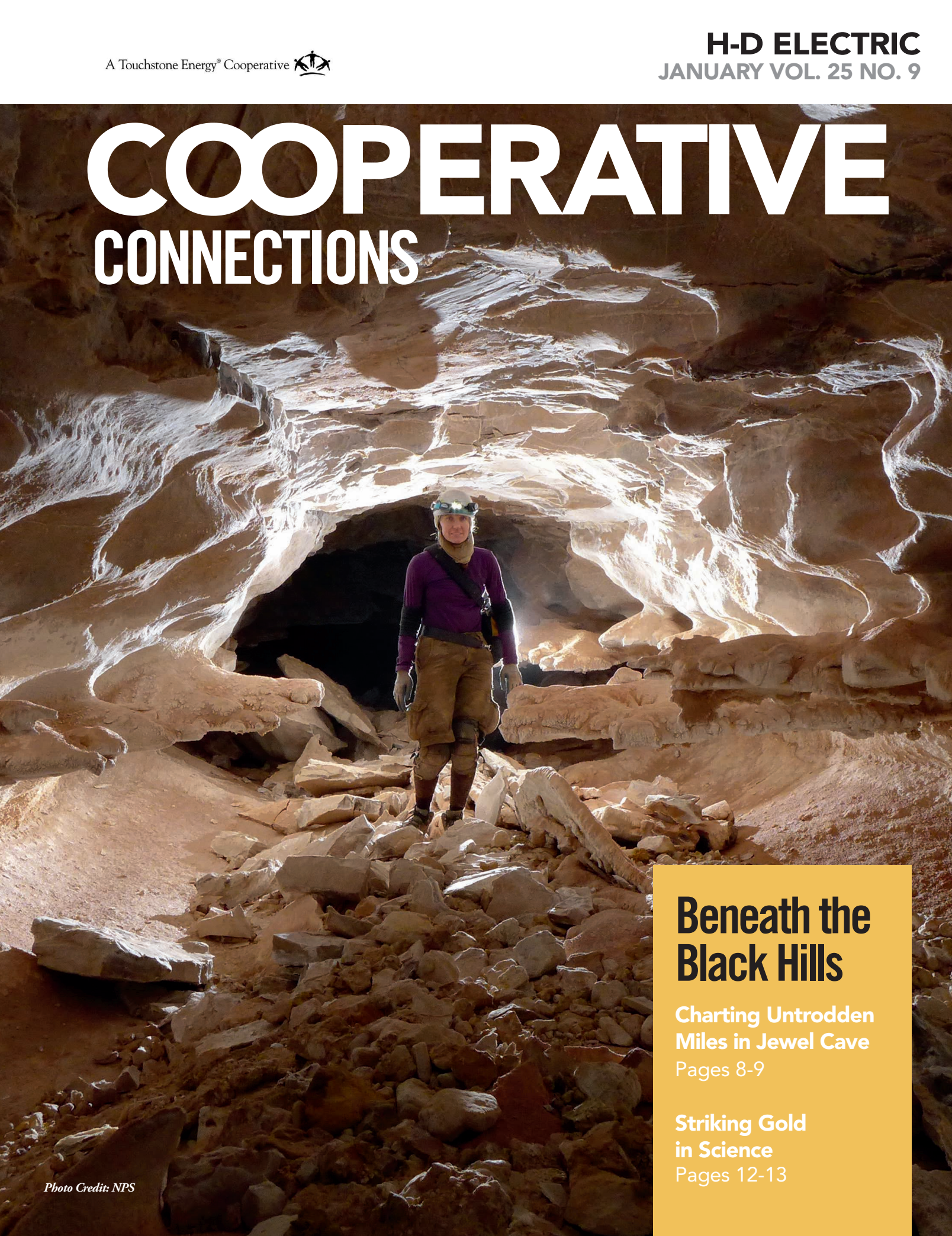


Photo Credit: NPS

Beneath the Black Hills

**Charting Untrodden
Miles in Jewel Cave**

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in Science**

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Beginner's Guide to the Electrical Grid



Matt Hotzler
Manager

Electricity plays an essential role in everyday life.

It powers our homes, farms, businesses, and schools. We depend on it to keep us warm in the winter (and cool in the summer), charge our phones, and binge our favorite TV shows. If the power goes out, even briefly, our lives become disrupted.

The system that delivers your electricity is often described as the most complex machine in the world, known

as the electric grid.

What makes it so complex? We all use different amounts of electricity throughout the day, so electricity supply and demand constantly change. For example, we typically use more electricity in the mornings when we start our day, and in the evenings when we cook dinner and use appliances. Severe weather and other factors also impact how much electricity we need.

The challenge for electric providers is to plan for, produce, and purchase enough electricity so it's available exactly when we need it. Too much or too little electricity in one place can cause problems. So, to make sure the whole system stays balanced, the electric grid must adjust in real-time to changes and unforeseen events.

At its core, the electric grid is a network of power lines, transformers, substations, and other infrastructure that spans the entire country. But it's not just a singular system. It's divided into three major interconnected grids: the Eastern Interconnection, the Western Interconnection, and the Electric Reliability Council of Texas. H-D Electric sits in the Eastern Interconnect. These grids operate independently but are linked to transfer electricity between regions when backup support is required.

Within the three regions, seven balancing authorities known as independent system operators (ISOs) or regional transmission organizations (RTOs) monitor the grid, signaling to power plants when more electricity is needed to maintain a balanced electrical flow. ISOs and RTOs are like traffic controllers for electricity. H-D Electric substations sit in the Southwest Power Pool (SPP), and we get our power through SPP, but we are on the border of the Midcontinent Independent System Operator (MISO), which sits East and North of our area.

Power plants can be considered factories that make electricity using various energy sources, like coal, natural gas, solar, wind, and nuclear energy. Across the U.S., more than 11,000 power plants deliver electricity to the grid.

H-D Electric is part of a three-tier system. East River Electric Power Cooperative is a transmission Cooperative receiving power from WAPA (think Missouri Rivers Dams) and Basin Electric Cooperative, our generation and transmission (G&T) co-op. H-D Electric is East River Electric Power Cooperative and Basin Electric Power Cooperatives' members and works closely with them to provide electricity at the lowest cost possible. Being part of a G&T benefits members like you by placing ownership and control in the hands of your co-op, prioritizing affordability and reliability, supporting local economic development, and fostering a sense of community.

We need a transportation system to get the electricity from power plants to you.

High-voltage transmission lines act as the highways for electricity, transporting power over long distances. Massive towers support these lines and travel through vast landscapes, connecting power plants to electric substations.

Substations are like pit stops along the highway, where the electricity voltage is adjusted. They play a crucial role in managing power flow and ensuring electricity is safe for homes and businesses.

After converting the electricity to the proper voltage, it travels through distribution power lines, like the ones you typically see on the side of the road or here at H-D. We often bury the lines that go from one green box to another. Distribution lines carry electricity from substations to homes, farms, and businesses. Distribution transformers, which look like metal buckets on the tops of power poles or large green boxes on the ground, further reduce the voltage to levels suitable for household appliances and electronic devices.

After traveling through transformers, electricity reaches you—to power everyday life.

We're proud to be your local, trusted energy provider. From when it's created to when it's used, electricity travels great distances to be available at the flip of a switch. That makes the electric grid our nation's most complex machine—and one of our nation's most outstanding achievements.

If you want to learn more about your Cooperative, the Annual Meeting is an excellent place. H-D Electric has set the annual meeting date as March 19, 2024, at the Hamlin Education Center near Hayti with 6:30 pm registration and 7:00 pm meeting start.

As 2023 ends and 2024 begins, I wish you all the best of the holiday season and a very Happy New Year.

Be safe, and remember, as you move snow in your yard, don't pile snow on the green boxes. It can delay restoration during an outage, and each year, we have transformers that become dislodged because of the snow, creating costly and very hazardous situations.

COOPERATIVE CONNECTIONS

H-D ELECTRIC

(USPS No. 018-905)

General Manager: Matt Hotzler

Headquarters Employees:

Annie Aberle – Finance and

Administration Manager

Michelle Prins – Billing Clerk

Heidi Brewer-Grimlie – Accounting Clerk

Jami Bolden – Receptionist/Cashier

Roger Cutshaw – Engineer

Darren Matthies – Building Property
Worker

Operations:

Troy Kwasniewski – Operations Manager

Todd Sprang – Line Foreman

Line Crew:

Pat Kirby – Operations Support

Joe Raml – Lead Lineworker

Cody Scarrott – Lineworker

Derek Bille – Lineworker

Kevin Holida – Lead Lineworker

Matt Miller – Lead Equipment Operator/
Mechanic

Joseph Jordan Jr. – Apprentice Lineworker

Eric Page – Apprentice Lineworker

Member Services:

Tom Lundberg – Member Services
Manager

Noah Reichling – Electrician Foreman

Jim Thompson – Lead Electrician

Board of Directors:

President: Bert Rogness – Astoria

Vice President: Terry Strohfus – Hazel

Secretary: Roxanne Bass – Castlewood

Treasurer: Steven Hansen – Clear Lake

Dale Williams – Estelline

Casper Niemann – Lake Norden

Kevin DeBoer – Clear Lake

Calvin Musch – Revillo

Todd Moritz – Castlewood

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Design assistance by SDREA.

Congratulations Bob and Shelly Scherbenske Winners of the \$100 Bill Credit in the Paperless Bill Drawing

Benefits of Paperless Bill Statements:

- ♦ Receive your bill quicker with Email Notification and avoid frustration over postal delays.
- ♦ View or print your electric bill anytime with 24/7 secure access to your online account.
- ♦ Helps H-D Electric reduce operating costs of printing, paper and postage which saves you, the Member, money and helps the environment.

Signing up is easy as 1-2-3:

Website:

- ⇒ Visit <https://hdelectric.smarthub.coop/> and login using your Email Address and Password.
 - ⇒ If not registered, create a new SmartHub account by clicking on 'New User? Sign up to access our self-service site'.
 - ⇒ Once logged in to SmartHub:
1. Click on 'My Profile' 2. Choose 'Update My Paperless Settings' 3. Click button to turn 'ON' paperless billing

Mobile App:

- ⇒ Download our free, secure SmartHub mobile app from the Apple or Google Play Store:
 - ⇒ Provider is H-D Electric
1. Click on Menu 2. Go to 'Settings' 3. 'Activate Paperless Billing', click the slider to enable

MARK YOUR CALENDAR! DATE HAS BEEN SET

Tuesday March 19th, 2024,
at the Hamlin Education
Center, Hayti, SD.

Registration: 6:30 p.m. Meeting: 7:00 p.m.

Operating Statistics:

	Oct. 2022	Oct. 2023
Meters Served.....	3,782	3,826
Amount Collected.....	\$1,098,968	\$1,169,452
Avg. Bill	\$290.58	\$305.66
Avg. kWh-Hour	2,384	2,527
Avg. kWh-Hours Purchased	9,426,306	10,253,530
Kilowatt-Hours Sold	9,017,494	9,668,012

January is National Radon Action Month

Radon is a Natural Danger

About one in 15 homes in the U.S. has radon levels at or above the the EPA action level, according to the National Cancer Institute. You can't see or smell radon, and scientists estimate 20,000 lung cancer deaths in the U.S. each year are attributed to it.

Radon is produced from a natural breakdown of uranium in soil, rock and water. It enters homes, offices, schools and other buildings through cracks in floors and walls, construction joints or gaps around service pipes, electrical wires and sump pits. The Environmental Protection Agency reports elevated levels of radon gas have been measured in every state and estimates nearly one out of every 15 homes in America has elevated radon levels.

People who breathe in these radioactive particles, swallow water with high radon levels or are exposed to radon for a long period of time are susceptible to lung damage and lung cancer. Smokers who are exposed to elevated levels of radon gas have a 10 times higher risk of developing lung cancer, according to the Centers for Disease Prevention and Control.

It may take years before health problems appear. Your chances of getting lung cancer from radon depend mostly on:

- How much radon is in your home
- Where you spend most of your time (the main living and sleeping areas)
- The amount of time you spend in your home
- Whether you are a smoker or have ever smoked

Test Your Home

Old homes, new homes, homes with basements and homes without basements can have radon problems. Testing is the only way to determine how much radon is present.

Consider hiring a professional tester. Short-term (2-90 day) and long-term (more than 90-day) test kits are available, with the long-term kit producing more accurate results. The EPA website can help you find a radon test kit or measurement and mitigation professional near you. Do-it-yourself test kits also are available at many local hardware stores.

No level of radon exposure is considered completely safe, however the EPA only recommends reducing radon levels in your home if your long-term exposure averages four picocuries

per liter (pCi/L) or higher. A pCi is a measure of the rate of radioactive decay of radon gas. This decay causes radioactive particles that can get trapped in your lungs when you breathe.

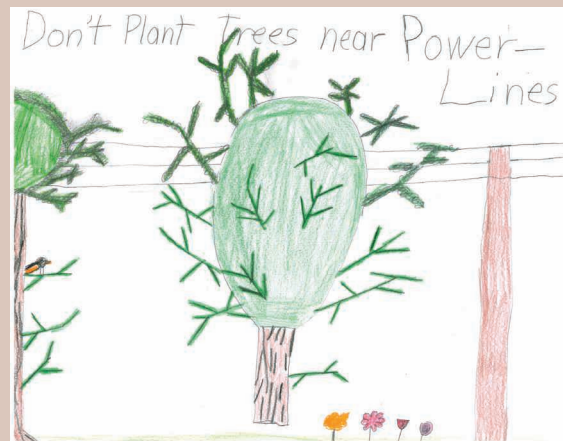
Reduce Radon Gas in Your Home

The American Cancer Society says a variety of methods can be used to reduce radon gas levels in your home, including sealing cracks in floors and walls and increasing ventilation through sub-slab depressurization using pipes and fans.

The EPA recommends using a state or nationally certified contractor, because lowering high radon levels often requires technical expertise and special skills. Two agencies have set the standard for participants seeking certification:

- The American Association of Radon Scientists and Technologists
- National Radon Safety Board

Always test again after the work is finished and then every two years. The U.S. Environmental Protection Agency has designated January as National Radon Action Month, a time when health agencies across the country urge all Americans to have their homes tested for radon.



Don't Plant Trees Near Power Lines

Annette Tschetter, Age 9

Annette Tschetter instructs readers to not plant trees near power lines. Annette is the daughter of Ryan and Elaine Tschetter from Revillo, S.D., members of Whetstone Valley Electric.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

SOUPS & STEWS

PUMPKIN APPLE SOUP

Ingredients:

3 tbsps. butter
1 cup finely chopped onion
2 tps. pumpkin pie spice
1 tsp. ground ginger
1 can (15 ounces) pumpkin
1 cup chunky applesauce
3 1/2 cups chicken broth
3/4 cup heavy cream

Method

Melt butter in large saucepan on medium heat. Add onion; cook and stir 5 minutes or until softened. Stir in pumpkin pie spice and ginger.

Stir in pumpkin, applesauce and broth until well blended and smooth. Bring to boil, stirring occasionally. Reduce heat to low; simmer 5 minutes. Remove from heat. (If a smoother soup is desired, place mixture in batches in blender container; cover and blend until smooth.) Stir in cream. Heat gently before serving, if necessary.

McCormick.com

CREAMY CHICKEN NOODLE STEW

Ingredients:

1/3 cup butter, cubed
1 med. carrot, shredded
1 celery rib, finely chopped
1/3 cup all-purpose flour
1 carton (32 oz) chicken broth
1 cup whole milk
1 cup uncooked kluski noodles or other egg noodles
2 cups cubed cooked chicken
1 1/2 cups shredded cheddar cheese
1/4 tsp. salt
1/4 tsp. pepper

Method

In a large saucepan, heat butter over medium high heat; saute carrot and celery until tender, 3 to 5 minutes. Stir in flour until blended; gradually add the broth and milk. Bring to a boil, stirring constantly. Cook and stir until thickened, 1-2 minutes. Stir in the noodles. Reduce heat; simmer uncovered, until noodles are al dente, 8-10 minutes, stirring occasionally. Add the chicken, salt and pepper. Cook and stir until the chicken is heated through. Stir in the cheese until melted. Serve.

**Susan Mitzner
Balaton, Minn.**

CHICKEN NOODLE SOUP WITH ROTISSERIE CHICKEN

Ingredients:

1 tbsps. vegetable oil
1 1/2 cups chopped carrots, (about 1/2-inch)
1 1/2 cups chopped celery, (about 1/2-inch)
1 cup chopped white onion, (about 1/2-inch)
1 tbsps. rotisserie chicken seasoning
4 cups chicken stock
4 cups medium egg noodles
2 cups chopped rotisserie chicken
1 tbsps. parsley flakes

Method

Heat vegetable oil in large saucepan on medium-high heat. Add carrots, celery and onion; cook and stir 8 to 10 minutes until softened and lightly browned. Stir in Seasoning. Cook 1 minute.

Add stock and egg noodles. Bring to boil. Reduce heat; simmer 8 to 10 minutes until noodles are just tender.

Gently stir in chicken and salt. Simmer 2 minutes longer. Remove from heat. Stir in parsley to serve.

McCormick.com

Please send your favorite recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in December 2023. All entries must include your name, mailing address, phone number and cooperative name.

Tips to Stay Warm and Save Energy This Winter



Miranda Boutelle
Efficiency Services
Group

Q: My winter energy bills are typically higher. Can you offer advice on how to lower bills during colder months?

A: Colder weather can increase energy use and bills since heating accounts for the highest wintertime energy consumption in most homes. The amount of energy used to heat your home depends on your equipment, how you use it and the efficiency of your home's shell – the building components that separate the indoors from the outdoors.

It's important to know how your home is heated so you can make informed decisions on your energy use. It also helps you prepare for upcoming bills and avoid surprises that impact your budget. A forced-air furnace is the most common type of heating system and is fueled by natural gas, propane, oil or electricity. Heat pumps are growing in popularity and available for forced-air systems. If you have a forced-air system, check the filter regularly and replace when it's dirty. Ductless heat pumps, or mini-splits, boilers, radiant heat, baseboard heaters and electric resistance heaters are other common heating system types.

If you don't know what type of system you have, find the model number of your equipment and look it up online. You'll find information about the kind of system, how efficiently it operates and recommendations for servicing it, which can improve system efficiency.

We use energy to make our homes comfortable. The easiest and lowest-cost way to save money on heating is to keep your thermostat as low as your comfort will allow. The closer your home's temperature is to the outdoor temperature, the less energy is used.

The U.S. Department of Energy recommends a thermostat setting of 68 degrees in the winter while you are awake and lower when you are

asleep or away from home. Keep in mind that setting the temperature too low can cause pipes to freeze or moisture issues in some geographic locations.

Adding an additional layer of clothing, slippers or a hat can keep you comfortable in a cooler home.

Do you use electric resistance space heaters to heat a room or small section of your home? If so, you may see an increase on your electric bill. For example, let's say you use a 1,500-watt electric space heater to warm your living room while you watch TV or read a book. Operating that space heater for two hours a day at the U.S. average electricity rate of about 16 cents per kilowatt-hour will cost you about \$15 a month. Operating that same space heater for 12 hours a day will cost you about \$90 a month.

If you choose to use space heaters, use them safely. Keep them three feet away from anything flammable, do not leave them unattended and plug them directly into the outlet, not an extension cord or power strip.

Just as we put on a windbreaker to keep cold winds from blowing through a sweater, your home also benefits from blocking air movement. Air sealing can make a big improvement in the comfort of your home as well as provide energy savings. A common air sealing practice is applying weatherstripping to exterior doors and windows. You can also seal around plumbing penetrations to help eliminate drafts. A gap often exists between the drywall or wood and the plumbing pipes and drains. Filling these gaps with expanding foam can reduce drafts in bathrooms and kitchens.

Cold, windy winter days are the perfect time to find opportunities for air sealing. Rattling doors or moving curtains can indicate air leakage. Air leakage can occur where two different materials come together, like drywall and trim work. Cracked plaster and gaps in drywall can also cause drafts. Sealing the gaps saves energy and improves comfort.

As outdoor temperatures dip this winter, take a few proactive steps to maintain comfort in your home and keep your energy bill in check.



Jerry Hammerquist, middle, receives the Rural Neighbor Award.

Jerry Hammerquist

Honoring a Cooperative Leader

Shannon Marvel

shannon.marvel@sdrea.coop

It's a small wonder why someone like Jerry Hammerquist would win the 2023 Rural Neighbor Award, sponsored by Touchstone Energy Cooperatives. He's a community rancher who values his neighbors.

"Well it's pretty easy in our neighborhood to be a good neighbor because we've got good neighbors. We help them, they help me," Hammerquist said.

"There's nothing like having good neighbors, I'll grant you. We have the best neighborhood in South Dakota."

Hammerquist lives and ranches on the farm his grandfather first homesteaded in Caputa about 140 years ago.

When his father passed away in 1960, Hammerquist was a senior in high school.

"I got my classes changed so I could work on the ranch, then I started working for neighbors and sale barns. My wife got to working for the attorneys. And we got on with the federal U.S. Attorney. Without her, I wouldn't have made it. We ended up

having two kids, seven grandkids, and one great grand kid. Caputa is where I grew up. I'm still here," Hammerquist said.

Hammerquist got his start in the cooperative world when he was asked to be on a committee to find a candidate for the election in his area.

"I could not find any, so I was told to put my own name in – not thinking a thing about it," Hammerquist recalled.

He won the 1984 election. Back then, Hammerquist said things were simpler.

"We didn't have any complaints, it was very easy to start out with. Then I got to be an officer, and we grew like crazy," he said.

For almost four decades, Jerry has faithfully served as a board director for West River Electric Association for an impressive 39 years, 20 of those years as board chairman.

Hammerquist said it was an interesting time when he was the chairman of the Action Committee for Rural Electrification fundraiser. During that time, Hammerquist was able to get many people to donate to the fundraiser.

"I had a little trouble cooking the egg sometimes. It was a very good experience for me," he said.

Hammerquist not only manages a thriving ranch but has been a valued member of the Elks Club, Central States Fair, Western Junior Livestock Show, and the Western South Dakota Buckaroos.

He's served as a past president and director of the Pennington County Agricultural Stabilization and Conservation Service Farmers Home Administration.

Currently, he holds the position of president on the Rapid Valley Water Conservation District Board and has previously led Rushmore Electric and chaired Action Committee for Rural Electrification (ACRE) on behalf of the South Dakota Rural Electric Association.

He's also been recognized with significant community agricultural awards, including the Catalyst Club Good Neighbor award in 2010 and Ag Producer of the Year in 2018.

He's a recipient of the Black Hill Stock Show Hall of Fame/Silver Spur Award.

His advice to those who follow in his path is to remember that you're member owned.

"The customers do come first. And the employees," Hammerquist said. "It was all a real learning experience."



Jewel Cave's walls glisten with a coating of calcite crystals coating that give this cave its unique name. *Image credit: NPS*

BENEATH THE BLACK HILLS

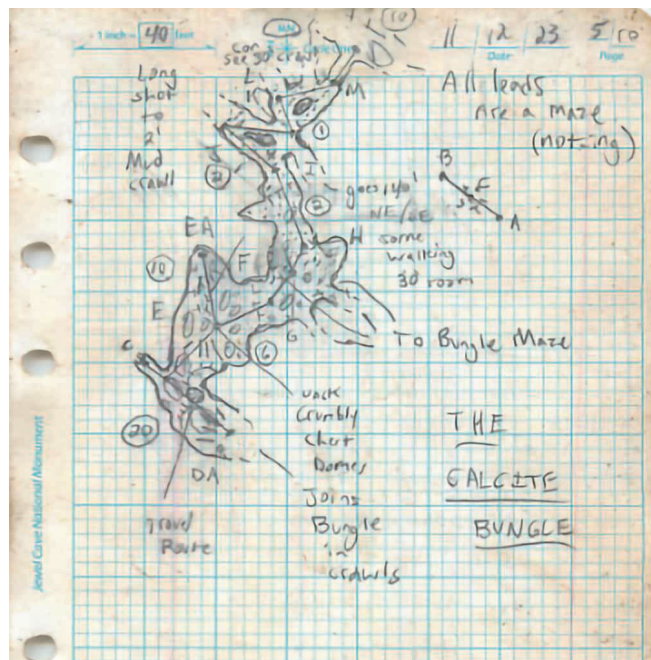
Charting Untrodden Miles in Jewel Cave

Frank Turner

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In the depths of the Black Hills lies an immense domain of underground caves renowned for their untouched beauty, enticing tourists with the opportunity for stunning photography and expert-led tours. Digging a little deeper, however, reveals that many of these unsuspecting attractions are actually home to a vast network of rooms and passages where no human has ever set foot before. Jewel Cave National Monument, located west of Custer and celebrated for its unique, crystal calcite coating, is one such subterranean cavern that continues to be a frontier of exploration.

Jewel Cave has thousands of miles of unexplored passages, crawlways and chasms that await discovery, making it one of the largest cave systems in the world. The immensity of Jewel Cave and others like it in the Black Hills has inspired multiple



A field sketch from the four-day Veterans Day weekend expedition. *Image credit: NPS*

generations of ambitious cave explorers who have devoted years of their lives to mapping out new areas of these underground expanses.

Despite their efforts, only a small fraction of Jewel Cave has

been navigated and mapped, leading to new cave discoveries being recorded even now.

Recently, a group of National Park Service volunteer cave explorers, led by volunteer Chris Pelczarski, expanded the known limits of Jewel Cave in an expedition over Veterans Day weekend of this year.

In total, their journey lasted four days. Bringing only what they could carry, the small group of cavers wriggled through miles of passages without natural sunlight or ready supplies to ultimately be the first to step into what was previously untrodden terrain.

To achieve their goal, the volunteers tackled the 3-D maze that defines the Jewel Cave network, hiking and climbing steep underground terrain. Despite the challenge, Pelczarski said the ending discovery made the whole journey worthwhile. When discovering something new, the challenge pales in comparison.

“The experience of pushing the edge of something is very unique,” said Pelczarski. “When entering a new space, it weighs on you that it’s the first time that a human has ever interacted with that space. As explorers, we have an incredible amount of responsibility because we are the ones who share that story with others and set the tone of that space.”

In total, the explorers discovered and charted just over one mile of new passages during their Veterans Day expedition, uncovering new passages and even a distinctive split in the rock their group named ‘Fruit by the Foot,’ due to the volunteer group garnering a “fruitful yield” of discovery from the rock formation.

The broader work of these cavers has led to several breakthroughs over the years, including the discovery of Jewel Cave’s first cave lake, Hourglass Lake.

“In 2015, our explorers got to a point where the lowest part of the cave dipped into the Madison Aquifer. It was Jewel Cave’s first cave lake,” said Michael Wiles, Chief of Resource Management at Jewel Cave National Monument. “Since that initial discovery, 12 more lakes have been

found within Jewel Cave.”

With the possibility of discovery around every corner, Wiles regards volunteer explorers like Pelczarski as torchbearers in a continuing legacy created by the many cave explorers that came before them, including South Dakota caving legends Herb and Jan Conn and Wiles himself.

“Herb and Jan are icons in the Black Hills area and throughout the world because they were the first to document and map the cave back in 1959,” said Wiles. “They fell in love with the cave and it really captured their imagination.”

Together, Herb and Jan discovered the first 70 miles of Jewel Cave. Building from Herb and Jan’s initial discoveries, Wiles, with the help of volunteers like Pelczarski,

has been involved in the mapping of an additional 150 miles of cave since the Conns retired.

To date, 218.8 miles of Jewel Cave have been discovered. However, Wiles explained that barometric airflow studies indicate that the cave could be up to 14,000 miles long, and only 3% of the cave’s estimated total length has been mapped and discovered.

“Jewel Cave, for practical purposes, isn’t going to end,” said Wiles. “We know that the cave is hundreds if not thousands of miles long and that, alone, is exciting.”

With only a fraction of the total cave discovered, it’s evident that several years of cave discoveries lie ahead.



Volunteer cave explorer Dan Austin sketching a passage of Jewel Cave. Using coordinates to draw a survey line in the book, Austin draws the cave walls around the line to represent the cave walls around him, adding additional notes as needed. *Image credit: NPS*

What are the Responsibilities of Your Cooperative Director?

As the opportunity draws near to elect your director representatives, it is an appropriate time to think about the role of a cooperative director, their responsibilities and the dedication it takes to fulfill this important role.

The elected director of the cooperative provides an important and necessary link between the member and those that are hired and paid to carry out the day-to-day activities of the cooperative. The director serves as an extension of the rights and responsibilities of the cooperative member. Joining with the other directors of the cooperative, they try with honesty, consistency, and good conscience to make decisions and set policies which are in the best interest of the cooperative and the members as a whole.

A director should establish communication with the members they represent. They need to understand their concerns and issues and welcome the member's opinions. A director is expected to read and be familiar with information, data and reports relating to their cooperative, along with state and national associations.

The responsibility of being a cooperative director requires a dedication and willingness to spend a possible 25 to 30 days each year in meeting these responsibilities. This commitment itself means a director is expected to attend regular monthly board meetings, which are typically held on the third Friday of each month and often lasts most of the day. It also requires attending the annual meeting and other periodic special meetings as needed.

Directors are encouraged to attend director seminars and training which help broaden the ability to make informed decisions on the issues facing the cooperative. These seminars may have topics on matters relating to financing, electric rates, power requirements, legal risk and regional and national issues of concern to rural electric members.

Outside meeting activities involve East River Electric Power Cooperative, South Dakota Rural Electric Association, Basin Electric Power Cooperative, National Rural Electric Cooperative Association and the Cooperative Finance Corporation. These co-op organizations and associations are all run by member representatives. Members of the H-D Electric board may be selected to be directors on these boards to represent the co-op and take part in the decisions made on behalf of those organizations. This is part of our cooperative system. Participation on these boards not only requires a dedication of time, it also requires the director to be knowledgeable on a wide range of state and national issues.

With the annual meeting coming up on March 19, 2024, please give some thought to the election of your representative on the board of H-D Electric. Think about what it takes to make the decisions required of them and the time they must spend to be prepared to make those decisions that will affect the whole cooperative.

2024 H-D Electric Director Election

H-D Electric director elections will be held at H-D Electric's annual meeting on **March 19, 2024**. The annual meeting this year will be at Hamlin Education Center in Hayti, S.D.

Director nominations are by petition only. Petition forms are available at the H-D Electric office and must be signed by at least fifteen memberships, (individuals of joint memberships count as one membership). Petitions will be available after **January 4, 2024** and must be returned to the office by **February 23, 2024**. However, because of publication deadlines, in order to have the candidate profile published in the March Cooperative Connections annual meeting report magazine, petitions should be submitted at or prior to **February 1, 2024**.

Three director districts for this year are:

- **District No. 5** - Altamont, Altamont Township, Clear Lake Township, and Brandt Township, Deuel County, South Dakota;
- **District No. 7** - Norden Township and Scandinavia Township, Deuel County, South Dakota, Oak Lake Township and Hendricks Township, Brookings County, South Dakota, and Fortier Township, Yellow Medicine County, Minnesota
- **District No. 8** - Blom Township, Grange Township, Deuel County, South Dakota, Estelline Township, Hamlin County, South Dakota and Argo Township, Eureka Township, and Preston Township, Brookings County, South Dakota

Attention High School Juniors and Seniors Win a Trip to Washington, D.C.

H-D Electric Cooperative will once again sponsor high school (juniors and seniors) on an all-expense-paid trip to Washington, D.C. Each June, over 1800 high school juniors and seniors travel to Washington, D.C., to participate in the Rural Electric Youth Tour. During the week, they learn about Washington, D.C., government, cooperative philosophy, and rural electrification. The students are selected and sponsored by their local rural electric cooperatives. The South Dakota Rural Electric Association (SDREA) coordinates arrangements for the South Dakota students.

Some of the sites that toured are the Lincoln Memorial, National Cathedral, The White House, Air and Space Museum, Washington Monument, U.S. Capitol, Ford's Theatre, and the Vietnam Veterans Memorial. Students will participate in a breakfast briefing with the South Dakota Congressional Delegation.

Who is Eligible? All area high school juniors and seniors whose parents are members of H-D Electric Cooperative.

What Does It Cost? H-D Electric Cooperative, along with the other local electric cooperatives that participate in the weeklong event, funds the tour. The funding for the tour provides for each participant's transportation, room and board, entertainment, and sightseeing events. Students are required to provide their spending money (snacks and souvenirs).

When is it Held? The weeklong trip will be held on June 15-21, 2024. Participants will meet for an orientation meeting on Saturday, June 15 in Sioux Falls. Then, the group will fly to D.C. on Sunday, June 16, and return to South Dakota on Friday, June 21. A commercial bus will be used for transportation while in D.C.

How do I Qualify? Complete the Rural Electric Youth Tour application form that is available from your school guidance counselor or H-D Electric Cooperative website www.h-delectric.coop or in person at H-D Electric headquarters. Submit completed applications to H-D Electric Cooperative before February 21st, 2024.

For more information contact:

Jami Bolden
18240 SD Hwy 15
PO Box 1007
Clear Lake, SD 57226
jamib@h-delectric.coop
605-874-2171
www.h-delectric.coop

Apply for Basin Electric and H-D Electric Scholarship

H-D Electric Cooperative will award one \$1,000 scholarship and two \$500 scholarships. To be eligible you must be a dependent of a member.

One of these scholarships will give preference to a student in an electrical/energy related field. Applications are available and must be completed and returned to H-D Electric by February 12th, 2024.

Recipients will be chosen according to criteria such as SAT/ACT scores, overall grade point averages, work experience, participation in school and community activities, a personal statement of career goals and a written recommendation by a third party.

Only the applications which provide all of the above information will be considered, so it is important to read the application thoroughly and complete every detail.

The applicant must be a student who is enrolled or planning to enroll in a full-time graduate or undergraduate course of study at an accredited, two year or four-year college, university, or vocational/technical school.

To apply, you must complete the required criteria and the scholarship application, which can be obtained from local high school guidance counselors, calling H-D Electric at 605-874-2171 or 800-358-7233, writing H-D Electric, PO Box 1007, Clear Lake, SD 57226 or via our Web site at www.h-delectric.coop. **Applications must be completed and returned to the office of H-D Electric by February 12, 2024.**





The Sanford Underground Research Facility partners with more than 2,000 scientists from more than 200 global institutions and universities, enabling groundbreaking research across multiple disciplines.

STRIKING GOLD IN SCIENCE

Unearthing Research at the Sanford Underground Research Facility

Frank Turner

frank.turner@sdrea.coop

Years ago, the Homestake Mine in Lead, South Dakota, lured prospectors with the promise of riches during the gold rush era. Yet today, the site where miners once delved for gold now hosts scientists pursuing their own discoveries, not for gold, but for discoveries in particle physics and dark matter at the Sanford Underground Research Facility.

The mine's transformation into a

state-of-the-art research facility really began in 1970 when Raymond Davis Jr. began what is now known today as the Homestake experiment, a research project that would forever change the entire landscape of western South Dakota. Seeing beyond the precious metal, Davis envisioned the Homestake Mine as the perfect location to conduct research on the illusive neutrino particle. Conducting neutrino research underground was a crucial component of the project because the deep

environment of the mine shielded his experiments from cosmic rays, allowing for more accurate detection of neutrinos. While the Homestake Mine was still in operation, Davis worked among the bustle of mining activities to conduct research, which led to groundbreaking discovery in neutrino research and ultimately to a Nobel Prize in 2002.

As Davis concluded his groundbreaking neutrino research, a chapter was closing for the Homestake Mine. According to the facility's website, Homestake was North America's largest and deepest gold mine at the time of its closing, producing approximately 41 million ounces of gold in its 126-year lifetime. When the mine was decommissioned in 2002, it threatened to not only leave a vast cavern in the earth but also a significant void in the local economy. Davis's success, however, prompted South Dakota's leadership to step in at a critical moment and

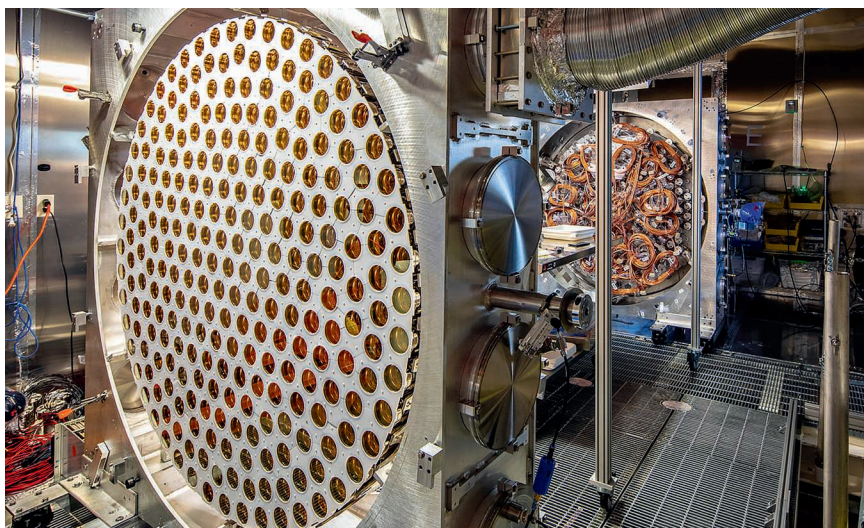
repurpose the mine into a bastion of scientific research.

Mike Ray, Media Relations Manager at Sanford Underground Research Facility, reflected on the state's response to the mine's closure. "Those in leadership at the time saw that this mine was closing and the terrible economic impact that the closure was going to have on the northern hills and this community, but they saw a light at the end of the tunnel," he said.

The light at the end of the tunnel became the Sanford Underground Research Facility. To advance one of South Dakota's most ambitious projects, the state secured a \$70 million donation from philanthropist T. Denny Sanford and a land donation from Barrick Gold Corporation, the mine's owner. The state then established the South Dakota Science and Technology Authority, which contributed an additional \$40 million to realize the project. These donations paved the way forward to begin construction on a space for some of the most advanced science projects ever made.

The herculean effort, Ray explained, was not only to mitigate the negative economic impact of the mine's closure but to create something even more impactful for South Dakota and its residents. Today, the Sanford Underground Research Facility collaborators include over 2,000 scientists from over 200 institutions and universities worldwide. It is expected to garner an estimated \$2 billion net economic impact in South Dakota by 2029.

Beyond its economic contributions, the lab holds potential for groundbreaking discoveries across various disciplines, including projects researching biology, geology, engineering or particle physics. Notably, the lab is currently home to LUX-ZEPLIN, the world's most sensitive dark matter detector and DUNE, the Deep



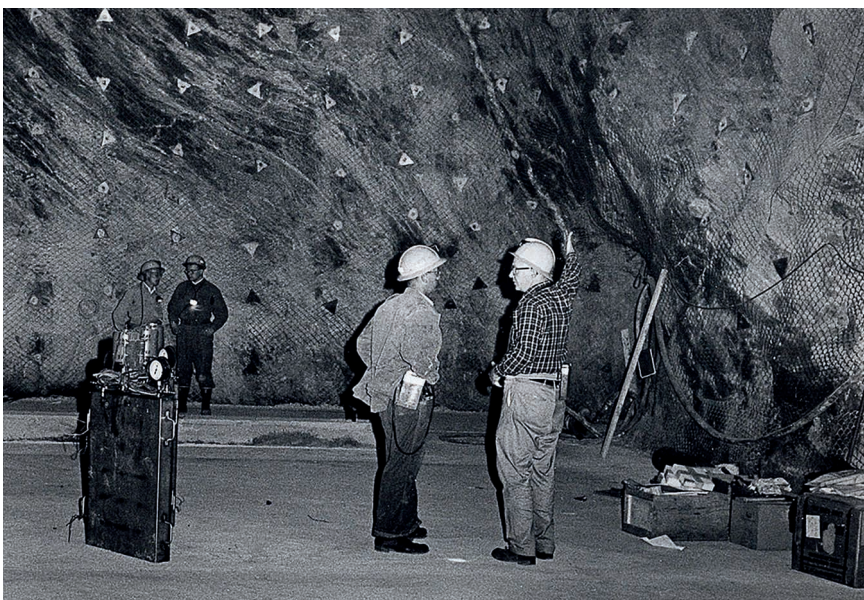
An array of the LUX-ZEPLIN, the world's most sensitive dark matter detector.
Photo Credit: Matthew Kapust, Sanford Underground Research Facility.

Underground Neutrino Experiment, among several other significant projects. While LUX-ZEPLIN and DUNE are distinct projects, both seek to provide fundamental insights into our current understanding of the laws of physics.

"There are so many examples of how fundamental research can take decades to lead to innovation," Ray said. "The beauty of this is that we don't always know where this research will

take us, but if we don't do this kind of exploration, we will never know the applications of these far-reaching projects."

Regardless of the outcome, the Sanford Underground Research Facility will continue to not only preserve the historic legacy of South Dakota's Homestake Mine, but also place South Dakota at the forefront of discovery and innovation for years to come.



A historic view of the Davis Cavern that hosted Ray Davis's Nobel Prize-winning solar neutrino experiment. The cavern has since been expanded and its walls have been coated with shotcrete, a type of spray-on concrete, to accommodate research on dark matter.
Photo Credit: Anna Davis, Sanford Underground Research Facility.



Shown in front of the True Dakotan building on Main Street in Wessington Springs are newspaper/print shop staff (left to right) Delia Atkinson, Office Manger; Kristi Hine, Editor/Publisher; Cathy Perry, Proofreader; shop dog Lincoln. Among the oldest buildings in Jerauld County, the building has always been a newspaper and/or print shop. Constructed in 1915, the True Dakotan recently underwent a complete renovation after a fire in June 2020.

SMALL TOWN NEWSPAPERS

Connecting Communities

Shannon Marvel

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Rural, small-town newspapers are an important cohesive element that keep communities together.

Many of South Dakota's community newspapers have faced economic difficulties, yet their dedication to their mission is what drives them to find innovative ways to persist.

According to South Dakota NewsMedia Association's Executive Director David Bordewyk, a combination of factors have made it difficult for small, community newspapers to thrive

as they once did in decades past.

"There's a lot of advertising that used to be in traditional media that has moved into a digital realm such as Google, Facebook and other platforms. That's been a huge disruption. Then there's the whole thing about the internet and how people consume information," Bordewyk said.

The pandemic had a major impact on the newspaper business and accelerated online advertising.

Inflation has also increased production and postal service costs considerably, which has made it tough for small, rural newspapers to balance their books and maintain profits.

"Almost all of our community newspapers rely on a postal service to deliver the newspaper to subscribers. And we've seen a 40 percent rise in postal rates over the last three years," Bordewyk said.

How do newspapers deal with that?

Some newspapers have done a good job of capturing that digital market, Bordewyk said. Others have really gotten aggressive at increasing their prices, with some having to increase subscription rates from \$40 to \$80 per year.

Regardless, there's value in a community newspaper.

Who else is going to consistently cover city council and county commission meetings, or local school activities and sports? Kristi Hine knows that value well.

Hine is the publisher and editor of the True Dakotan, a weekly newspaper that covers local happenings in Jerauld County, based in Wessington Springs.

"Newspapers play such an important role to keep communities together," Hine said.

"We cover everything from local government to high school sports to features. I just did a feature about these women who did a Christmas village exhibit at the county courthouse. It's peeling back the layers and truly telling the community's story. Without the local newspaper, there's no one to tell that story. Larger outlets may come cover a story if you have a tornado or your sports team is doing really well, but it's the community newspaper that'll be listening in on what the city council is going to say at their meeting," Hine said.

Community newspapers, in that sense, really are the eyes and ears for the community. The important goal of the community newspaper is to connect the community, Hine said. "Especially in this world when it's so easy to be on different sides of the spectrum. Community newspapers are the fabric that holds communities together, no matter what side of the aisle their readers land on," she said. "Especially in this world when it's so easy to be on different sides of the spectrum. Community newspapers are the fabric that keeps communities together, no matter what aisle their readers land on," she said.

Hine bought the True Dakotan eight years ago in March of 2015. Originally from Phoenix, Arizona, the newspaperwoman

has found herself enthralled with the small Jerauld County community.

Over the last eight years, Hine said she's seen more changes in the newspaper industry than her predecessor saw in the last 40 years.

"There's been a great deal of change," Hine said.

She's gotten more creative with advertising, using social media as a tool to promote local businesses. If a business is hosting an event or wants to promote a special sale, the business will do a Facebook live with Hine.

The True Dakotan also offers an online E-Edition and weekly newsletter, though the original print product is still the largest circulation.

Advertising and marketing aside, it all comes down to local news content.

"That's the driving force as we enter this evolution of newspapers. We're at the crux," Hine said.

To the northeast in Day County, the Reporter and Farmer newspaper is being led by Amanda (Fanger) Dulitz, a young reporter-turned-publisher, who recently purchased operation last year.

"Community newspapers are the lifeblood of a community. The strength of a community is reflected in the strength of their community newspaper. We're the bulletin board of the community. We're the cheerleaders of the community. We keep people connected," Dulitz said.

Dulitz found her passion for rural newspapers in South Dakota as soon as she picked up the reporter pad in 2007 after graduating from high school.

She worked at the Onida Watchman for a short time before heading east to Webster, where she took on the role as a news reporter for the Reporter and Farmer. Fast forward a couple decades and now Dulitz is the owner of the Reporter and Farmer.

She noted that costs were pretty stable at the newspaper for awhile, but seemed to sharply increase as soon as she signed the dotted line giving her ownership of the

operation.

"I'll probably have to take a look at my rates and lock in my rates for the next year. Everything is just going up, and it impacts the bottom line overall and you've got to do what you've got to do," she lamented.

But without the support of subscribers and advertisers, and really the entire community as a whole, the newspaper couldn't fulfill its purpose of keeping everyone on the same page and in the know.

The relationship between a community newspaper and the community itself is something Dulitz compares to a team of horses.

"The newspaper keeps everybody in an area knowing what's going on and pulling in the same direction. One horse can only pull so much, but if you put them together they can pull double. That community unity – the newspaper – is what yokes people together and gets people pulling together," Dulitz said.

She understands that without the community support, there'd be no newspaper.

"We've got some of those readers when the paper gets back from the press on



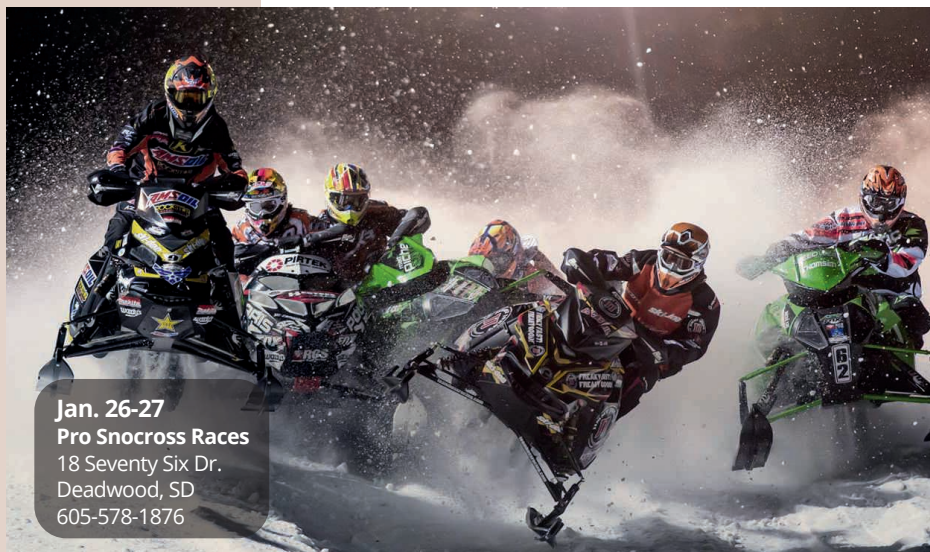
Kristi Hine, editor/publisher, True Dakotan and Delia Atkinson, office manager

Friday – they're standing there waiting for the paper to be dropped off. They're the first ones in the door letting us know about some breaking news event that we haven't heard about yet," she said.

"Constantly, readers and advertisers let us know what we're doing right and what we're doing wrong. We need that. We need that mutual push and pull. We recognize that our readers and advertisers are key to our business and we appreciate it."



From left is Publisher Amanda (Fanger) Dulitz, circulation manager Pat Sass, graphic designer Megan Garry, writer Kevin Winter, sales representative Kirstin Ure (front), print tech Jessica Washenberger and proofreader Linda Holberg.



Jan. 26-27
Pro Snocross Races
 18 Seventy Six Dr.
 Deadwood, SD
 605-578-1876

To have your event listed on this page, send complete information, including date, event, place and contact to your local electric cooperative. Include your name, address and daytime telephone number. Information must be submitted at least eight weeks prior to your event. Please call ahead to confirm date, time and location of event.

JAN. 5
Granite Sports Fantastic Friday
 3 p.m.
 Hill City, SD

JAN. 6
Live on Stage
 High Country Guest Ranch
 Hill City, SD

JAN. 10
45th Annual Ranchers Workshop
 9 a.m.
 Sinte Gleska University Multi-Purpose Center
 Mission, SD

JAN. 12
Granite Sports Fantastic Friday
 3 p.m.
 Hill City, SD

JAN. 13
Knights of Columbus Bowling Tournament
 1 p.m.
 Meadowood Lanes
 Rapid City, SD

JAN. 20
Live on Stage
 High Country Guest Ranch
 Hill City, SD

JAN. 23
A Trip to Chile (Reservations Required)
 6:30 p.m.
 Mangiamo
 Hill City, SD

JAN. 25
A Trip to Chile (Reservations Required)
 5:30 p.m.
 Mangiamo
 Hill City, SD

JAN. 26
Granite Sports Fantastic Friday
 3 p.m.
 Hill City, SD

JAN. 26-27
Reliance Area Community Development 29th Annual Dinner Theater
 6 p.m.
 Reliance Legion Hall
 Reliance, SD

FEB. 3
Live On Stage
 High Country Guest Ranch
 Hill City, SD

FEB. 3
Lake Hendricks Fishing Derby
 11a.m.
 City Boat Landing
 Hendricks, MN

FEB. 10
Polar Bear Chili Cook-Off
 11a.m.
 Main Street
 Hill City, SD

FEB. 10
Tour de Chocolate
 Main Street
 Hill City, SD

FEB. 17
Live On Stage
 High Country Guest Ranch
 Hill City, SD

FEB. 18-20
MASC presents Disaster! the Musical
 Vesta Community Center
 Vesta, MN

FEB. 20
A Trip to Portugal
 6:30 p.m.
 Mangiamo
 Hill City, SD

FEB. 22
A Trip to Portugal
 6:30 p.m.
 Mangiamo
 Hill City, SD

FEB. 23-24
Women in Blue Jeans Conference
 Highland Conference Center
 Mitchell, SD

Note: Please make sure to call ahead to verify the event is still being held.