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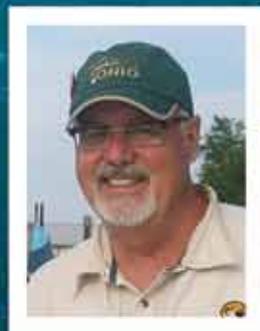
July/August 2012

Michigan

COUNTRY LINES



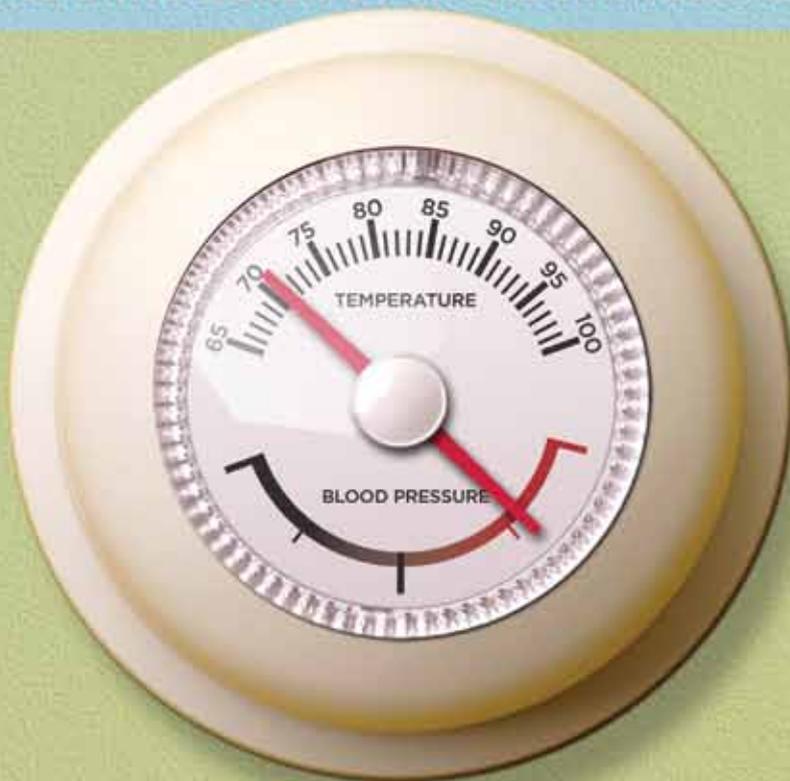
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Asian Carp Threat***
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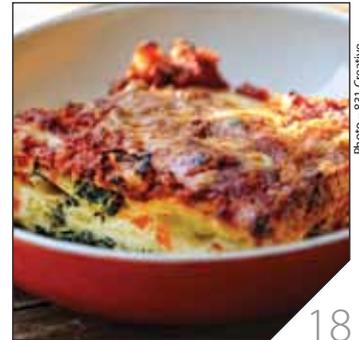


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On the Cover

Asian bighead (on display at Shedd Aquarium in Chicago) and silver carp are invasive fish that are threatening entry into Lake Michigan and the other Great Lakes. The carp are voracious eaters that are harmful to the Lakes' ecosystems and fishing industries.

Photo - Kate Gardiner





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MANAGER'S MESSAGE

Your Money, Your Decision

For decades, Cherryland has employed an energy use advisor to assist members with energy conservation issues.

Obviously, we want to sell our product but we also don't want it to be wasted. At the same time, I have always thought that energy conservation measures should be a personal or business decision for our residential, commercial and industrial members.

I believe that we will have more meaningful measures and real energy savings when members choose to spend their own funds on their own energy efficiency projects for real savings on their own energy bills.

Today, we have the state mandate under PA 295 that we call "Energy Optimization" or "EO" for short. Under this mandate, we are required to charge a monthly fee to every member to fund energy conservation programs, such as refrigerator rebates and recycling or free CFL bulbs.

We don't know where the recycled refrigerators or the lightbulbs are going, yet every member pays the bill for these measures.

So, we are working with the Michigan Public Service Commission (MPSC) on a possible "win-win" for all members.

Each member of Cherryland Electric Cooperative (CEC) has a capital credit account. This record shows the amount of money that the cooperative must repay each member for his or her share of past profits. These repayments or "retirements" of capital are determined by the board of directors annually, based on the cooperative's financial condition. You may recall the \$1.5 million that Cherryland returned to members in October 2011.

Co-ops around the U.S. have operated in similar fashion for more than 70 years. These capital credits are used as interest-free loans from the members to fund electric system maintenance and improvements. If we gave everyone 100 percent of their capital credit accounts today, we would have to borrow tens of millions of dollars and rates would go up considerably. Instead, the board uses the money for 20 to 30 years, which allows rates to be more stable.

What if you were allowed to draw out "your" money early to fund energy conservation measures approved under our EO program? Of course, \$1 in 2032 has a different value than \$1 in 2012, so the money would have to be discounted to present day value.

Thus, discounts would vary depending on how long a member had been with CEC. To get \$500 in your pocket today, you will likely need to have \$1,000 or more in your capital credit account. The choice becomes: "Do I take \$500 today for a new refrigerator, energy efficient electric water heater, etc., or \$40 per year for the next 25 years (assuming there is a retirement each year)?"

If Cherryland is successful in implementing such an "EO Capital Credits" program, we will eliminate the monthly line item charge on your bill. We currently are charging members approximately \$250,000 per year in this monthly charge. We have proposed to the MPSC that we could make twice this amount available under the EO Capital Credit program.

Where is the win-win? It lies in the discounted portion. The member in my example gets \$500 to spend on energy conservation. The other \$500 goes into "donated capital" on the co-op books. This is permanent equity that the co-op then never has to repay. Thus, as the next 25 years go by, CEC will have less capital credits to retire and this will help reduce future rate increases. So, the member who chooses to take the discount wins with real energy savings today, and the member who chooses not to gets lower rates in the future. Win-win.

We are excited about this possibility, and anxiously awaiting the MPSC's decision. This "first of its kind in Michigan" program virtually takes the state mandate issue off the table for us.

It can stay or go without affecting what we do at CEC while our members achieve meaningful and lasting energy savings measures funded with money already owed to them by their cooperative. Stay tuned for the outcome of our efforts in this area.



Tony Anderson
General Manager

The Co-op Advantage:

Capital Credits

This month, I want to cover an important and complex topic that also happens to be a bit on the dry side.

I am talking about “capital credits.” Cherryland Electric Cooperative (CEC) is currently holding over \$43 million in unretired capital credits, and as a member you are entitled to a proportionate share of that money.

To understand capital credits, let’s start at the beginning. Whenever Cherryland’s annual revenue exceeds annual expenses, the co-op generates a profit. But since CEC is a not-for-profit organization, the difference is called “margins”; it’s a bit of a semantics game at this point.

What to do with the margins is where the game ends and the real benefits of co-op membership begin. Eventually, all margins generated by the cooperative must be returned to its members.

The first step in returning margins is called an “assignment.” Margins are assigned based on proportionate revenue use during the year the margins were generated. For example, 10 percent revenue would be assigned 10 percent margins. The cooperative keeps annual records of assignment for every member. We refer to the total combined margins as capital credits.

Assignments generally take place in late spring or early summer (specifics will appear on your electric bill). The 2011 member assignments appeared on the June 2012 electric bills.

Once margins are assigned, they are put to work by the cooperative. Margins provide an essential source of operating capital which is used for line construction and maintenance, financing unforeseen events like the major storm in March, and enabling your co-op to avoid additional borrowing and interest costs.

After a period of time, when the cooperative’s financial condition warrants, assigned margins are returned to the membership; this is when the assigned margins get converted into real money. The number of years the

How it works:

Whenever Cherryland’s annual revenue exceeds annual expenses, the co-op generates a profit. But since CEC is a not-for-profit organization, the difference is called “**margins.**” Combined margins are called, “**capital credits.**” When capital credits, or margins, are returned to members, they are referred to as being “**retired.**”

cooperative waits before returning margins varies, but historically runs just under 25 years. For example, in October 2011 Cherryland returned margins to its members dating back to 1989.

The process of returning margins to the membership is called a “general retirement.” The retired margins appear on your bill as a billing credit. As noted above, in 2011 the retirement occurred in October and appeared on that month’s bill.

Retiring capital credits to members of record 23 years ago does not do much for the member who just joined the cooperative a few years ago. Since a key benefit of co-op membership is having margins returned as real money, our current general retirement policy states that 75 percent of the dollars earmarked for retirement go to the

oldest accounts of record and 25 percent to members of record in the prior year. In other words, assuming Cherryland makes a general retirement in October 2012, 75 percent of the retired dollars will go to members of record in 1989, and perhaps 1990, and 25 percent will go to members of record in 2011.

As you might imagine, not everyone who was a member in 1989 is still on our lines taking service. In these situations, we mail a retirement check to the forwarding address the member left us with when their account was closed. If the forwarding address is no longer valid, the check is returned to Cherryland.

In a final effort to locate people who did not receive their checks, we post their names on our website (cherrylandelectric.com). It’s worth a look. You just might know someone on the list and can alert them to the availability of these funds.

Finally, some members have asked whether it is possible to receive funds prior to a general retirement. Thus far, the only exception to the general retirement process has to do with estates. When a member passes, the cooperative will make an early retirement to that member’s estate, and funds are discounted to reflect the advance pay-out. If you are responsible for someone’s estate and that person was a CEC member, you should contact our office and inquire about our estate early retirement process.

As noted in General Manager Tony Anderson’s column (facing page), Cherryland is exploring a new program that would allow members to tap into their capital credit accounts early. I encourage you to read that article if you have not already done so.

Kevin Cragg is the member services manager at Cherryland Electric and oversees the Energy Optimization program



Letters

The "Ramblings" column (Mike Buda) about Father's Day, the U.S. Postal service, May Mystery Photo winner, scholarship winners, and the National Rural Electric Youth Tour to D.C. It's all here in your readers' pages.

"Family Man" Column

Just wanted to comment on how much I enjoyed your *Country Lines* column about your Dad. You were lucky having him so long, I lost mine in 1994. Like yours, mine was a great and interesting guy. While your Dad was in Guam, mine was in Saipan. Amazing how those young men just came home victorious and set about building families and lives. Like your Dad, mine rarely talked about his experiences there. They truly were a "great generation."

By the way, the back page is the first place I look every issue. Hope you keep it up for many years.

— *Tim Stockdale*

I really enjoyed the article about your dad. Thank you for telling part of your story, and his. It is uplifting to read about a man who put his family first, who had a natural ability to "keep things simple," and who enjoyed what he enjoyed! I'm ready for the book...his memoir and yours!

— *Janine Winkler*

As a 93-year-old WWII Veteran and long-time reader of *Country Lines*, I just

wanted you to know I enjoyed your handling of this personal story. It is "different" articles like yours that mix well with the usual "stuff" one finds in this type of publication. We have had a summer home in Michigan for many years and are so thankful to be able to spend parts of many summers on Lake Skegemog. We added our own 35-foot Lighthouse in 2008, which enhanced the attraction for us.

— *Wallace G. Holdsworth*

Wow! I can relate to your story, as I believe many others can, too.

Your story reminds me so much of my dad, who passed away in 2006. My dad served in the navy aboard the U.S.S. Savo Island, a small escort carrier, and served in WWII in the South Pacific.

Once out of the service, he became a builder and carpenter until he retired. He would then build lighthouses as a hobby out of cement molds in his shop later in life. They reminded him of his service days in the Navy and to this day many of them are in yards and by streams and lakes in the Kalamazoo area. Thanks for reminding us of our dads, and

how they worked hard to get where they wanted to be with their families. Enjoy reading your 'Ramblings'!

— *Larry Weststrate*

I was very pleased to see the article on America's National Parks and on behalf of the North Country National Scenic Trail, we thank you for the comments describing the trail.

The trail succeeds through the efforts of hundreds and hundreds of volunteers working in cooperation with many agencies at all levels of government, as well as private interests.

Threading its way across our landscape, the trail links outstanding scenic, natural, recreational, historic and cultural areas in seven of our northern states. Some portions of the trail invite easy walking, while others provide challenge, but everywhere the trail offers adventure.

— *Tim Hass, President Superior Shoreline Chapter NCTA, Munising*

Mystery Photo

The May Mystery Photo is the Mike Jylha Stadium in Alston, MI, on Hwy. M-38.

I spent many a summer Sunday watching the Alston Millers play teams from Trout Creek, South Range Ontonagon, plus others in the 1940s. The ball field was made and bleachers built in 1934. Right field fence was 440 feet from home plate and only one home run was hit over the fence—Paul Maki, catcher for L'Anse team

in 1952. It is reported to have traveled over 500 feet. The ball was found in the crotch of a tree and displayed at Yawkey's for several years. Yawkeys was an auto/truck repair and gas station across the road to the right of the picture. It was owned and run by my mother's cousin Aake Maki. Three of my cousins played on the team. Mike Jylha got the ball field started and was manager for many years. It was reported that he even made baseball bats during the Depression years at the Alston Sawmill where he worked.

— *Mary Ann Arvo, Suttons Bay*

U.S. Postal Service

My name is Ron Eaton, my wife and "Best Friend" of over 40 years is Karen. We reside in Vicksburg, MI, and have been co-op members since 1977.

In your May 2012 issue of *Country Lines* you ran a small column about why you send your great magazine.

Thank you for not only sending the magazine but for using the United States Postal Service to deliver it.

I am a retired letter carrier and am aware of the problems created by people and businesses not using the U.S.P.S. Not all of us have access to the internet and depend on the Postal Service to keep us abreast of all the services that you provide.

Thank you again for a great magazine and for using the U.S. mail. Please: Buy-A-Stamp – Send-A-Letter—Help preserve the Postal Service.

— *Ron Eaton, Vicksburg*



◀ DO YOU KNOW WHERE THIS IS?

Every co-op member who identifies the correct location of the photo at left by **August 10** will be entered in a drawing for a \$50 credit for electricity from their electric cooperative.

We do not accept Mystery Photo guesses by phone! Email mysteryphoto@countrylines.com, or send by mail to *Country Lines Mystery Photo*, 2859 W. Jolly Rd., Okemos, 48864. Include your name, address, phone number and name of your co-op. Only those sending complete information will be entered in the drawing. The winner will be announced in the September 2012 issue.

The May contest winner is Jim Hoover of Mass City, who correctly identified the photo as the Mike Jylha Stadium on M-38 near Alston in Houghton County.



Experience of a Lifetime

Michigan students tour Washington, D.C.

Seventeen high school students representing eight Michigan electric co-ops recently joined more than 1,500 other youth from across the country at the National Rural Electric Youth Tour to Washington, D.C.

The experience is an extension of the Michigan Youth Leadership Summit held in April, and is designed to give students a behind-the-scenes leadership experience.

The Michigan students visited memorials, museums and monuments, including guided tours through Arlington National Cemetery and the U.S. Capitol, stops at the WWII, Vietnam and Korean War Veterans' memorials, several Smithsonian museums, a performance at the Kennedy Center, and a riverboat cruise on the Potomac. The group also had personal visits with



PARTICIPANTS: Alger Delta – Annika Seaman; Cherryland Electric – Connor Bebb, Sam Surgalski; Cloverland Electric – Devin Livingston; Great Lakes Energy – Cassidy Bonar, Will Byl, Drew Graeber, Mackenzie Paulen, Elsa Puerner, Abbie Welch; HomeWorks – Becca Kirby, Blake Warchuck; Midwest Energy – Jeff Dickerson, Meagan Ruff; PIE&G – Trent Goudy, John Belusar; Thumb Electric – Alyssa Tyrrell.

Sen. Debbie Stabenow and U.S. Reps. Dan Benishek, Bill Huizenga, Justin Amash, the staff of Rep. Candice Miller, and Ways and Means Committee chair, Rep. Dave Camp.

At an election held in front of the U.S. Capitol building,

Drew Graber, a junior from Lake Isabella, earned the support of his peers to serve on the National Rural Electric Cooperative Association's Youth Leadership Council. He will return to D.C. in July to attend a youth conference that strengthens leadership and

public speaking skills.

Youth Tour participants are chosen by their co-op, who sponsors them on the trip. Learn more about co-op-sponsored youth programs at miYLS.com, and find more Youth Tour photos on facebook.com/youthleadershipsummit.

Scholarship Winners Announced

Charlotte Seeley and Jordon VanPamel have each won a \$1,000 scholarship from the Michigan Electric Cooperative Association (MECA).

Charlotte, daughter of Cherryland Electric members Jim and Andrea Seeley, graduated from Suttons Bay High School as salutatorian of her class. Active in sports, band, clubs and volunteering, she also had artwork published in a student art magazine. Charlotte will attend Michigan State University in the fall to study package design. Jordon is the son of Presque



Charlotte Seeley



Jordon VanPamel

Isle Electric & Gas Co-op members Scott and Bethany VanPamel and graduated from Hillman High School as valedictorian of his class. He received several academic recognitions and sports awards and was senior class president. Jordon plans to attend Saginaw Valley State University and pursue a career in sports medicine.

A total of 147 scholarship applications were received by MECA, which publishes *Michigan Country Lines* for the state's nine electric co-ops.

Notice to Large Commercial and Industrial Members

Public Act 295 allows for large Commercial and Industrial (C&I) accounts to self-direct their own Energy Optimization plans. For this year, a C&I member must have at least 1 megawatt (MW) of annual peak demand in 2011 (or 5 MW in aggregate) to qualify.

Details can be found at:

michigan.gov/mpsc/0,4639,7-159-52495_54478---,00.html or call your electric co-op for more information.

Need to change your *Country Lines* mailing address?



Contact your electric co-op—they maintain the mailing list. See page 4 for your co-op's contact information.

Zach's Lesson to Us:

Attitude Is Everything

Ever have one of those days when you just want to feel sorry for yourself?

After all, who doesn't wallow in the mud and enjoy a pity party once in awhile?

Actually, if you ever met 18-year-old Zach Radtke and heard what he has overcome to not only graduate from Kingsley High School, but to excel in the classroom, in athletics and in 4-H, you would consider yourself lucky.

Zach was born with spina bifida—a birth defect of the spine that can affect a person both physically and mentally—to long-time Cherryland members Marvin and Jodi Radtke in December 1993. Facing a long, uphill battle, the Radtke's could have thrown themselves a heck of a pity party.

Instead, they taught Zach a great life lesson at a very early age: Attitude and work ethic is everything.

"I know there are not many kids out there with spina bifida that are as fortunate as myself with their mobility, so I am very thankful for everything I can do," Zach explains.

And he can do plenty.

He won Cherryland's scholarship for high school seniors, worth \$4,000. He's going to use that money to attend Northwestern Michigan College for two years, then transfer to Eastern Michigan University to earn his master's degree in orthotics and prosthetics.

"The reason I picked this career is because I've had to wear leg orthotics my whole life," Zach says. "As I learned more about them and all the different designs, I became more interested in how they are created and how they function.

"I can see myself being good at putting myself in my patients' shoes and having empathy for them... which, as a patient myself, I know is very important."

To learn more about orthotics, he spent last summer job-shadowing at Active Brace



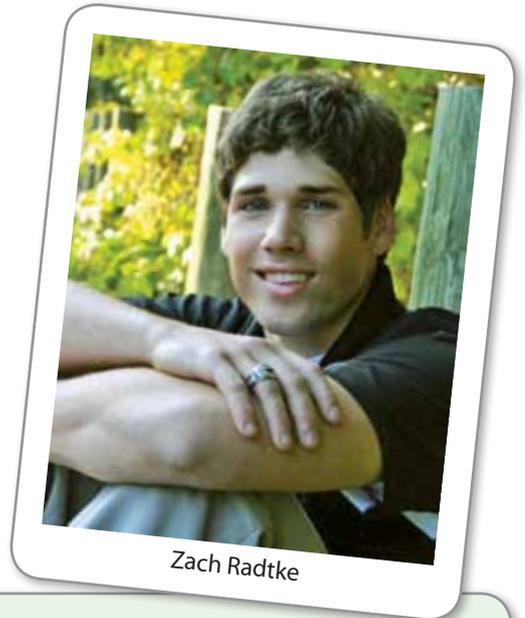
Nick Edson

& Limb in Traverse City.

"That just confirmed my interest in the field and furthered my fascination for the designs and mechanical aspects of the equipment," Zach adds.

And if you know Zach's track record, you'll realize his determination will carry him through, like it has for everything else in his life.

Despite wearing orthotics, he was the starting catcher for the Kingsley baseball team and won the Mr. Hus-



Zach Radtke

Winning isn't what sets Zach Radtke apart. Determination is his strongest attribute—and he never lets his physical limitations stop him.

tle Award all four years. He even earned post-season honors for his play.

As a student, he has been named student of the year in biology, economics and physical science. He is also a hunter safety instructor, and helps coach Pop Warner football in the fall and baseball in the summer.

His other summer "job" has been a passion for 10 years—an accomplished 4-H member. He raises pigs every year and sells them at the Northwestern Michigan Fair. He has been Grand Champion showman in 2008 and 2011, Reserve Grand Champion in 2009 and 2010, and Grand Champion Market in 2010.

But winning isn't what sets Zach Radtke apart. It's the relentless effort.

"Zach has been in our 4-H group for 10 years, and if any other 4-H kids needed anything—from help cleaning pens to questions about showing their swines, Zach would always be there with a helping hand," says Vanja Griffin, his 4-H leader.

"Determination is Zach's strongest attribute," says Missy Newell, one of his teachers at Kingsley High School. "He never quits. He never lets his physical limitations stop him. He inspires others with his attitude."

So the next time you are troubled and ask yourself the question, "Why?"

Stop and think about Zach Radtke and then ask yourself, "Why not?"



Goin' to the Fair!

The Northwestern Michigan Fair has been going strong since 1908. **Nick Edson**

How old is the Northwestern Michigan Fair?

Well, when the Fair was established back in 1908, the star player for the Detroit Tigers was Hall of Fame outfielder Ty Cobb and the team won the American League pennant. Now, we fast-forward 104 years and the Tigers and their fans still have the same dream.

But, the Fair? Well, this is the time of year when the radio and TV ads start with the all-too-familiar jingle, “Goin’ to the Fair.”

The event runs this year from Aug. 4-11, with rides open at 5 p.m. on Aug. 6. Cherryland Electric Cooperative serves electricity to the fairgrounds, and we sat down with Dana Cederquist, Northwestern Michigan Fair president, to talk about this year’s activities.

Country Lines: *What’s new at this year’s fair?*

Dana Cederquist: Well, there is lots going on. Arnold Amusements has a new ride called “Jubilee,” a tower-drop ride. And we have camping on the fairgrounds, with horse accommodations. We have a woman named Luree Magee who is a chainsaw carver on Tuesday through Saturday. The petting zoo and bingo are back because they proved to be very popular. And, we are expanding our social media presence with a new website, plus Facebook and Twitter. Check us out on the web.

CL: *Approximately how many people are*

involved in the fair each year, from volunteers to participants?

Dana: Right around 1,500 people when you take into account 4-H volunteers, participants and everyone associated with the Fair board.

CL: *That must take a great team effort.*

Dana: It does... both on the prep work, the building projects, fundraising and weekend activities that happen all year – not to mention the week of the fair.

CL: *There is a lot that goes on at the Fair. Tell us about that.*

Dana: Arnold Amusements are a big part of the fair each year and our food court is jammed with favorites like Gibby’s Fries and lots of other foods like ice cream, mouse ears, corn dogs, pasties, burgers, turkey legs and fried everything. One of our big events is our livestock auction that starts Thursday morning. The 4-H people—both adults and kids—do a great job with that. It teaches the kids responsibility and management of costs. Also, our arts & crafts section features all sorts of home projects. Our canning, cooking and gardening displays are popular, too.

CL: *How much can a family expect to pay to attend the Fair?*

Dana: Parking is free. If money is an issue, there are days when you can get in for \$1. There is a Vet’s Day for \$1, too. We have special deals for rides on certain days and there is no charge for watching chain saw carving, the petting zoo, 4-H animal viewing, and checking out the items in our barns.

CL: *How long has your family been associated with the Fair?*

Dana: In one way or another my immediate family, including my wife Lori, has been involved with the Fair for 30 years.

CL: *What’s your favorite part?... (and don’t say, ‘when it’s finished’)*



Dana: (Laughs.) I think talking with the people who are watching their kids with their animal projects. And, watching everyone make memories that will last a lifetime. Just ask any past 4-H person and they will tell you

how great that is and how much the Fair meant to them.

CL: *Do you ever get tired of hearing “Goin’ to the Fair” on TV and radio?*

Dana: Never (laughs). Well, almost never. But the great thing is that people all over the state recognize that jingle. When I say I’m from the Northwestern Michigan Fair in Traverse City, they just start singing.



First Mate Organizer Keeps Boats Ship-Shape

The owners of a family business created a new product for boaters and helped keep some jobs in the process.

Julie Irwin and her husband Todd discovered recreational boating about five years ago. As Great Lakes Energy members, they own a cottage on Torch Lake, where they caught boating fever.

A self-confessed “neat freak,” Julie was immediately frustrated with the lack of storage on boats for personal items like keys, cell phones or sunglasses. A duffle bag or a simple plastic bag works to bring supplies on-board, but many are neither compartmentalized or easy to stow securely.

Keeping her son’s prescription glasses in a cup holder on the boat made her uneasy, so she decided a container with pouches would do the trick—something to quickly, neatly and securely pack and store recreational supplies or personal items. However, such a product didn’t seem to exist.

The Irwins own the Delux Tents and Events company in Belleville and Lansing. It’s a thriving business started by Julie’s in-laws in 1966 that provides one-stop rental items such as tents, tables and chairs for family or commercial events.

Two years ago, they heard about a small

third-generation manufacturing company in Ann Arbor that closed. Well known for tents and awnings, they also produced canvas flags, boat covers and other custom canvas marine accessories, and the building still held a large stock of those items. The closing also stressed the company’s small workforce, who found themselves suddenly without jobs.

Seeing the advantage in acquiring the company’s stock of materials, plus adding a sewing staff with 50 years’ experience in producing and repairing canvas and marine products, the Irwins bought the company and put three of the employees back to work.

That’s when “everything just kind of fell into our laps and ‘the flow’ started,” Julie says.

She shared her boat organizer idea with the new employees. Together, they brainstormed a design and developed six- and eight-pocket versions of what today is called the “First Mate Organizer.”

“So many of the items needed, such as certain buckles and straps, they already had in stock,” Julie explains. “It was a fun, fun product to see unfold.”

Crafted from 100 denier nylon with a

urethane back coating and available in many colors, First Mate Organizer is water repellent, quick drying, and resistant to abrasion, rot and mildew. Open pockets provide places for smaller items such as eyeglasses, keys, flashlights or suntan lotion. A larger two-section pouch with a flap that snaps shut provides dry, secure storage for cell phones, cameras or magazines.

The design allows the organizer to be hung on a rail or fastened to a surface with clips or suction cups. To take the organizer along, you can simply fold it up, snap it together, attach the strap, and throw it over your shoulder like a tote bag.

While the product was designed for people who boat, Julie notes that others who find it useful now include campers, hunters and horse and motor home owners. Personally, she also uses one in her car.

The FirstMate is available online (see firstmateorganizer.com or call 877-824-7946) for \$34.99 (six-pocket) and \$39.99 (eight-pocket). To keep her employees busy, Julie explains, she purposely set the pricing so that people would want to buy. She emphasizes that the product helps fulfill a pledge to employees who came from the company the Irwins acquired.

“We told them we’d make work for them,” Julie says. “We’re trying our best to keep this wonderful state’s economy moving forward.”



Tell us about your favorite, or a unique, Michigan-made product. Email czuker@meca.coop or send to: Country Lines, 2859 W. Jolly Rd., Okemos, MI 48864. Be sure to share why you like it, or a unique story to go with it.

Co-op Electric Meters Are Different

The meter your co-op uses to measure the electricity you consume is different from what other utilities use.

For over eight years, Michigan electric co-ops have used a leading technology called automated meter reading (AMR). Automated meters are different because they send your electric use reading over the power line instead of using radio transmission or wireless technology. Therefore, they do not produce radiation or emit radio frequencies that some claim are a health concern.

“Studies have shown that meters using radio frequencies are safe, but co-ops do not even use them, so there are no safety issues with the AMR system,” explains Tom Harrell, general manager of Alger Delta Electric, Michigan’s second-smallest co-op (10,000+), in Gladstone.

“The AMR system only records kilowatt-hours consumed, time and day, meter number, serial number and account number,” Harrell adds. Further, it doesn’t control appliances and can’t send electric use data or price signals instantly back to you.

What Can Automated Meters Do?

How then, do these units benefit you as a co-op owner and member?

“There is no doubt that the AMR technology used by the co-ops has revolutionized their service and business for the better—the benefits are real and numerous,” says Elton Veenstra, operations and engineering manager for Michigan’s largest co-op (120,000+ members), Great Lakes Energy.

For one, you don’t have to trudge out to read the meter—especially in the snow. Before AMR, especially in the rural areas served by co-ops, manual meter reads really increased costs, and member readings or estimates often led to large bills when an actual meter read occurred. “AMR solves all of these issues,” Veenstra says.

“We invested in the AMR technology because it can accurately and securely transmit meter readings to our office over the power lines in a matter of seconds,” agrees Chris Jensen, a system engineer at HomeWorks Tri-County Electric, a medium-sized co-op (over 22,000) headquartered in Portland.

The AMR system reads the meters daily and exports it into the billing system. “This improves billing accuracy,” Jensen adds, “by

eliminating estimated billing and the need to hand-key meter readings into the system.”

Other Benefits

The AMR system is an excellent example of how co-ops invest in technologies that control costs and improve service. Added AMR benefits include offering members access to their electric use history online; employee/public safety and environmental benefits through reduced fuel and travel costs; easy account transfers; a decrease in meter tampering/energy theft that costs all members more money; more efficient work planning; and shorter outages.

“This technology helps us identify the location of an outage faster, which in turn speeds up restoration times,” Jensen says. During the record-breaking March snowstorm that affected five co-op service areas, automated meters helped restore power more quickly.

“The co-op can send a signal to the automated meters in any given area that prompts them to send a return signal,” Veenstra explains. “Those that fail to reply are likely at homes without power, and these locations are relayed to nearby crews who make the repairs before moving on to the next area.” This helps co-ops restore power to some homes before the owners are even aware of the outage. “Without AMR, restoration after this storm would’ve taken significantly longer,” Veenstra says.

The system also provides voltage data that helps engineers prioritize improvements and predict where outages may occur.

Take Control of Your Own Data

Using the detailed energy use data available through automated meters, you can take control of and make your energy information work for you. Some co-ops (not all have this) can provide you with information about your energy use at different times of the day.

“Armed with a better understanding of

Quick Facts On Automated Meters:

- You don’t have to ‘read the meter’
- Can help save money & energy
- Online access to electric history
- Faster outage response
- Shorter outage times
- Accurate billing/no estimated bills



Photo - Jayne Graham

Becky Beard, a HomeWorks Tri-County Electric customer service rep, uses AMR data to help members understand their energy use.

their energy use, members can make informed decisions on how to optimize their electricity use and reduce their bills,” Veenstra says.

Help With High Bill Concerns

Co-op staff can use the data to help you check on or resolve high bill problems, too. “Meter readings available by the day or hour can pinpoint when most of the usage occurred,” Veenstra says, “and this information helps determine what caused the higher usage.”

Great Lakes Energy member Ruby VanAlstine found out how much the AMR data can help when her electric bill suddenly doubled. “I’m 82-years-old and it’s not easy paying those kind of bills, but when I called the Great Lakes office, they were very good about it and looked at my electric bill and saw it was true,” she says.

By working with VanAlstine and studying a graph of her 24-hour power use, a GLE technical support rep was able to determine that her well pump was running continuously. “We had to call in a well man and they had to dig up the pipes because our well had been put in 35 years ago, and some rusty pipes were causing the problem,” VanAlstine explains.

VanAlstine’s well is working good now, and she says, “I really have to thank them at the [Great Lakes Energy] office because I wouldn’t have known what the problem was without them.”

Some co-ops even have AMR technology that allows you to access your meter reading history online and check to see if your power is out or has been restored after an outage. This is especially helpful for frequent travelers or seasonal residents.

You can see why it’s good to know the type of technology used to read your meter. Especially since some co-ops don’t have automated meters, and others don’t have all the features noted here. Either way, we hope this knowledge makes you proud that co-ops get an “A” for being different.



Michigan On Guard Against Asian Carp

Photo - Great Lakes Fishery Commission

By Bob Gwizdz

The threat of Asian carp entering the Great Lakes involves so many different jurisdictions that most observers pin their hopes on a federal solution to avert an ecological nightmare. And while Michigan natural resources officials continue to press for federal action, they are not sitting on their hands waiting; they've gone on the offensive themselves.

"We have a plan in place for the detection and surveillance of Asian carp as well as what our response would be if they were detected," explains Tammy Newcomb, who

Two species of Asian carp—the silver and bighead—currently found in the Mississippi and Illinois rivers, are voracious eaters and grow fast. Silver carp (above) are also known to leap out of the water. Visit asiancarp.us to learn more.

heads up research for the Department of Natural Resources (DNR) Fisheries Division. "We're doing everything we can to keep them out of here and if we do get them in here, we're going to do everything we can to not only prevent them from spreading, but to extirpate them."

Everyone's main concern is that the carp, which are about 50 miles from Lake Michigan, will breach the electronic barriers in the Chicago Sanitary and Ship Canal and invade the Great Lakes. But there are other possible vectors.

"We are particularly concerned about bait fish," Newcomb said. "The DNR [see michigan.gov/dnr] has produced a brochure to help anglers tell Asian carp from other common bait fish, and we're developing a video to further that effort."

Newcomb's concern about Asian carp being introduced through bait buckets seems to be supported by the recent discovery of a

couple of large Asian carp that were found by Illinois Department of Natural Resources fisheries biologists in a Chicago park lagoon that is separated from the Chicago canal. Officials believe the fish wound up in the lagoon because anglers used them for bait years before.

Seizures of live Asian carp in January and February by Canadian officials at the Ambassador Bridge in Windsor—more than 20,000 pounds in three separate incidents—prove that the fish are being illegally transported through Michigan. A traffic accident involving any one of those trucks could have resulted in fish entering Great Lakes waterways.

Recently, Michigan conservation officers arrested fish farmers from Arkansas selling illegal grass carp in Michigan. And while that's a slightly different issue—grass carp were on the prohibited species list many years before the other Asian carp species were added—it points to the potential of fish entering the Great Lakes through illegal trade.

Observers are of two minds about the progress of federal action.

"As a member of the Asian carp coordinating committee, I have been pleasantly surprised by the amount of work being done on the federal side in coordination with the states," said Patty Birkholz, a former state senator who oversees the Michigan Department of Environmental Quality's Office of the Great Lakes.

But Erin McDonough, executive director of Michigan United Conservation Clubs, says federal action is too slow.

"This is an issue of immediacy," said McDonough, who believes Asian carp deserve the attention of the candidates in the upcoming presidential election. "We want to see the Army Corps of Engineers put into effect a separation of the watersheds in the Great Lakes Basin from the Mississippi River now."

McDonough praised recent bipartisan federal legislation offered by Sen. Debbie

Stabenow (D-Lansing) and Rep. Dave Camp (R-Midland) to speed up the process.

The Stop Invasive Species Act would require a federal action plan to stop Asian carp from entering the Great Lakes through a number of rivers and tributaries. If passed, the legislation would direct the Corps of Engineers to develop a plan to permanently separate Lake Michigan from the Chicago waterway system.

Said Camp: "This measure expedites the necessary hydrological separation study in order to protect the Great Lakes and the hundreds of thousands of jobs the Great Lakes support."

"It has become clear that Asian carp are migrating throughout the Great Lakes region, and efforts to stop the spread of this invasive species must now address every possible point of entry," Stabenow said. "We can't afford to wait." Besides Michigan, media outlets have reported Asian carp in Minnesota and South Dakota.

The bill also requires the Army Corps to submit a progress report to Congress and the President within 90 days of the law's enactment. The full plan would need to be completed within 18 months.

As the federal plan takes shape, Michigan officials continue working on their own initiatives. The DNR is adding an employee to help implement the strategic plan and coordinate efforts with other state and Canadian officials.

"On the state side, we have some real possible solutions that are forthcoming," Birkholz says. "We are spending millions of dollars to deal with this."

Although some pessimists say entry of Asian carp in the Great Lakes is a foregone conclusion, Newcomb says "they're absolutely wrong."

"We have a plan," Newcomb explains. "Anglers are a part of our plan. But hydrological and/or ecological separation from infected waters is the ultimate solution."

What About Those Asian Carp?

Answers from John Goss, federal Asian Carp director, White House Council on Environmental Quality.

Q: Why is an Asian carp invasion such a big deal? What economic, recreational and environmental dangers does it present to Michigan?

A: The migration of Asian carp toward Lake Michigan is one of the most serious invasive species threats facing the Great Lakes today.

Bighead and silver carp are voracious eaters, capable of eating 5 to 20 percent of their body weight daily. They consume plankton—algae and other microscopic organisms—stripping the food web of the key source of nutrients for small and big fish. Silver carp are known for leaping out of the water at the sound of boat or jet-ski motors, causing physical harm to people and property. They pose a threat to the recreational and fishing economies of the Great Lakes states.

Q: Almost every Michigan electric co-op service area touches at least one of the Great Lakes. The irreparable harm an Asian carp invasion would cause is of special interest to co-ops and their member-owners.

As the Asian carp director, what is your role and best plan for handling this threat?

A: As the White House Council on Environmental Quality Asian carp director and chair of the Asian Carp Regional Coordinating Committee (ACRCC), I lead the Obama Administration's work to create a cohesive and comprehensive federal, state and local strategy to make certain that Asian carp do not become established within the Great Lakes.

Since 2010, the Administration has invested over \$150 million to protect the Great Lakes from Asian carp. The scale of this effort is unprecedented for invasive species prevention and unifies federal, state and local actions.

The "2012 Asian Carp Control Strategy Framework" outlines the priority actions planned and under way to address this threat, including management actions to prevent introduction and establishment, and

research to develop permanent controls on its populations. The Framework can be found at asiancarp.us.

Q: Fishing by commercial crews and biologists at spots below the existing Chicago barrier have already removed 25,736 Asian carp (asiancarp.us) in March and April 2012.

Is there any evidence showing that an Asian carp population already exists in Lake Michigan?

A: There is no evidence that there is an Asian carp population established above the electric dispersal barriers or within Lake Michigan. All of the evidence shows we are succeeding in keeping Asian carp out of the Great Lakes. The ACRCC has been vigilant in monitoring the Chicago Area Waterway System (CAWS) through extensive fishing, netting and environmental DNA testing for any sign they are advancing. Last year, we found no live Asian carp in the CAWS above the barriers after more than 40,000 hours of netting, electrofishing and keen observation by experienced fisheries biologists.

The Asian carp population front in the Upper Illinois River is over 80 miles from Lake Michigan. This front has not moved since 2007, partially as a result of the intensive removal you just mentioned.

Q: Even though the Army Corps of Engineers has said they will reveal a faster action plan, many are concerned and confused about how long it's taking the government to act on preventing the Asian carp from entering the Great Lakes and why more action isn't being taken quickly.

What is your response, so that people can understand?

A: The Administration took early action to keep Asian carp from reaching the Great Lakes. We've invested over \$150 million in a successful strategy for keeping them out of the Great Lakes while the Army Corps studies a long-term solution.

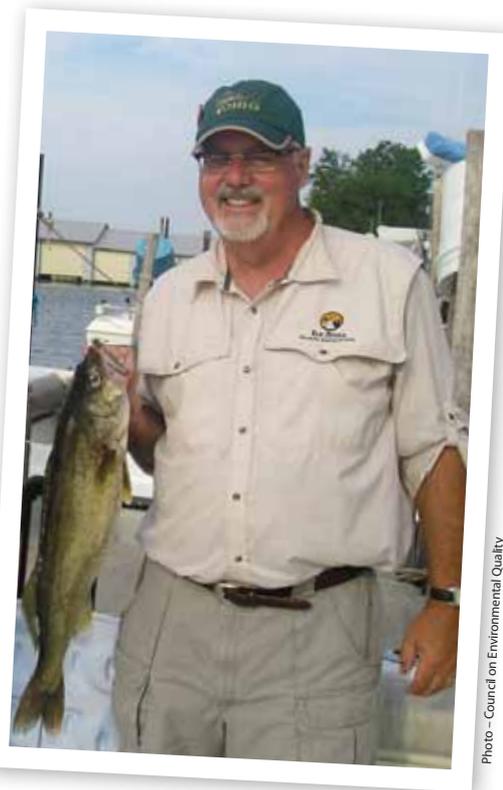


Photo - Council on Environmental Quality

The U.S. Geological Survey is also making exceptional progress in developing and testing physical controls such as water guns, chemical control tools like selective toxins, and pheromone attractants. Some of these may end up being extremely effective against Asian carp.

Q: A recent Great Lakes Commission (GLC) study says separating these waterways is feasible, will be a safeguard against migration through Chicago's waterway, and can be done while preserving its benefits to Illinois and Indiana.

Can this plan work, and will the government use the GLC report to help form decisions on a good battle plan? Can it help grease the decision-making wheels?

A: The Army Corps has said that hydrologic separation will be one of the options it evaluates, and they will incorporate information generated by the GLC Study, as appropriate. It's important to remember that hydrologic separation and permanent barriers are only one set of alternatives. While this is an important alternative to consider, it is not the only one that warrants evaluation.

The GLC Study estimates the cost of separation to be between \$3.9 and \$9.5 billion and take at least until 2029 to complete. Some of the technologies under review through the Great Lakes Maritime Research Institute have the potential to be

Continued ►

Asian Carp Q&A, *continued*

implemented more quickly and in a cost-effective manner.

Q: A recent power outage and equipment failure resulted in a 13-minute lapse during which the existing electronic Asian carp barrier (near Chicago) was inoperable. Has the investigation shown whether any of these fish were present then? Does this accident make the issue more urgent, and can electronic/existing barriers keep them out forever?

A: Backup generators were activated at the affected barriers, as designed. However, a utility power surge prevented the generators from delivering power to the barriers. The Corps is vigilant in monitoring the barriers, and when they noticed the issue, on-site personnel manually reset the circuit breaker to allow generator power until utility power was restored.

The Monitoring and Rapid Response Work Group (MRRWG), a subset of the ACRCC, is comprised of various state and federal agencies that monitor the CAWS for Asian carp activity and make recommendations for fish suppression activities. The MWRWG conducted an assessment of fish presence at the barriers the next day. The area is regularly monitored for Asian carp, and we have no reason to believe there were any in the area during the brief outage. It is important to remember that the Asian carp population is still quite a distance from Lake Michigan.

Q: Patty Birkholz, director of Michigan's Office of the Great Lakes, has endorsed the "do-able solutions" presented by the Great Lakes Commission study.

What is Michigan's role in the Asian carp dilemma, and are you working with Birkholz or other officials on any specific plans?



Photo - Dave Kenyon/MI DNR

This Mississippi River bighead carp shows how big they can get. Averaging 30-40 pounds, some can grow to be over 100 pounds.

A: Michigan is one of the eight Great Lakes states on the Asian Carp Regional Coordinating Committee. The ACRCC is the body charged with coordinating the federal, state and local entities working together to stop Asian carp from getting to the Great Lakes. We work very closely with Patty Birkholz and she is great to work with. Patty and other Michigan Department of Environmental Quality officials are actively involved in all of the ACRCC actions.

Q: Some media reports say Illinois legislators and business owners do not favor permanently separating the waterways.

How much is politics a barrier to addressing this issue quickly?

A: I think everyone appreciates the urgency of protecting the Great Lakes, and we have a successful plan in place. It is true that not everyone agrees on what the long-term solution is for Asian carp. That is why the

Army Corps recently announced they are going to give Congress and the public the chance to review alternatives and choose a solution in 2013, much earlier than anticipated. They will release an assessment of the best options for keeping carp out of the Great Lakes, including estimated costs and mitigation requirements for each option. So in 2013, we can all decide which option to move forward with and get going with a more detailed project design and path for implementation.

Q: Michigan has a \$5 billion annual sport fishing industry, and experts say trying to control the Asian carp after it enters the Great Lakes is nearly impossible and much more costly than the high price of prevention.

Can you enlighten our readers on this?

A: We know from experience that it is difficult and expensive to deal with an invasive species after they have established. Right now, we have a unique opportunity to stop Asian carp from invading the Great Lakes through the coordinated federal, state and local efforts. This effort is paying off. All of the evidence is showing that our strategy is successful, and giving us the time necessary to develop and implement a permanent solution to controlling Asian carp and other aquatic invasive species.

Q: As a fisherman, what is your personal experience with Asian carp?

A: I love to fish and have experienced salmon, perch and walleye fishing at its finest in Lake Michigan and Lake Erie. In Indiana, Asian carp are threatening some of my favorite small mouth bass streams like Sugar Creek and Blue River.

I am determined to protect our native fish populations from an Asian carp invasion.

Q: Is there anything regular citizens can do to help?

A: Absolutely. Public involvement is essential to preventing the spread of Asian carp to the Great Lakes. It is important to stay informed and participate in public meetings and comment opportunities.

The best way to stay on top of the latest information is to check asiancarp.us frequently. Here are some other ways you can help:

- ▶ Make sure you don't move live fish from one location to another.
- ▶ Never use wild-caught bait fish in waters other than where they came from.
- ▶ Learn the difference between juvenile Asian carp and juvenile gizzard shad, which look nearly identical (the Michigan DNR has a helpful brochure at michigan.gov/dnr).
- ▶ Drain lake or river water from live wells and bilges before leaving any body of water.
- ▶ Learn what to do if you find an Asian carp in the Great Lakes or its tributaries.
- ▶ Spread the word.



Photo - Great Lakes Fishery Commission

Resources & Maps:

- Video of jumping Asian carp (Great Lakes Fisheries Commission): glfc.org (click "Multimedia" & "Videos")
- asiancarp.us
- MI Dept. of Natural Resources: michigan.gov/dnr
- Illinois Dept. of Natural Resources: dnr.state.il.us/fish/

Visiting Trial Gardens Can Help You Choose Plants

Tired of using the same old plants in your garden and containers every year? Tired of buying plants that look great at the garden center but perform poorly at home? Well, think about taking a ride to a trial or display garden in your area.

Several steps take place when a new plant variety is developed, and before it's available for purchase. Once a plant breeder has a stable new variety, they sell it to a plant propagator who grows large quantities of it. These small plants are in turn sold to a grower who transplants them into cell packs or individual pots and grows them. Then the grower sells them to plant wholesalers, retailers and mail-order houses where you are able to buy the plant.

Along the way, a plant breeder or propagator wants to make sure that their new variety is fit for your garden. This is where trial gardens enter the picture.

Michigan State University (MSU) has extensive trial gardens for annuals, vegetables, native plants and herbaceous perennials. Being located in USDA Zone 5 puts their gardens in the same growing zone as most of the state, which is good news for home gardeners. Over 500 different cultivars are submitted by breeders, seed companies and nurseries to be tested in the MSU gardens. "We test plants that are suitable to grow in Michigan and evaluate these plants using a five-point system," says Katie McCarver, MSU trial garden manager. "One means the plant died, and five means the plant is awesome in terms of producing nice blooms, pest resistance, and being true to habit."

Evaluation starts two weeks after the plants are put in, around May 15-20. Then, they are evaluated every two weeks until the last frost. Each evaluation takes a whole day for McCarver and Art Cameron, MSU garden director, to assess all the varieties. Plant performance is dependent on a number of factors, including soil and weather conditions.

"Companies are looking for honest evaluations," McCarver explains. "I have to determine whether it's a failure in our growing conditions or breeding that causes a plant

Discover exciting new plants that will thrive in your garden.



Top: View hundreds of container plants on trial at the MSU annual plant trial garden.

Bottom: Michigan State University (MSU), in East Lansing, has one of the largest trial gardens in the state that is open to the public.

to die. Some plants just don't perform well."

Michigan State is also an All-American Selections (AAS) Trial Garden. "Think of All-American Selections as the Good Housekeeping seal of approval for plant varieties," comments AAS board member, Jenny Kuhn. AAS has trial gardens throughout the state and the country, and "Tested Nationally and Proven Locally" is their new tagline. Kuhn is also product specialist at C. Raker and Sons, a plant propagator in Litchfield, MI, which also opens its trial gardens to the public.

"Often, big-box stores sell plants that are bred to look well on their shelves to attract buyers," Kuhn adds. "But these plants do not necessarily do well in your garden. In AAS trial gardens, we are looking for plants that look well at retail but also perform in peoples' gardens." The AAS website offers both lists of its winners and trial gardens throughout the state.

In Michigan, plants are starting to look their best by mid-summer, so mid-July through mid-August are the best times to visit these test gardens. While you're there, Kuhn

recommends making notes of variety names that appeal to you, since most local garden centers are happy to order them for you.

For more information on visiting MSU's gardens, see hrt.msu.edu/our-gardens. There is a good brochure and map you can pick up at the information booth (open June through August) near the garden visitor parking lot.

If you can't visit the MSU gardens, don't worry—Katie McCarver posts early favorites on the web in mid-July, and a full report in October. You can also find last year's top-rated plants at gardens.hrt.msu.edu/ by clicking "Top Performers" in the left sidebar.

Rita C. Henehan is an author, freelance writer and photographer. For a complete list of public display and trial gardens throughout Michigan, and other gardening information, visit her website at michigangardenerscompanion.com.



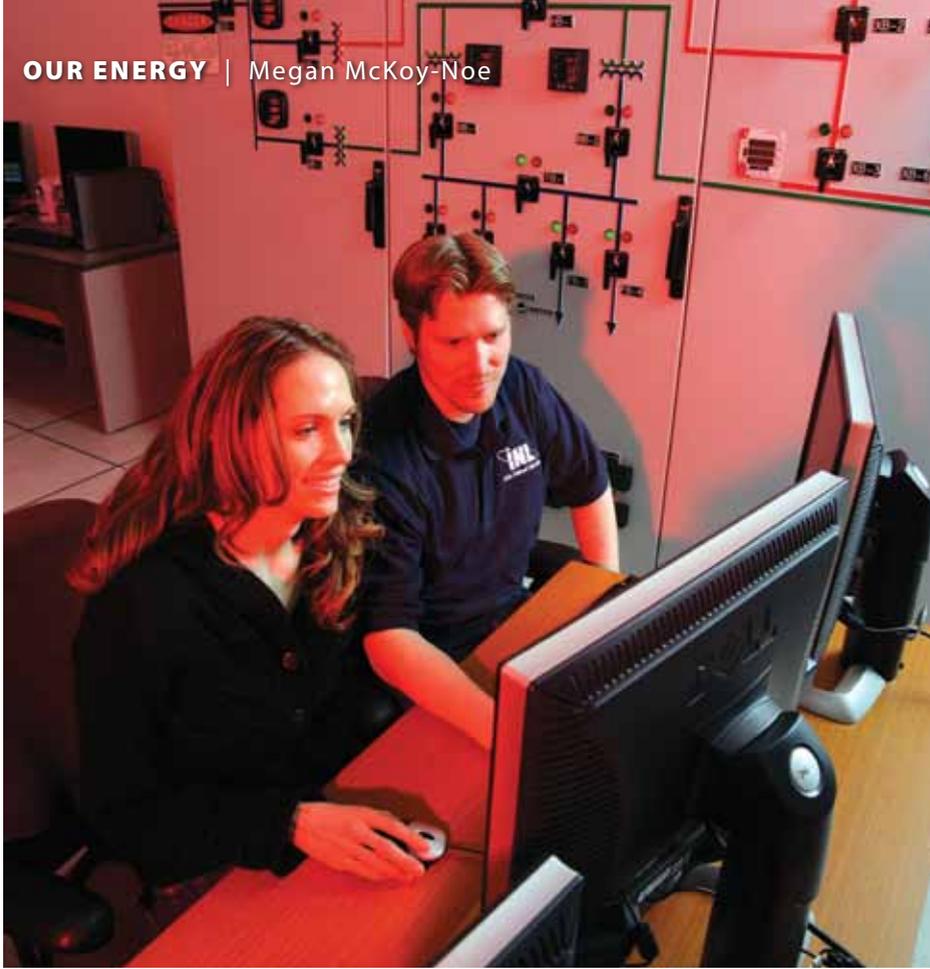


Photo - Sandia National Labs

Cyber security specialists from one of the U.S. Department of Energy's national labs conduct research on an electric utility Supervisory Control and Data Acquisition system.

card are required to use one of the self-serve options, including online, entering payment information themselves through the automated phone system, or using payment kiosks in the co-op's lobbies.

Computers rarely get hacked, Manting says, but instead people are often tricked into revealing personal information. "So, by removing our people from the transaction, we've greatly reduced the potential for criminals to access our systems."

Of note is that none of Michigan's electric co-ops sell member information to others, and many are updating or creating cyber security plans. And, while all the co-ops take precautions to protect their members' information, not all use the CRN plan.

For example, at Cherryland Electric Cooperative (over 34,000 members) in Grawn, IT Administrator Steve Weaver says, "In addition to the standard best practices of anti-virus and anti-Spyware installed on computers, encryption of members' data, and enterprise class firewalls installed, we use a service that monitors all inbound and outbound traffic looking for and blocking suspicious activity."

At Midwest Energy Cooperative in Cassopolis (over 30,000 members), they are currently doing a major information technology (IT) risk audit that will result in some significant changes. "We always want to be sure we're doing all we can to protect our members' information against identify theft and other threats that can result from our dependence on technology," says Candy Riem, member services manager. "The audit is intended to evaluate and improve the security of personal information and review all internal and external processes, systems and staff that impact daily operations. This action will help us identify risks and deficiencies, so that we are well-positioned to serve our members." Riem expects a formal strategic plan by the end of the year.

"At this time, we do have a firewall that is tested on a regular basis for potential threats," Riem adds. "We also encrypt certain pieces of our members' information in the system to help prevent identify theft if someone were to breach the system."

Great Lakes Energy, with over 101,000 members, uses plans from several sources, says Mike Youngs, director of information security and business continuity. "We use a variety of processes and technology, including

Cyber Security Patrols

Electric co-ops enhance efforts to protect their members' personal data and the reliability and security of their electric distribution systems.

Your home probably has several security features—door locks, bolts, and an alarm system. When it comes to cyber security, electric co-ops follow the same principle—building and reinforcing multiple layers of protection to safeguard your personal data from attacks.

Securing digital data on an electric distribution system isn't a "once and done" job. It's a continual process of evaluating and addressing risks, tightening measures, planning, and evaluating again. While it's difficult to thwart a determined computer hacker, with constant vigilance electric co-ops can significantly minimize the possibilities.

"Keeping our members' information secure is a top priority," explains Tom Manting, manager of finance and information technology at HomeWorks Tri-County Electric Cooperative in Portland, MI. "Technology constantly changes, requiring a 'continuously improving' approach towards cyber hazards."

HomeWorks Tri-County has over 22,000 members, and represents a national trend of cooperatives bulking up cyber security

with tools from the Cooperative Research Network (CRN), the research arm of the National Rural Electric Cooperative Association (NRECA). CRN's "Guide to Developing a Risk Mitigation and Cyber Security Plan," and supporting documents released in 2011 with funding support from the Department of Energy (DOE), help utilities of all types develop a process to shore up cyber defenses.

"Electric cooperatives have made substantial progress in cyber security without additional regulation because they owe it to their members to protect system reliability and prevent unauthorized access to personal information," explains Glenn English, NRECA's CEO.

Manting agrees, and at HomeWorks special precautions are taken to protect members' information in several ways. "Members are required to positively identify themselves when calling us, and we've completely purged our files of all credit card information," he explains. "Social Security numbers are also encrypted." And, members who wish to pay their energy bill with a credit

encryption, access control, malware protection and monitoring,” Youngs says.

Security Sweep

Electric co-ops have been working with the DOE, North American Electric Reliability Corporation (NERC), Federal Energy Regulatory Commission (FERC), U.S. Department of Homeland Security, the Obama administration, and the electric utility industry to strengthen cyber security. An assault on a co-op, for example, could be a prelude to, or part of, a coordinated cyber strike on the country’s power grid as a whole that could impact electric reliability. Last year, NERC, the nation’s electricity reliability watchdog, conducted an exercise dubbed “GridEx” to identify cyber security concerns and encourage utilities and government agencies to work together to resolve the issues uncovered.

“GridEx provided a realistic environment for organizations to assess their cyber response capabilities,” observes Brian Harrell, NERC’s manager of critical infrastructure protection standards. “Through the interaction, participants forged relationships across the cyber security community.”

A report on the test notes most utilities have adequate response plans in place, but more training and updated guidelines were suggested. Communication difficulties were also identified—a problem NERC will confront by developing outreach strategies for secure information sharing.

To further pinpoint cyber vulnerabilities, a seven-year utility system security study was conducted by the DOE’s Idaho National Laboratory (INL). Poor “patch management” was cited as the biggest utility weakness—patches fix publicly-known security problems.

To prevent would-be hackers from discovering security lapses, teams of grid guardians routinely scour electric distribution systems to find and fix weak spots.

“I look for vulnerabilities in control system software,” remarks May Chaffin, an INL cyber security researcher. “I try to get them repaired before someone takes advantage.”

Lessons learned from the GridEx activity and researchers like Chaffin have been incorporated into CRN’s cyber security toolkit. Based on best practices developed by the National Institute of Standards and Technology (NIST) and other industry groups, the guide focuses on procedures co-ops should adopt to continuously monitor cyber threats and enhance risk preparedness.

“CRN’s cyber security resources are well-rounded tools that helped make our existing security plan more complete and serve as

references for future projects,” Manting adds.

Andy Bochman, an energy security lead for IBM, praises CRN’s efforts. “While the [IT] community is waiting for [practical] implementation guides from NIST, CRN’s offering breaks things down into actionable, prioritized parts. It allows co-ops to travel down a well-marked path toward better cyber security and risk mitigation planning in the age of the smart grid.”

Regulating Security

The possibility of cyber mischief undermining the automated digital technologies used by utilities has Congress, the White House, and regulators considering the right balance of security and emergency response initiatives.

“There is no question that there will be some kind of legislation,” predicts English. “It’s important that policymakers make a distinction between what’s appropriate security for bulk power versus distribution systems. The question is whether what’s put forward makes sense, if it will be overly burdensome, and if it will make electricity less affordable for our members.”

In 2010, the U.S. House considered the

Grid Reliability and Infrastructure Defense Act. A similar measure, the Cyber Security Act of 2012, was introduced to the Senate in February. Both bills would provide the federal government with more power to draft cyber security standards, but would weaken the NERC/FERC partnership that allows industry stakeholders to help ensure standards are technically sound and able to be properly implemented. Cyber security experts at NRECA believe any legislation should focus on encouraging federal agencies to routinely provide actionable, timely intelligence about cyber threats and vulnerabilities to utility industry experts.

“Hackers are getting smarter, and for some, much of the fun is the challenge of beating your system,” observes Maurice Martin, CRN’s program manager. “Co-ops understand cyber security isn’t a one-time thing. Improved communications about potential trouble remains key to this effort.”

Electric co-ops are building cyber barricades and robust plans for addressing current and future dangers. But in a rapidly evolving cyber environment, there’s no such thing as perfect security.



Sandia National Laboratories computer scientists Ron Minnich (foreground) and Don Rudish have successfully run over 1 million Linux kernels as virtual machines, an achievement that will allow cyber security researchers to more effectively observe behavior found in malicious botnets (a collection of compromised computers, each of which is connected to the internet). They used Sandia’s Thunderbird supercomputing cluster for this demonstration.



Rhubarb Custard Pie

Zucchini Bread

3 large eggs
 1 c. vegetable oil
 2 c. brown sugar
 1 t. vanilla
 2 c. grated zucchini squash
 1/4 c. grated carrots
 3 c. flour
 1/2 t. salt
 3 t. cinnamon
 1 1/4 t. baking powder
 1 1/2 t. baking soda
 1 c. chopped nuts

Set oven to 350°. Spray two 9 x 5-inch loaf pans and set aside. In a large bowl, mix eggs, oil, sugar and vanilla. Add zucchini and carrots to mixture. Sift flour, salt, cinnamon, baking powder, and baking soda together in separate bowl and add dry mixture to zucchini mixture. Stir in nuts. Pour in sprayed pans. Bake 1 hour or until done. Cool 3 hours before slicing.

Deborah Black, Sandusky

Dill & Red Onion Vinaigrette

1/2 c. vegetable oil
 1/4 c. red-wine vinegar
 1/4 c. red onion, minced
 1 1/2 T. fresh dill, chopped
 1 T. fresh parsley, chopped
 1 t. dijon mustard

salt and freshly ground pepper to taste

Combine ingredients in jar or bottle that can be tightly sealed. Shake well before each use. Will keep for several weeks refrigerated.

Bonnie Bourn, Constantine

Summer Bread Salad

Bread:

1 T. olive oil
 1 T. butter
salt and fresh ground pepper, to taste
 1-2 cloves garlic, minced
 5-6 slices of bread, 1/2- to 1-inch cubes

Heat olive oil and butter in skillet. Add salt, pepper and garlic and stir for about 1 minute, until garlic is soft and fragrant. Add bread cubes and toss. Transfer to a small pan and bake at 300° for about 10 minutes, or until lightly toasted and browned.

Salad:

3 T. white balsamic vinegar
 1/4 c. olive oil
 1 small onion, minced
 1/2 lb. green beans, trimmed to 1-inch pieces, steamed 2 minutes and cooled
 2 small each zucchini and yellow summer squash, sliced, steamed 3 minutes and cooled

Garden Fresh

It's that time of year—when fruits and vegetables are looking and tasting their best. Whether you have your own garden, or shop at a local farm market, these recipes will inspire you to make the most of your produce.

Rhubarb Custard Pie ("Mom Style")

4 c. rhubarb, sliced into 1/2-inch slices
 1 1/2 c. sugar
 3 T. flour
 1/2 t. nutmeg

1 T. butter, room temperature
 2 eggs, beaten well
 9-inch unbaked pie crust

Preheat oven to 450°. Mix butter and 1 cup sugar until creamy. Blend in nutmeg and flour. Blend in eggs and set aside. Place rhubarb into pie crust. Pour mixture evenly over rhubarb. Bake for 10 minutes, then drop oven to 350° for 30 minutes or till lightly brown. Serve cold or room temp with whipped topping or ice cream.

Karen Richards, Wayland

Lasagna Primavera

2 10-oz. pkgs. chopped, frozen spinach
 15 ozs. ricotta cheese
 8 ozs. lasagna noodles
 1 26-oz. jar spaghetti sauce with mushrooms
 3 carrots, sliced 1/4-inch thick
 1 zucchini squash, sliced 1/4-inch thick
 1 summer squash, sliced 1/4-inch thick
 1 c. broccoli florets
 12 ozs. mozzarella cheese
 1/2 c. parmesan cheese

Thaw and drain spinach, mix with ricotta and set aside. Bring noodles to boil and cook 5 minutes, add carrots and cook 2 more minutes; add remaining vegetables and cook another 2 minutes or until noodles are done. Drain all. Spread 1/3 of sauce in bottom of 9x13-inch pan. Layer half the noodles, half cooked vegetables, half spinach mixture then half the mozzarella. Repeat with remaining noodles, vegetables, spinach mix and mozzarella, then top with remaining sauce. Sprinkle with parmesan and bake at 400° for 30 minutes. Let stand 10 minutes before cutting. If you prepare ahead and refrigerate, bake for 1 hour at 350°. Serves 10.

Victoria Nelson, Grand Rapids



Zucchini Bread

Photography by: 831 Creative

2 c. ripe cherry tomatoes, halved
1 cucumber, peeled, sliced and cut into
1/2-inch pieces

1/4 c. fresh basil, chopped
1/4 c. fresh parsley, chopped

1 t. salt and pepper, to taste

Combine vinegar, olive oil and onion in bowl. Set aside to allow onion to soften. In large bowl, mix beans, zucchini, squash, tomatoes, cucumber, herbs and seasonings. Drizzle with vinegar/oil mixture. Let stand for flavors to meld. Adjust salt and pepper accordingly. Toss salad with prepared bread right before serving. Serves 6-8.

Jennifer Sylvester, Sand Lake

Stuffed Zucchini

4 small zucchini

1/2 lb. cheddar cheese, grated

1 T. butter

1/2 t. lemon juice

1/2 t. granulated garlic

Prepare the zucchini by washing, cut in halves lengthwise. Hollow out, leaving 1/4 inch on all sides. Mix cheese, butter, lemon and garlic. Fill zucchinis with mixture. Cut a thin slice from bottom of each zucchini and place on baking sheet. Bake at 350° for 20 minutes or until bubbly. Serves 8.

Sherry Fisher, Paradise

Fresh Tomato Salsa

12 large tomatoes, peeled, cut into chunks

4 medium sweet onions, thinly sliced

4 stalks celery, sliced

2 green peppers, sliced

2 T. salt

2/3 c. sugar

1 c. cider vinegar

2 t. mustard seed

Combine all ingredients and mix until sugar is dissolved. Excellent with eggs, hash browns and many other things. Store in refrigerator. Makes about 2½ quarts.

Janice Harvey, Charlevoix

Summer Garden Medley

1 medium zucchini, sliced

1 medium yellow summer squash, sliced

1 medium onion, chopped

1 ear fresh sweet corn kernels

1 large tomato, cut into 8 wedges

1 T. chopped fresh parsley

1 clove garlic, minced

1 t. dried Italian seasoning

3/4 t. fine sea salt, divided

1/4 t. freshly ground black pepper

2 t. olive oil

2 T. butter, cut into parts

2 fresh basil leaves, chopped

Lightly coat bottom of 9x9x2-inch metal baking pan with olive oil. Swirl pan so bottom of pan is evenly coated. Arrange first five ingredients in pan. Sprinkle with parsley, garlic, Italian seasoning, 1/2 teaspoon salt, and pepper; dot with pats of butter. Prepare grill at 300°. Place pan on grill grate over direct heat. Grill, covered with grill lid, for 15 minutes. Turn vegetables over. Add onion and continue grilling for 5 minutes or until vegetables are tender. Lightly season tomatoes with remaining salt and add to pan; sprinkle basil on tomatoes. Cook another 3 minutes, just until tomatoes begin to become tender and warmed through. Serves 4.

Marilyn Partington Frame, Traverse City

Eggplant Caponata

1/4 c. olive oil

1 large eggplant, seeded, skinned and cut into
1/2-inch cubes

1/4 c. celery, chopped

1 clove garlic, chopped

1½ c. diced, seeded tomatoes

2 T. capers, rinsed and drained

3 T. red wine vinegar

1/2 c. fresh mixed herbs, chopped

1/2 c. black olives, chopped

salt and pepper, to taste

In large nonstick skillet, heat olive oil over medium heat. Add eggplant and celery; cook for 8 minutes, turning occasionally. Add garlic, tomatoes, capers, black olives, vinegar and

herbs. Heat for 2 minutes. Remove from heat; add salt and pepper to taste. Serve warm with crusty bread. Top with goat cheese, if desired. Lasts up to 5 days covered in refrigerator.

Eva Braganini, Mattawan

Fresh Yellow Squash Casserole

1 lb. or 3 medium yellow squash, sliced thin
with skins on

1/4 c. melted butter

1/2 green pepper, sliced or diced

1/2 c. onions, sliced or diced

3/4 c. mayonnaise

1 T. sugar

1 c. shredded cheddar cheese

Place all vegetables in sprayed 2-quart casserole; add butter, salt and pepper and toss to coat everything. Mix mayonnaise and sugar and spread over vegetables. Bake at 375° for 45 minutes. Sprinkle with cheddar cheese and bake an additional 10 to 15 minutes or until cheese is golden.

JoAnn Gach, Spruce

Zucchini-Tomato Soup

2 qts. tomatoes, peeled

2 c. zucchini, peeled and cut into chunks

1 c. chopped onion

salt and pepper, to taste

ham or sausage, cubed (optional)

celery, chopped (optional)

Bring all ingredients to boil; simmer about an hour. Zucchini will be opaque.

Martha Zahn, Interlochen



Lasagna Primavera

SUBMIT YOUR RECIPE! Contributors whose recipes we print in 2012 will be entered in a drawing. We'll draw one winner in December and pay their January 2013 electric bill (up to \$200) as a prize.

Thanks to all who sent in recipes! Upcoming: Please send in **TRICK-OR-SWEET** recipes by Aug. 10 and **TAKE-ALONG DISHES** by Sept. 10. Mail to: *Country Lines Recipes*, 2859 W. Jolly Rd., Okemos, MI 48864; or email recipes@countrylines.com.



Collecting Antique Bikes

By Al Parker

Rick Warfield's eyes twinkle when he talks about his love for antique motorcycles.

"I've always been interested in anything old," he explains. "Back in 1977, I had a '66 Honda 160. That sorta got me started on motorcycles."

A long-time member of Cherryland Electric Cooperative, Warfield's interest in history and vintage motorcycles prompted him to seek out others with the same passions.

He joined the Antique Motorcycle Club of America (AMCA). And, three years ago it just made sense to the Duck Lake area resident to found a local Great Lakes Chapter of the AMCA. Today, he is president of the group, which has about 50 members ranging from 30- to nearly 80-years-old, and meets monthly—usually at the Elks Club in Traverse City. Warfield's family is also involved, as his wife Raelene is the Great Lakes ACMA secretary, and his daughter Mandy is a board member.

It's one of four ACMA chapters in the state, and the only one in northern Michigan.

"We have all kinds of members," Warfield says. "Some guys try to get the bike that they had as a kid. Some do it for value, buying and selling bikes. Others collect for life and never get rid of their bikes. Some of the guys have no bikes at all, but they have an interest in the old bikes."

Many members specialize their collections, Warfield adds. "Some collect only Japanese bikes or American, Italian or

British," he explains. "One guy collects only Harley-Davidson racing bikes. He has 30 or 40 of 'em and goes around the country looking for more." Another guy has every model ever made by Kawasaki, with a collection of about 200. Another specializes in pre-World War I bikes and makes many of his own parts.

The northern Michigan AMCA also holds an annual rally, and is gearing up for this year's event on July 27-29 at the Eagles Campground in Interlochen. To learn more about the rally or club, visit greatlakesamca.com.

A crowd of about 1,000 turned out last year to see the vintage bikes, take part in the swap meet, and straddle the old bikes for an organized ride. There's also live music and lots of food at this family affair. Last year, the silent auction of biker items raised about \$1,000 for The Father Fred Foundation.

"We had a guy ride his '48 Harley up from the other side of Grand Rapids," Warfield says with a smile. Another guy came from Pennsylvania, and another from Wisconsin rode his Indian Scout.

The national group was founded in 1954, has 58 chapters in the U.S., and chapters in over 12 other countries. It has about 11,000 members and defines an antique motorcycle as at least 35 years old. The group is devoted to "the preservation, restoration and operation of old-time motorcycles."

Not long after Warfield bought that '66 Honda, he picked up a vintage Triumph



Photos from top left: Rick Warfield and his 1947 Indian Chief, the 2011 Great Lakes AMCA rally, and Mandy Warfield astride her 1968 BSA Starfire.

Bonneville. Like a lot of avid collectors, his inventory steadily grew until he had almost a dozen different bikes, including many classics from the 1940s and '50s.

He has a beautiful '49 Harley that is all original and is in the process of restoring a '71 Norton Commando. It's taking awhile, since he admits that he acquired it back in 1978. But, it's another classic that is dear to his heart.

"I have a 1947 Indian Chief that's probably my favorite," he says with pride. "I just love the simplicity of the old bikes. It's a whole different way to ride, a whole different technology."

Owning a vintage Indian is very much a mark of distinction among collectors. They



1,800 Members Attend Annual Meeting



More than 1,800 Cherryland Electric Cooperative members attended the Annual Meeting at Wuerfel Park on June 14.

Incumbent board members Terry Lautner and Betty Maciejewski won re-election in voting by the cooperative's members.

The event started with registration from 3-5 p.m., followed by the business meeting from 5-6 p.m., which was led by board president, Tom Van Pelt. The meeting included short talks by General Manager Tony Anderson, Wolverine Power Cooperative CEO Eric Baker, and a question-and-answer session with Cherryland members.

Members were then treated to a ballpark dinner and the Independent League baseball game between the Traverse City Beach Bums and Lake Erie Crushers. Helped by the big Cherryland turnout, the crowd totaled 4,674 fans.

Cherryland Cares Seeks Grant Applications

Area nonprofit agencies who are seeking financial help can apply for a grant through Cherryland Cares.

Cherryland Cares is a five-member board, made up of Cherryland Electric Cooperative members, who distribute money from Operation Roundup to area nonprofits. The next quarterly meeting of Cherryland Cares is Monday, Sept. 17. The deadline for applications is Friday, Sept. 7.

Operation Round Up money comes from Cherryland members who elect to round up their bills to the nearest dollar every month. This amount averages \$6 per year.

To receive a Cherryland Cares grant application or to join Operation Round Up, contact Nick Edson at Cherryland. His direct line is 486-9222 or e-mail him at nicke@cecelec.com.

Next Member Input Session

The board of directors at Cherryland Electric Cooperative is offering another opportunity for members to provide direct input to the board on a quarterly basis. Members will be able to talk to the board next on Monday, Sept. 17 at 9 a.m. at the company office in Grawn.

Members are asked to come to the lobby and request to speak to the board. Members are asked to keep their comments to 5 minutes. Member attendance at the

board meeting is allowed for the public input portion of the meeting only.

Cherryland members are afforded a chance to meet with the board on a quarterly basis during meetings in March, June, September and December.

Pay Your Cherryland Electric Bill Online

Want to save money and pay your Cherryland Electric Cooperative bill online?

It's easy to do. You can set up your accounts to get only an email bill—no more paper bills!

If you would like to do this, access your account on cherrylandelectric.com. It will prompt you immediately after you sign in to make a decision on whether or not you want the paper bill to continue; if you do, check the box. If not, simply press "update."

Questions about the online payment can be answered by Cherryland's Member Service Department at 486-9200.

Mary Miller Wins Contest

Cherryland member Mary Miller has won the co-op's line and pole address contest.

The contest was published in the May issue of *Country Lines*. Mary, who is served by our Lake Ann substation, won a \$25 gift card for her efforts.



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"Cherryland Electric Cooperative"

are often high-ticket bikes, but Warfield was fortunate in landing his back in 2005, as just a pile of separate pieces. "I got it for scrap prices," Warfield notes. "It took me about six months of work to get it put together. It took about \$7,000 to \$8,000 to get it back on the road, and it's probably worth \$20,000 to \$30,000 now."

The Indian Motorcycle Manufacturing company, founded by two former bicycle racers, began building bikes in 1901. Until World War I, Indian was the largest motorcycle maker in the world. By 1931, Indian and Harley-Davidson were the only two American manufacturers producing commercial motorcycles. That rivalry continued until 1953 when the Indian factory in Springfield, MA, closed and Royal Enfield, a British firm, took over the Indian name.

British bikes dominated motorcycling for much of the 1930s and '40s. Over 80 different nameplates were available, including classics like Norton, Triumph and AJS. After World War II, American Army vets who loved motorcycles began to organize in riding clubs. In 1951, the BSA Group purchased Triumph to become the largest producer of motorcycles in the world.

That dominance continued until the late 1960s and early '70s when Japanese makers, led by Honda, became popular. Suzuki, Kawasaki and Yamaha each started producing in a big way, seizing the public's attention with their modern designs and cheaper price tags.

Despite the popularity of many modern bikes, it's still the classics that rev the engines of AMCA members. For example, Warfield restored a '68 BSA Starfire that his daughter Mandy rides. "We were looking for a bike for me," Mandy recalls. "This one started as a 'basket case'—just a bunch of parts—and we built it from that."

Warfield has a "semi-organized" workshop full of other projects and classic parts, for which his passion has put him in touch with TV celebrities Mike Wolfe and Frank Fritz, of "American Pickers."

"They are as nice in person as they are on TV," says Warfield. "And Mike is a motorcycle guy."

Clearing the Way For Electric Reliability

Wolverine Power Cooperative is targeting 315 miles for right-of-way danger tree removals and trimming in 2012 on the co-op's transmission system and another 230 miles for herbicide application on lines that were re-cleared in 2010 and 2011.

Re-clearing work is complete in the Baldwin, Weidman and Grawn areas and is planned for line sections near Copemish, Kalkaska, Hersey, Marion and Newaygo. Herbicide application is scheduled from mid-June through September on sections of the system near Boyne City, Elmira, Alba, Cheboygan, Tower, Atlanta, LeRoy, Scottville, Hersey, Altona and Vestaburg.

Wolverine has implemented a five-year cycle for re-clearing its 1,600-mile system. Brush that compromises access along the right-of-way corridor is cut or mowed and hazard trees that could fall into the power lines are cut down. One or two years after re-clearing, herbicide is hand-applied to control the regrowth of trees and certain woody shrubs.

"We follow the North American Electric Reliability Corporation's recommended standards for maintaining our rights-of-way," says Joe Hughes, land management supervisor. "We are also a certified member of the Energy for Wildlife program sponsored by the National Wild Turkey Federation, which promotes a balanced vegetation management practice with wildlife habitat benefits."

The Federation helps Wolverine ensure safe and reliable delivery of electricity to its member distribution cooperatives and improve wildlife food, nesting and cover habitats. By controlling the trees and invasive woody shrubs with a selective herbicide treatment, grasses dominate the corridor, which in turn helps minimize tree seedling regrowth and reduce the need for future work to re-clear the corridor.

Wolverine works with two contractors to maintain the vegetation on its rights-of-way. Crews from Trees, Inc., perform the tree and brush cutting, and Owen Tree Service applies the herbicide.



Top: Wolverine Power Cooperative uses balanced vegetation management practices that promote delivery of safe, reliable electricity to member cooperatives and also benefit wildlife habitat. **Bottom:** Members of Wolverine's land management department include Joe Hughes, Joe Hazewinkel and Ron Sneller.

Wolverine has also begun to trim overhanging tree canopies on the edges of some right-of-way corridors. While the goal of routine re-clearing is to prevent trees from falling or growing into the power lines, side tree-trimming increases the horizontal tree clearance to the wires. The work is being done on lines that were rebuilt or are planned for rebuilding to prevent damage from tree contacts to upgraded sections of the system. "We are trimming tree limbs that could

come in contact with our lines during high winds or heavy snow," Hughes explains. "In some forested areas, the tree crowns were only 15 feet from the wires, but the tree trunks were outside the cleared corridor."

Wolverine notifies landowners who have vegetation management work scheduled in their areas. Letters are mailed two to four weeks before work begins. Co-op members with questions may contact Wolverine's land management department at 231-775-5700.

Hot Water Can Heat Homes

Using a reverse cycle chiller with your home's heat pump can be a less costly alternative to supplemental resistance heating.

Q: *We have an old, inefficient electric resistance furnace. I have heard there are some new types of heat pumps that use a big water tank and don't need backup heat. How do these systems work, and are they efficient?*

A: Although electric resistance heating can be relatively expensive to operate, it is 100 percent efficient—that means all the electricity you pay for ends up heating your house. With a gas or oil furnace, you lose some heat out the flue. The problem with electric resistance heating is that it costs more to produce 1 Btu from electricity than it does by burning fossil fuels.

A heat pump can produce 3 Btu of heat for your house for each 1 Btu on your electric bill. This is because the heat pump does not create heat directly. It uses a compressor, coils and other equipment to draw heat from the outdoor air and pump it into your house.

The heat pump system you asked about is called a reverse cycle chiller. It basically uses a standard high-efficiency heat pump to produce heat during winter and cool air in the summer. A typical air-source heat pump heats or cools a refrigerant that flows directly through an indoor coil. Air blows over the coil to heat or cool your house. A reverse cycle chiller heats or cools water in a small (20- to 40-gallon) insulated tank. The water then flows through the indoor coil. The entire system will cost 15 percent to 20 percent more to install than a standard heat pump/electric furnace combination.

The output capacity of a typical heat pump is sized for the cooling Btu requirements of the house. In most parts of the U.S., the heating Btu requirements are greater. To make up the difference, a backup electric resistance furnace is required during very cold periods. As the outdoor temperature drops, the heat output of the heat pump also drops just as the heating needs of your house increase.

You might think you could install a larger capacity heat pump to provide enough heat for your house even on very cold days. This would be possible with an air-source heat pump, but it would not work well in the air-conditioning mode. An oversized air conditioner results in short cycles, indoor temperature swings, and poor dehumidification.

The primary advantage of a reverse cycle chiller is it transfers heat to an insulated water tank. This allows you to install a heat pump with an extra large capacity for adequate heating even in cold weather without the associated summertime cooling issues. Many of the major HVAC manufacturers' heat pumps can be used with a reverse cycle chiller system.

During summer, this large heat pump cooling capacity chills the water in the insulated tank to 40 degrees or so. The chilled water is run through a coil in the blower system, which cools and dehumidifies indoor air just like a standard heat pump. The heat pump can cycle on and off as needed to chill the water in the tank independently of the indoor blower. Therefore the blower can run as long as needed to provide comfort and efficiency.

Another key advantage of having the heated water tank is its wintertime defrost mode. A heat pump regularly switches to the cooling mode to defrost ice that collects on the outdoor condenser coils. During this time, expensive electric resistance heat comes on or chilly air blows out the registers.

With a reverse cycle chiller, the heat to defrost the coils comes from the heated

The following companies offer reverse cycle chiller systems:

Aqua Products

800-840-4264 • aquaproducts.us

Multiaqua

864-850-8990 • multiaqua.com

Unico System

800-527-0896 • unicosystem.com

If you have a question for Jim, please email jdulley@countrylines.com, or mail to James Dulley, *Michigan Country Lines*, 2859 W. Jolly Rd., Okemos, MI 48864. Be sure to let us know which electric co-op you receive service from.

Visit dulley.com for more home improvement and do-it-yourself tips.



Source—Aqua Products

This reverse cycle system compressor unit is mounted on top of the heat exchanger to transfer heat to the water.

water tank so warm air continues to blow out the registers. During regular operation, the temperature of the air coming out the registers is also warmer than with a typical air-source heat pump.

In addition to eliminating or greatly reducing the use of backup resistance heating, a reverse cycle chiller provides options for efficient heating. Because the heat is coming from the insulated water tank, you can select different types of heating for different rooms. The hot water can be piped through a heat exchanger (fan coil) and typical ductwork to produce heated air.

It may be more efficient and comfortable in some rooms to use radiant floor heating. For this heating method, the hot water flows through pipes in the floor. This is one of the most efficient heating methods because you can feel comfortable at a lower room air temperature. This option is more feasible for new construction, but it can be used if you have a basement providing access to the underside of the floor above.

During summer, an optional refrigeration heat reclaimer (similar to a geothermal desuperheater) can be used. Instead of the heat pump exhausting the heat to the outdoor air in the cooling mode, it can be used to heat your domestic hot water for free.

During winter, the heat pump can be used to heat your domestic hot water in addition to the house.

James Dulley is a nationally recognized mechanical engineer writing about home energy issues for the National Rural Electric Cooperative Association.



Building, Planting or Playing? Stay Clear of Power Lines

Electric utility workers see some new homes and other structures built in odd places—a home with the roof less than 8 feet from an existing power line; a swimming pool or barn right underneath a line.

“When you think about a builder hauling in materials and working in those areas, and then folks using the pool or getting too close to the roof, it’s pretty scary,” says Joe McElroy, safety director for the Michigan Electric Cooperative Association.

So, whether you’re a contractor or a do-it-yourselfer, use extra caution while working near overhead lines (never get closer than 10 feet), and consider their location in you’re planning. Also, call Cherryland Electric (231-486-9200 or 800-442-8616) to let them know when you’re planning to work within 10 feet of power lines.

“Electricity flows through metal, wood, water and many other conducting materials, including human beings—all in an effort to reach the ground,” McElroy adds. “Small birds can sit on power lines unhurt

because they don’t create a path to the ground, but you and your ladder do.”

Further, a power line doesn’t have to be touched to be dangerous. Unless you are qualified to work around power lines, you should stay at least 10 feet away, or more. Since overhead lines are not insulated, touching a line or an object in contact with it can result in serious injury, or even death. Stay away, and contact your electric co-op.

The U.S. Occupational Safety and Health Administration advises that the best protection is lots of space. Don’t operate equipment around overhead lines unless you are authorized and trained to do so. Other safety tips include:

- ▶ Use a nonconductive fiberglass ladder.
- ▶ If objects (scaffolds, cranes) must be moved near the lines, appoint a worker whose only job is to observe the clearance between the lines and the object and warn others if that distance is not maintained.

A power line doesn't have to be touched to be dangerous.

▶ Never touch *any* downed power line, and never assume fallen lines are dead.

If you are in a vehicle that contacts with a power line, don’t leave the vehicle. As long as you stay inside and avoid touching outside metal, you should avoid an electrical hazard. If you need to exit to summon help or because of fire, jump out without touching any wires or the exterior, keep your feet together, and hop to safety.



LEAVE THE POLE ALONE

What do yard sale signs, basketball hoops, satellite dishes and birdhouses have in common? They’re often found illegally attached to utility poles. But this isn’t just a crime of inconvenience. Safety issues caused by unapproved pole attachments put the lives of lineworkers and the public in peril.

Your local electric co-op line crews climb utility poles at all hours of the day and night, in the worst conditions, so anything attached to them can create serious hazards. Sharp objects like nails, bolts, tacks, staples or barbed wire can also puncture rubber gloves and other safety equipment, making lineworkers vulnerable to electrocution.

Co-op lineworkers have even reported poles used as support legs for deer stands, lights and carports. Any person placing items on poles also comes dangerously close to energized power lines with thousands of volts of energy pulsing overhead.

Unauthorized pole attachments also violate the National Electrical Safety Code. Utilities strictly follow this code, so please help keep lineworkers—and members of your community and family—safe. Don’t attach any of these dangerous items to utility poles.

Fixtures not belonging to the co-op or another utility will be removed by line personnel, and the co-op is not responsible for any losses if an item is damaged or destroyed during removal.



Teach Kids Safety, Too

Kids often don’t understand the outdoor dangers of electricity, but making them aware of overhead lines and these rules can help:

- ▶ *Never play or climb trees near power lines.*
- ▶ *Never climb a utility pole or tower.*
- ▶ *Never fly kites or model planes near trees and overhead lines.* If a toy gets stuck in a tree near the lines, don’t climb to get it. Call your local electric co-op or utility for help.
- ▶ *Don’t play on or around pad-mounted electrical equipment* (usually green boxes).
- ▶ *Never go into an electric substation*—not even to rescue a pet or retrieve a toy. Substations contain deadly, high-voltage equipment. Call your electric co-op or area utility instead.
- ▶ *Use caution before plugging in a radio or electrical gadgets outdoors.* Keep all electrical appliances at least 10 feet away from hot tubs, pools, ponds, puddles and wet surfaces.



Photo - iStockphoto.com



What Is Killing My Trees?

In northern Michigan, our piece of paradise has invaders affecting our forests and lawns. You may see it in your lawn, your neighborhood, or on your drive to work. Something is killing our trees.

That “something” is the emerald ash borer. The dark metallic-green beetle, only one-half inch long, started gaining attention in southern Michigan during the summer of 2002. The Detroit area invasion sparked the attention of many arborists when these beetles began their devastation.

The adult beetle may nibble on the leaves, but do relatively little damage. It is the larvae feeding on the inner bark that actually kills the trees. These immature beetles disrupt the ash trees’ ability to transport water and nutrients. The tree basically starves to death.

Where did these beetles come from?

While no one can say for sure, it is believed the beetles arrived in wood packing materials from airplanes or cargo ships that originated in Asia.

Until 2002, there were no findings of the emerald ash borer outside of eastern Russia, China, Japan and Korea. It is believed that the beetle was spread to northern Michigan by people bringing firewood with them on camping trips.

It’s important that we take steps to prevent them from spreading.

How can you tell if you have the emerald ash borer in your area?

Because woodpeckers feed heavily on the larvae, woodpecker damage to ash trees may be the first sign of an infestation.

Die-back normally begins at the top of infected trees and the tree canopy begins to thin above the infested portions. One-third to one-half of the branches may die in one



year (pictured above), and most of the tree will be dead in two years.

What is being done to stop this pest in Michigan?

Many universities, along with state and federal agencies, are working to educate residents on how to identify ash trees and the emerald ash borer. The most important thing we can do is to stop moving diseased wood.

Cherryland will cut down dead and diseased trees near our lines; however, the wood remains with the property owner. There are

products that have had success in protecting yard trees. Studies by Michigan State University have proven the successful use of various pesticides.

Visit emeraldashborer.info for more information about this insect and how to deal with damaged trees.

Unfortunately, there are more pests killing other tree species in Michigan, and I will discuss these in future articles.

Jim Carpenter is the line superintendent at Cherryland Electric Cooperative.

Too Much Stuff

Is it time for a garage sale?

My wife Barb and I have asked each other that question for the last 10 years and though we've agreed we need to get rid of a lot of stuff, we haven't pulled the trigger. So, stuff keeps piling up. (No, we're not hoarders—yet.)

We've got to clean out the basement.

And the garage.

And the attic above the garage.

And the garden shed.

And the closets.

I took a quick inventory of stuff that we should get rid of but may disagree about.

Cedar-lined hope chests, large and small, inherited from parents and family friends. An 18-speed Fuji bicycle bought in 1978—heavy by today's standards but still a nice bike (I should take it for a spin).

Piles of wood in several places: 2x4s, 4x4s, plywood, treated planks, oak trim with nail holes (I wonder if I should put it back up?), lattice for the deck.

Metal tubing used on a kids' play gym that I tore down long ago, a door for a 1991 Mazda RX-7, old windows, and one of those tiny spare tires.

Stationary and portable table saws (I don't know which one to keep), a double-bed headboard and frame, several wooden screen doors meant to be a simple means of creating a screened-in porch (seemed like a good idea at the time).

A chain saw with a bent bar, a gas-powered, broken leaf shredder and wood chipper, several speaker sets for various music systems, a couple of large plate mirrors (I don't dare break them up), several somewhat broken bird feeders, an old sump pump that probably still works.

Various insulation panels, aluminum siding panels and vinyl trim, shingles left over from roofing projects, extra rain gutters.

A set of old golf clubs, badminton and croquet sets, He-Man[®] toys (apparently we're supposed to keep these), playthings

for a pool we no longer have, cross-country skis (the long, narrow kind) with boots.

A set of painted end tables designed for the '70s.

And then, there are clothes, mostly mine from my work life: suits and ties I'll never wear again. Life sure is easier when you only wear jeans, or shorts and polo and t-shirts.

Stuff has been piling up in those spaces for 35 years. It's been passed on by parents and aunts who wanted us to have it. Left by kids who moved on. Accumulated by us, kept because we might need it someday or haven't used it enough to justify getting rid of it, if that makes any sense.

If we had moved a few times in the past 35 years, we probably would have ditched some things with each move, but didn't and haven't, so it keeps piling up. I worry that our sons will have to deal with all this stuff if we don't do something about it.

A friend is wondering what to do with all of his mother's china, passed down through generations, which no one in the family wants.

Every time my parents moved, from Ironwood to Mason to Minneapolis and to assisted living, they got rid of stuff. So, now there's not much left for their kids to worry about.

Believe me, none of this stuff is going to make it to Antiques Roadshow. Maybe people from the American Pickers TV show will come and buy it all, but I'm not holding my breath.

Usually, when we want to get rid of something that really has no value, we put it next to the road and tape a "FREE" sign on it. Sometimes, we don't even bother with the sign. People take it anyway. I don't know if that's considered theft. We've gotten rid of broken lawnmowers and snowblowers, a 30-year-old TV, old windows and doors, lawn and inside furniture, a broken shop vacuum.

We play a game to guess how long it will

take for someone to haul it away. I don't think any of those free things has lasted longer than a couple of hours out front. The record is 20 minutes. I'm glad someone can use this stuff.

If we lived a little further south, we could join Michigan's Longest Garage Sale, which stretches along the entire route of U.S.-12 from Detroit to Coldwater to New Buffalo, from Lake Erie to Lake Michigan. This year it runs from Aug. 10-12. (Get a map at us12heritagetraill.org.) Hundreds of homes, farms and businesses along the mostly country road will be selling everything from antiques, collectibles, furniture and dishware to fresh garden produce and homemade jams and jellies. There will be live entertainment along the way. Maybe even more interesting than the "junk" are the people you'll meet along the drive.

The U.S.-12 Heritage Trail has been used since prehistoric times. Near Saline and parallel to the highway, paleontologists from the University of Michigan have excavated portions of the longest mastodon trailway ever found, suggesting that game animals were using the corridor over 10,000 years ago. The indigenous people of Michigan who hunted the animals followed.

In 1825, the U.S. government appropriated \$3,000 for a federal highway, the second in the nation, which was laid out along an ancient Indian trail. Maintained by federal, state and local governments, the highway has been used ever since. Some of the stuff in the garage sale may be as old as the highway.

But we don't live there, so we will resort to other means. Some things will go to Goodwill, some we'll put on Craigslist, the rest will wait for a garage sale. Whenever.

Mike Buda is editor emeritus of Country Lines. Email Mike at mbuda@countrylines.com or comment on his columns at countrylines.com/column/ramblings





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