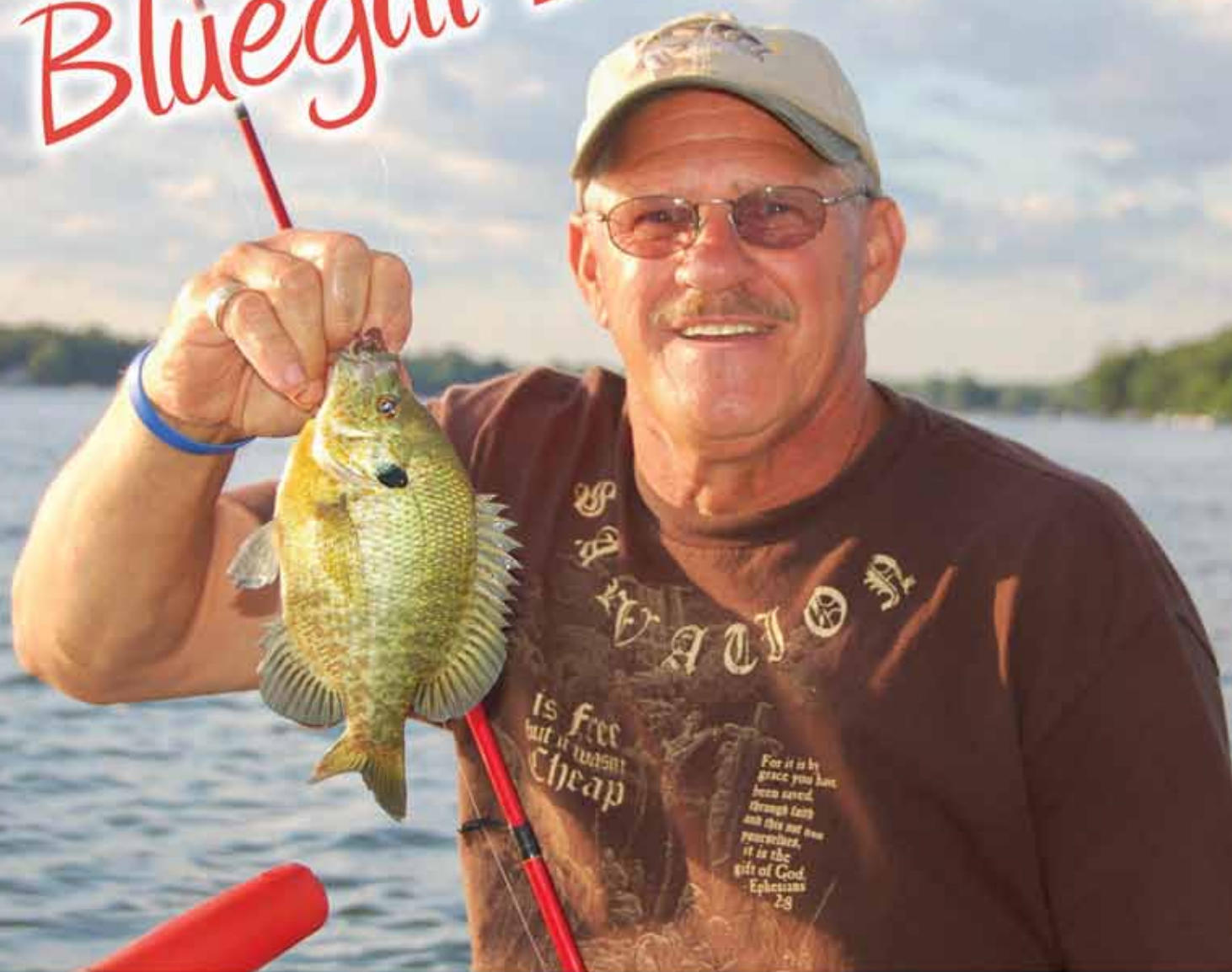


Michigan COUNTRY LINES

Meet
Bluegill Bob



2 Co-op Bylaws
Provide Structure

3 Preserving Nature
At Hall's Lake

7 Plan To Attend Your
District Meeting

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On the Cover

Bob Miskowski, also known as "Bluegill Bob,"
has become a Michigan fishing legend
simply by catching bluegills most of his life.

Photo - Robert Gwizdz



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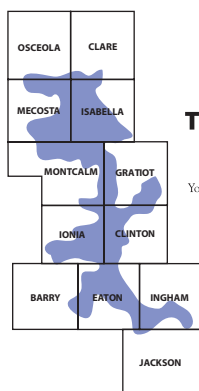
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The appearance of advertising does not constitute an endorsement of the products or services advertised.

Change of Address: Please notify your electric cooperative. See page 2 for contact information.





Tri-County Electric Cooperative

Your Touchstone Energy® Cooperative

Blanchard office:

3681 Costabella Avenue
Blanchard MI 49310

Open 8 a.m.-5 p.m. Monday-Friday

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Open 8 a.m.-5 p.m. Monday-Friday

Electric bill/account questions:

517-647-7556 or 1-800-562-8232

Pay by phone, anytime:

1-877-999-3395

Service questions/outages:

517-647-7554 or 1-800-848-9333
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High Speed Internet

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Editor: Jayne Graham, CCC

Co-op Bylaws Provide Structure, Continuity



Spring could be considered “co-op season,” because it’s the time of year when several cooperative principles come to life here at HomeWorks Tri-County Electric.

With financial statements closed and audited for 2012, your board of directors will authorize allocation of the margins, or profits, back to your membership account, based on your energy purchases during the year.

Our final margin was slim this year, but there will still be an allocation, the details of which we’ll report in *Country Lines* magazine. These allocations are paper transactions that build your capital credit equity in HomeWorks.

Following our policies, the board will also decide whether the co-op’s financial position is strong enough to allow for a cash retirement of capital credits. If they do authorize a retirement, most members will see it as a credit on their energy bill, and again we’ll report it to you in *Country Lines*, as well as with a special notice included with your bill.

Two other big co-op events coming up are the district membership meetings in May, and director elections that take place at those meetings. This year, board seats in District 1 at Charlotte, District 5 at Fulton, and District 7 at Remus will be voted on by those members.

All of these activities are not only covered by the cooperative principles, such as democratic member control and members’ economic participation, they are spelled out in your co-op’s bylaws.

A copy of the bylaws, updated by the board of directors last fall, is included in

this issue of *Country Lines* for your reference. Think of it as the instruction manual for HomeWorks. You can also find a copy of the bylaws at homeworks.org.

Some people like to read instruction manuals, and some people don’t. But it’s good to know the information is available to you when you do need it.

The bylaws outline our structure and provide continuity as the board and staff change over the years.

Bylaws cover everything from the basics of membership (Article II), to the business agenda of district meetings (Article III).

They describe the board of directors, the qualifications necessary to serve as a director, and how directors are elected (Article VII).

Our nonprofit operations, including the allocation of margins and retirement of capital credits, can be found in Article XIV.

Whether you ever get around to reading our instruction manual, as a member-owner of HomeWorks you will continue to benefit from the structure they provide.

Mark Kappler
General Manager

Take note!

HomeWorks Tri-County offices will be closed Fri., May 3, for employee training.

Please call 800-848-9333 to report outages; pay bills anytime at 877-999-3395.



Join the conversation at
facebook.com/HomeWorks.org

Working Together to Preserve Nature at Hall's Lake

A small corner of western Isabella County is staying natural, and publicly accessible, thanks to the efforts of the Chippewa Watershed Conservancy.

Located a few miles north of Blanchard, the 70-acre Hall's Lake is the site of a natural preserve that includes 3,200 feet of shore line on the lake's east side.

While the west side is developed with seasonal and year-round homes, many served by HomeWorks Tri-County Electric Cooperative, the east side has an undeveloped 175-acre wooded buffer. This buffer harbors a variety of micro habitats from cat-tail edges to bogs, glacial moraine, and tree-covered hills.

"We started back in 2008 with our first



purchase of 22 acres," explains Stan Lilley, executive director of the Conservancy and himself a member-owner of HomeWorks.

"With the downturn of the economy, we weren't able to do much more until 2012, when we got some challenge grants," he adds. Those grants, and local fundraising, led to the purchase of 100 acres known as the Kabana Preserve.

Lilley says the group is now working on what they call Phase 3. They already have a \$21,000 grant toward the purchase of a 40-acre parcel appraised at \$93,000.

"Our goal isn't just to preserve Hall's Lake, and other natural areas, as open space, but to have people enjoy recreational opportunities there, even education," Lilley says.

This will be the third year the Conservancy has offered "Fourth Thursday at Hall's Lake" nature walks, led by a retired biologist from Central Michigan University in nearby Mt. Pleasant. Taking up to two hours to walk a mile-long footpath, visitors can learn about tree identification, fire ecology, and other natural science topics.

The walks are free and open to anyone, starting at 9:30 am from the end of Fowler Drive at the west side of Hall's Lake. The first walks in 2013 are set for May 23 and June 27. Visit the Conservancy's website for the email address or phone number by the fourth Wednesday to let them know how many participants to expect.



Top: Fourth Thursday walkers stop for a closer look. **Center:** The walking path at Hall's Lake. **Bottom:** One of the Fourth Thursday groups pauses for a photo after an outing.

Photos - Courtesy Chippewa Watershed Conservancy

Letters & More

Reader comment, the next tax season, energy efficiency tips, and appliances. It's all here on your Readers' Pages.



We enjoyed reading about our association in your recent article (Feb.) "Shooting Preserves Extend Bird Season." For those in Cass County and surrounding area, you don't have to go far to find a pheasant shooting preserve. Curt Johnson, a director of the Michigan Game Bird Breeders and Hunting Preserve Association, has Rolling Hills Shooting Preserve just outside Marcellus.

— Curt & Paula Johnson, Marcellus, *Midwest Energy Co-op*

HOW TO SEND A LETTER

Readers are encouraged to submit thoughtful, courteously-worded letters, and we print as many as possible in the space and time allowed.

Country Lines reserves the right to print letters at the publisher's discretion, based on length, space and content, and to edit slightly for space and facts. Please limit comments to 240 words or less. Submit by posting online at countrylines.com, email gknudson@meca.coop, or mail to: Editor, Country Lines, 2859 W. Jolly Rd., Okemos, MI 48864.

HOW TO CHANGE YOUR MAILING ADDRESS

Contact your electric co-op—they maintain the mailing list. See page 2 for your co-op's contact information.

Plan Ahead for 2013 Tax Season

Congratulations! If you're like most Americans, you recently filed your 2012 federal tax return. Since you've just completed that painstaking process, perhaps the last thing you want to think about right now is your 2013 taxes.

But here's why you should. There have been many changes to federal tax laws, and by doing the right planning today, you can eliminate a potentially unpleasant financial surprise when you file next year.

What You Need To Know

Tax policy was altered on New Year's Day with Congressional passage of the American Taxpayer Relief Act of 2012. While you should consult with your tax adviser for a total list of the revisions, following are some highlights to be aware of. Please note all of these became effective on Jan. 1, 2013 (with some retroactive to 2012).

The deduction for certain types of expenses was extended to include the 2012 and 2013 tax years. This includes deductions for state and local taxes, educator expenses (i.e., the "teacher deduction"), qualified tuitions, and others.

Individual income tax rates that went into effect in 2001 and 2003 became permanent, which means no changes for folks in the 10, 15, 25, 28, 33, and 35 percent tax brackets. However, the rate on taxable income for those earning \$400,000 or above (single filers) and \$450,000 or more (for those married and filing jointly) has increased to 39.6 percent.

The capital gains tax rate increased from 15 to 20 percent—but only for those with taxable

incomes at or above \$400,000 (single filers) and \$450,000 (for those married and filing jointly). It remains at 15 percent for all others.

The law imposed limits on allowable itemized deductions on 2013 tax returns for individuals with incomes of \$250,000 or more (\$300,000-plus for married couples filing jointly).

The amount of income exempt from the Alternative Minimum Tax (AMT) has been set for 2012 and will now be indexed for inflation each year, as determined by the Internal Revenue Service.

Any 2013 taxable wages that exceed \$200,000 are now subject to a 0.9 percent Medicare tax surcharge. This applies to individuals only, not employers.

The provision providing for a 2 percent reduction in FICA (i.e., Social Security) withholding amounts expired. This resulted in a reversion to the previous 6.2 percent withholding amount.

What You Can Do Now

Check in with your tax adviser to see how the new tax laws affect you and the steps you should take to make sure that you are adequately prepared to file your 2013 taxes. While high-earners are affected the most, your tax professional can help position you more favorably for this current tax year, such as altering your pre-tax retirement plan contributions.

— Doreen Friel

This article is for informational purposes only, and is not intended to be tax advice. Consult a tax adviser for information specific to your situation.

Lightbulbs Die Differently

Don't be fooled; any popping sound or smoke appearing when a CFL lightbulb burns out means that its end-of-life mechanism is working. And, despite confusion caused by an e-mail hoax circulating since April 2010, these sounds signal the bulb is working safely in its final hours. Smoke, a popping noise, and even a slight odor are typical and do not pose a fire risk as claimed in the misleading e-mail.

According to Underwriters Laboratories, Inc. (UL®), an independent nonprofit firm that tests and sets standards for electrical items, about 130-150 million CFLs are sold each year in the U.S. While the bulbs produce 75 percent less heat than incandescent bulbs, differences between them go deeper than the amount of heat released. As the first wave of CFLs begins reaching the end of their lifespan, consumers are learning the bulbs

die differently, too.

Most folks know traditional bulbs tend to burn out the same way: a pop, a flash, and, when shaken, the familiar rattle confirming the bulb needs to be changed. Sometimes the plastic at the base of a CFL will turn black, which is normal in most cases as safety standards require application of special flame-retardant plastics.

"CFLs are one of the products we regularly test to specific requirements for electrical safety, fire, and shock hazards," says John Drengenberg, UL consumer affairs manager.

Look for the UL mark when buying CFLs, which means the product was investigated to specific safety requirements. For more information, visit SafetyAtHome.com.



How to Buy an Energy-Efficient Appliance

Some new appliances feature the Energy Star® logo, which means that the appliance is significantly more energy efficient than the average comparable model. For an energy-smart deal on your next appliance, consider the following information:

- ▶ Read the EnergyGuide label (required for refrigerators, freezers, dishwashers, clothes washers, water heaters, and select HVAC systems).
- ▶ Compare the energy use of competing models.
- ▶ Estimate their differences in energy costs.
- ▶ Consider both purchase price and estimated energy use when deciding which brand and model to buy.

Shopping Strategy

■ **Select the size and style.** Measure the space the appliance will occupy to be sure your new purchase will fit. Make sure that you'll have enough room to open the door or lid fully and enough clearance for ventilation. This may help you narrow your choices as you settle on the best capacity and style.

■ **Know where to shop.** Appliance outlets, electronics stores and local retailers carry different brands and models. Dealers also sell appliances through print catalogs and the internet.

■ **Compare the performance of different brands and models.** Ask to see the manufacturer's product literature. Decide which features are important to you. Ask questions about how the different models operate: Are they noisy? What safety features do they have? What about repair histories? How much water do they use? How energy efficient are they?

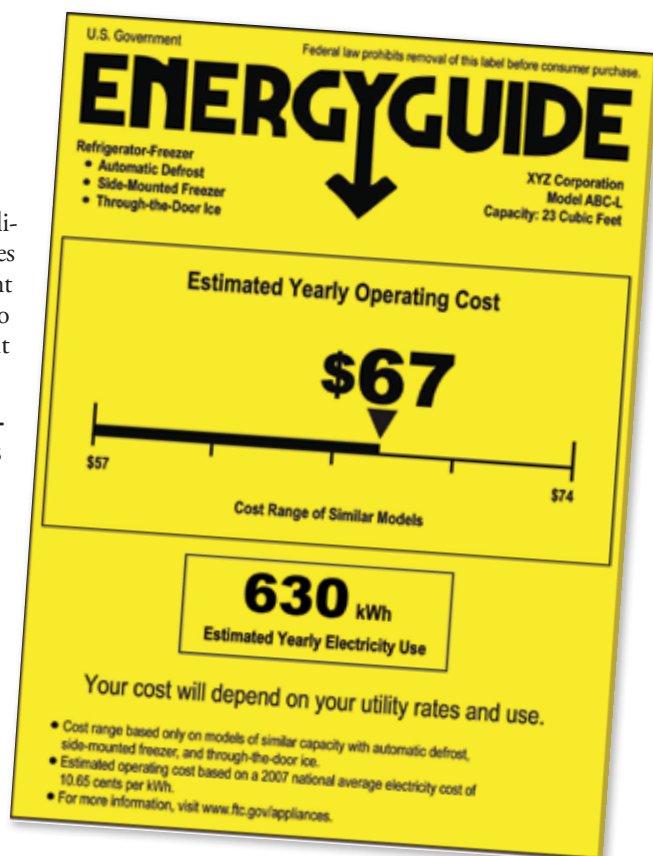
■ **Estimate how much the appliance will cost to operate.** The more energy an appliance uses, the more it will cost to run. Consult the EnergyGuide label to compare the energy use of different models. The difference

on your monthly electric bill can be significant, especially when considered over the 10-to-20-year life of the appliance. You could save money

over the long run by choosing a model that's more energy efficient, even if the purchase price is higher.

■ **Ask about special energy efficiency offers.** Ask your salesperson or local electric cooperative about cash rebates, low-interest loans, or other incentive programs in your area for energy-efficient product purchases—and how you can qualify.

— Source: Federal Trade Commission



Clean Cold Coils

Vacuum your refrigerator coils every three months to eliminate dirt buildup that reduces efficiency and creates fire hazards. To clean condenser coils:

Step 1: Unplug the refrigerator.

Step 2: Pull off or unscrew the vent plate that protects the coils.

Step 3: Clean the coils with a vacuum hose, using a brush to wipe off dust you can see.

Coils

Vacuum

Source: Association of Home Appliance Manufacturers



Energy Efficiency

Tip of the Month

Keep energy efficiency in mind as the ground thaws and you plan spring landscaping. Properly selected and planted trees, shrubs, and bushes can create a windbreak that lowers home heating bills in the winter and insulates your home year-round. Before you start, check on the right plants and techniques for your climate at EnergySavers.gov.

Source: U.S. Department of Energy

SmartHub Puts Information at Your Fingertips

SmartHub and its mobile apps is a self-service application that gives HomeWorks Tri-County Electric Cooperative members convenient access to account information like monthly usage, payment history, quick bill pay, and more. This safe and secure app is available *free* for iOS (iPhone, iPad, iPod) and Android users and takes less than three minutes to setup.

If you don't have a smart phone, you can still manage your account online because the services offered by the SmartHub app are also on our website.

When you visit HomeWorks.org, click "My Account" at the top, or "View My Account" under Quick Links, to be taken to SmartHub information. If you previously used our eBill service, you are already registered for SmartHub. Once logged in, you can:

- pay or view your bill;
- review account history and usage;
- set up auto pay or paperless billing; or
- change your address or phone number.

SmartHub is easy to navigate. It's simple and quick to make a payment or view your

meter readings. You can compare bills and find out what day of the week or month you typically use the most electricity.

Members with smartphones or tablet devices can download the SmartHub app from iTunes or the Android Marketplace. The app allows you to make a payment or view your usage on-the-go.

The mobile apps also provide a "Call the Office" button that dials HomeWorks for you, along with maps to our office locations.

The SmartHub app is encrypted during every transaction run and no personal information is stored on your mobile device.

NOTE: Mobile devices do offer the ability to store your log-in information for apps installed on the device. If you choose to store your log-in information, any person who has access to your mobile device can access your account.

Did you know? You can choose to stop receiving a paper bill each month and download your statement as a pdf document from SmartHub at homeworks.org.

PDF files can be enlarged on your screen, and they're simple to file on your home computer. Save paper and postage—it's easy!



Pay Bill Now
No registration required.

Look for these "buttons" on homeworks.org to log in to SmartHub or use the Pay Bill Now service.

Notice to Members of HomeWorks Tri-County Electric Cooperative

A Special Member Meeting is set for 9 a.m. April 22, at the cooperative's Blanchard office

The board of directors will consider changes to the cooperative's rates and tariffs at its meeting on April 22, 2013, to be held at the cooperative office at 3681 Costabella Avenue, Blanchard, MI. The meeting will start at 9 a.m. and is open to all members of HomeWorks Tri-County Electric Cooperative.

The session will begin with an opportunity for members to provide direct input to the board of directors, without filing a formal request under cooperative policy. Members are asked to come to the lobby by 9 a.m. and request to speak to the board; staff will direct interested members to the meeting room. Time constraints on each member's comments will be at the discretion of the board president, but members are asked to keep comments to less than 5 minutes.

The following item will be considered. Members will have an opportunity to address the board on the proposed changes prior to board action.

- 1) Reconcile the 2012 Power Supply Cost Recovery Factor collections. The Power Supply Cost Recovery Factor is applied to Tri-County Electric Cooperative's retail member-customers' monthly kilowatt-hour use. It represents the power supply costs as established by the cooperative in conjunction with Wolverine Power Cooperative. The factor is established annually, and reviewed monthly.

Notice of changes or additions to the cooperative's rates or service rules shall be sent to all members, as required by P.A. 167, by publication in *Michigan Country Lines* at least 30 days prior to their effective date.

Participation: Any interested member may attend and participate. The location of the board meeting site is accessible, including handicapped parking. Persons needing any accommodation to participate should contact HomeWorks Tri-County Electric at 800-562-8232 a week in advance to request mobility, visual, hearing or other assistance. Comments may also be made before the meeting date by calling General Manager Mark Kappler at 517-647-1281, or by email at mkappler@homeworks.org.

Notice of the board meeting shall be sent to all members, as required by P.A. 167, by publication in *Michigan Country Lines*.

Co-op Bylaws Are Updated

In the center of this *Country Lines* issue, you'll find a copy of the HomeWorks Tri-County Electric Cooperative bylaws, as updated by the board of directors in September 2012.

The bylaws require a vote of the membership to make changes to the board's qualifications, classifications or term of office. Except for those specific items, the board may amend the bylaws at any time with a two-thirds vote.

Several of the changes made were house-keeping items and updates to match current practices, such as:

- including electronic media as an official form of communication;
- making it an option to issue membership certificates to new members, rather than a requirement;
- updating "office of the cooperative" to "offices," inclusive of both the Blanchard and Portland offices;
- updating board and district officer titles from President and Vice-President to Chairman and Vice-Chairman; and
- removing references to U.S. government oversight since the cooperative no longer borrows federal funds.

Section 2.3 Membership adds new criteria to determine when an applicant for service becomes a member of the cooperative, stating "an applicant becomes a Member and consents to be a Member of the Cooperative upon using or agreeing to use ... service and completing the membership procedure."

The same section also contains new language that clarifies what happens if a member (who is not a joint member) dies and a close relative takes over service at the same location without notifying HomeWorks. Capital credits will continue to accrue to the original member's account until the co-op is notified and the membership is transferred.

New **Section 2.7.3 Provision of Cooperative Services-Member Equipment** covers requirements and responsibilities of connecting to cooperative equipment in more detail, with the goal of allowing such connections while maintaining the cooperative's ability to operate safely, reliably and efficiently.

Section 2.9 Grant of Property Rights strengthens language that requires members to provide safe and reliable access to the use of their property when needed, as well as

easements or other rights-of-way.

Two different sections now define the standard of conduct for co-op directors (**Section 7.8**) and officers (**Section 9.13**), while a third clarifies the meaning of conflict of interest transactions (**Section 8.9**).

Section 7.9 Removal has also been revised, and describes how and when members may seek removal of a director for acts "significantly and adversely" affecting the cooperative.

A copy of the bylaws may also be downloaded in pdf format at homeworks.org. And, each new member is provided with a copy of the bylaws in their new membership packet.



Time Set Aside for Members to Comment Before Board Meetings

The first 15 minutes of every board meeting are available for members who wish to address the board of directors on any subject. The next several board meetings are scheduled for **April 22 at Blanchard**, and **May 20 at Portland**.

Members who need directions to the office or wish to have items considered on the board agenda should call 517-647-7554.

Mark your calendar for the 2013 District Member Meetings!

DISTRICT 1 – May 16 **ELECTION**

St. Mary's Catholic Church Hall
Charlotte (**new location!**)

DISTRICT 2 – May 22

St. Edward's Church
M-50, west of Lake Odessa

DISTRICT 3 – May 14

Eagle Park Hall (Fairgrounds), Eagle

DISTRICT 4 – May 20

Vestaburg Elementary School Gym
B Ave, south of M-46, Vestaburg

DISTRICT 5 – May 13 **ELECTION**

Fulton Elementary Gym
M-57 at Ely Highway, Middleton

DISTRICT 6 – May 21

Beal City High School, smaller gym
Beal City (**new location!**)

DISTRICT 7 – May 15 **ELECTION**

St. Michael's Parish Center
M-20, 2 miles west of Remus

If you're not sure which district to attend, visit homeworks.org or watch your mailbox for your invitation.



Come learn more about **your** co-op and the Tri-County Electric People Fund, celebrating its 20th Anniversary in 2013!

Members are asked to bring a non-perishable food item, to benefit a local food pantry.

Meetings start at 6 p.m. with a light supper.

All registered members at each meeting are entered into a drawing for energy certificates (up to \$50 value!) and the grand prize of an iPad. Youngsters (age 5-16) can win an iPod Touch.

(Must be present to win.)

Bluegill Bob

There are a lot of ways to make a name for yourself as an angler: catching record fish, winning fishing tournaments, designing productive lures, even writing about the experience.

But Bob Miskowski didn't do it any of those ways. Miskowski became one of Michigan's legendary anglers simply by catching fish.

A 70-year-old retired maintenance man who lives in rural Lenawee County, Miskowski is known statewide by the "Bluegill Bob" moniker that he was given by a Department of Natural Resources fisheries biologist over 20 years ago. And though he's carried the nickname around for so long, he's still surprised when another angler pulls up to him on the lake and asks: "Are you Bluegill Bob?"

Miskowski says his first recollections of fishing are as a 6-year-old accompanying his father on the ice. His predilection for

ing for everything from suckers to salmon, Miskowski seems to always gravitate back to bluegills.

"You can always catch bluegills," he explains. "You may not catch a lot of them, but you always catch some—always. With bass or pike or walleye, you can fish all day long sometimes and get skunked, but with bluegills, that just doesn't happen."

"They're fun to catch, too. They fight as well as any fish in the lake. And they're good eating—ask anybody."

Miskowski begins the season as soon



**You can always catch bluegills.
You may not catch a lot of them, but
you always catch some—always.**

piscatorial pursuits is in his genes, he says.

"My father taught me everything I know," he says, proudly. "He was a heckuva fisherman, and so were his brothers."

Truth is, Miskowski started picking up tips from other anglers, fishing magazines, and even developed a different style of fishing than the rest of his family while he was still in single digits. He has refined his style over the years, until he established his reputation as one of the best bluegill fishermen anywhere.

First, he said, he started using simple flies instead of the standard hooks and worms used among panfish anglers. Instead of a bobber, he uses a heavier plastic practice plug, which, while still floating, allows him to cast much further distances than a lightweight bobber. As a result, it covers more water and presents his bait to more fish. While the heavier float doesn't submerge like a light cork when a fish bites, he just watches for any unusual motion and then sets the hook.

Although he's spent plenty of time fish-

ing as the ice is off the lake. He concentrates on shallow, dark-bottomed backwaters—often canals off the main lake—where the water warms up fastest. He starts with just the bobber and an unweighted fly, which sinks slowly in the cold water. If it's not working, he adds a tiny bit of bait—usually a spike (fly larva) or wax worm (bee moth larva). As the season progresses and the fish move a little deeper, he adds some lead wire to the chenille body of his hand-tied flies so they'll sink faster and get down to the strike zone more quickly.

Miskowski maintains this same presentation until the bluegills go on the beds, then, when the sunfish become more aggressive, switches from insect larva to red worms—the bait he'll stay with all summer until the water begins to cool again in the fall.

Once ice fishing season arrives, Miskowski is really in his element. He's designed his own lightweight combination seat-and-gear box that has become known as a "Bobby

Box," in which he carries a lantern for keeping his hands warm. Miskowski dislikes ice shanties or shelters—"I want to be out on the ice and be able to pick up and go and where I can move around," he says. That's a big part of his strategy; he begins the day by drilling a number of holes and rarely spends more than a couple of fishless minutes at one before he moves on.

It's a fairly rare day that Miskowski doesn't bring back his limit of fish for the fryer. It used to be a rare day that he didn't fish, too, though he admits that as the aches and pains of advancing age make their presence known, he's down to fishing three or four days a week now—anytime the water is open or the ice isn't unsafe.

"I used to fish every day, and sometimes twice a day, except on Sunday," adds Miskowski, a deeply religious Christian, who signs off on the telephone with "God bless."

"On Sunday," he says, "I go to church."

Bob Gwizdz is an avid outdoor writer featured in many hunting and fishing publications.



Co-ops Are Different

What makes electric cooperatives different from other types of utilities lies in their core mission.

Michigan *Country Lines* magazine comes to you because you are a member and owner of the local electric “cooperative” that provides the power to your home or business. That’s why you’ll often see references to “the cooperative difference” in these pages. The differences between electric co-ops and other electric utilities range from how they refer to the people they serve—co-ops serve “members” or “member-owners” not “customers”—to the business model itself.

For example, electric co-ops operate on a not-for-profit basis. Revenues above operating costs, called “margins,” are returned to members in the form of capital credits in years when the co-op has profit above the actual cost of providing service and maintenance of the system for future reliability.

In the U.S., there are two other kinds of not-for-profit electric providers: public utility districts (PUDs) and public power districts (PPDs). There are also two other types of electric utilities: city-owned municipal electric systems and profit-driven investor-owned utilities. In every case, utilities receive financial assistance from the federal government in some fashion. Following is a look at each.

Co-ops, PUDs, PPDs

Electric co-ops are joined by public power districts—located exclusively in Nebraska—and public utility districts (all in the Pacific Northwest) as being not-for-profit. But while co-ops choose directors/trustees from their membership (people served by the co-op) and are required by state law to hold annual membership meetings, PUDs and PPDs are local government units—similar to school districts—and are not required to hold annual meetings or allocate capital credits. In addition, their directors (commissioners in the case of PUDs) are elected on the state



Photo - iStockphoto.com

ballot. Candidates only need to reside within the PPD/PUD’s boundaries to serve on a board; they do not have to receive power from the utility.

Federal assistance to electric co-ops comes in the form of low-interest loans from the Rural Utilities Service (RUS), formerly the Rural Electrification Administration (REA). Based on current interest rates, RUS loans actually make money for the federal government—about \$274 million in fiscal year 2012. Aside from aiding in the construction of critical infrastructure that keeps electric service reliable and electric rates affordable, RUS financing remains important because household incomes in co-op service territories run about 11 percent lower than the national average.

Co-ops also have fewer consumers to share the cost of providing electricity. Co-ops serve an average of 7.4 consumers per mile of line, over which they collect annual revenue of about \$14,900. Nationally, electric co-ops pay \$1.4 billion in state and local taxes each year.

Municipal Electric Systems

Municipal systems are electric distribution utilities owned by a city, borough or other incorporated community. As public entities, they can levy taxes, issue government bonds, and adopt and enforce rules and regulations.

Not-for-profit municipals serve the most consumers per mile of line, an average of 48, and collect an average of \$113,301 per mile of line. The federal government subsidies municipals, too—when cities or boroughs issue tax-exempt bonds, interest paid to bond

owners is not taxed. The cost of this benefit in 2003 (the last year data is available) was \$909 million, or \$55 per consumer.

Investor-owned Utilities

Investor-owned utilities (IOUs) are governed by and generate profits for shareholders (stock owners) who do not necessarily live in the utility’s service area. IOUs average 34 customers and \$75,498 in revenue per mile of line.

In almost every case, IOUs charge electric rates that include amounts for presumed federal tax liabilities. However, available tax breaks (investment tax credits and accelerated depreciation) allow IOUs to retain most of the taxes collected, a total of about \$107 billion to date. At a cost to the government of \$4.6 billion in 2010, this federal subsidy to IOUs equals about \$44 per customer.

Back to the Co-op Difference

Your local electric co-op exists to provide affordable, reliable, environmentally responsible electric power. But at the core, it’s really about improving the quality of life in the communities it serves. That’s the main difference—the cooperative difference.

Keep reading *Country Lines* to see how electric co-ops make a difference in their communities.

Magen Howard writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the Arlington, Va.-based service organization for the nation’s 900-plus consumer-owned, not-for-profit electric cooperatives.



Batteries *ARE* Included

Electric co-ops are testing energy storage systems to better harness renewable energy.

One of the main obstacles to widespread use of wind and solar power production is nature itself: The wind doesn't always blow, and the sun doesn't always shine. But electric co-ops are on the cusp of efforts to develop technology aimed at storing excess renewable energy for when it's needed most.

Battery storage systems were developed in the 1970s and have become more viable on a large scale, thanks to recent chemistry breakthroughs that increase the longevity while lowering the cost of batteries. If battery energy storage at the utility level can be made commercially viable, it could result in a revolution for the aging American electric grid.

Wind and solar energy are called "intermittent" power sources—meaning they don't provide a steady supply of electricity like traditional generation fuels, such as coal or natural gas. Even in the best situations, the wind blows an average of only about 30 to 40 percent of the time and usually not during hot, humid weekday afternoons or extremely cold mornings when electricity use spikes. Meanwhile, solar energy production can dramatically drop even when a band of fluffy clouds briefly passes over the sun.

That's where battery energy storage comes in. For example, this technology can store electricity produced when the wind blows at night and the sun shines for use during times of "peak demand"—the electric utility industry's version of rush-hour traffic, when power use skyrockets—to avoid buying

expensive supplemental power.

So far, a handful of electric co-ops across the country are testing various ways to use these batteries.

Harnessing Energy Saves Money

Battery storage systems are a big investment for any electric co-op, but the good news is that benefits exist beyond leveling out renewable energy supply.

"Properly managed battery storage systems can delay the need for building expensive transmission lines that are difficult to get permits for in the first place," says Dale Bradshaw, a senior program manager with

when electricity is less expensive—remains the largest-capacity form of energy storage available. Another option, compressed-air energy storage—power plants "fueled" by air pushed into an underground cavern during times of low electricity consumption—has received increased attention because it can be expanded relatively cheaply. PowerSouth Energy Cooperative, a generation and transmission co-op based in Andalusia, AL, operates one of only a few compressed-air energy storage facilities in the United States.

"Pumped-storage hydro and compressed-air energy storage facilities generally operate when electric use soars," mentions John Holt,

This technology can store electricity produced when the wind blows at night and the sun shines for use during times of "peak demand"—the electric utility industry's version of rush-hour traffic.

the Cooperative Research Network (CRN), the research and development arm of the National Rural Electric Cooperative Association (NRECA). "It also reduces wear-and-tear on baseload power plants, which operate year-round to provide dependable electricity at a low cost, and can make electric distribution systems run more efficiently. All these opportunities add up to cost savings for consumers."

At present, pumped-storage hydro—a hydroelectric plant that generates power by using water previously pumped to an elevated reservoir during off-peak hours,

former NRECA senior manager of generation and fuels. "But geography limits where they can be located."

This means development of better batteries could be the key to wide use of energy storage technologies.

Before central station electric service came to rural America via the electric cooperative movement in the 1930s, farmers used "battery sets" that were recharged with windmills and ram pumps. In this situation, the ram is often useful—especially for pumping water uphill—because it is self-powered. A ram pump requires no outside

power source other than the gravity from flowing water. Like conventional, sealed lead-acid car batteries, those contraptions could go only through a limited number of discharge/charge cycles before they were exhausted.

Fast-forward to 2013, and developers are aiming for batteries that can function through 80 percent discharge for 10,000 cycles—allowing for longevity of three decades or more.

“If you’re supplementing wind or solar, you’re going through a complete cycle on a daily basis,” Bradshaw notes. “In other words, a long-cycle life remains key.”

What Energy Storage Means for the Future

The U.S. Department of Energy forecasts that energy storage will significantly change the electric grid. With it, the nation could possibly create an electricity “stock-pile” like the Strategic Petroleum Reserve. But initially, energy storage systems will make renewable generation sources more financially feasible—a critical step as U.S. lawmakers contemplate ways to create a more diverse energy production portfolio.

“Co-ops could also use battery storage systems to cut down on blinks—those momentary service interruptions that force you to reset your digital clocks,” Bradshaw notes. “If enough energy is stored, power could continue to flow to homes during such an event.”

He concludes: “Electric co-ops are leading the charge in researching and testing energy storage systems that will directly benefit consumers—from reduced operational costs and better service reliability to environmentally responsible power production.”

Magen Howard writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the Arlington, Va.-based service organization for the nation’s 900-plus consumer-owned, non-profit electric cooperatives.

Challenges of ‘Greening the Future’

Your home’s electricity comes from one of two sources: fossil fuels and renewables. Electric co-ops, public power districts, and public utility districts balance these resources to deliver safe, reliable, affordable power.

Most electricity gets produced by burning fossil fuels, which emit greenhouse gases like carbon dioxide (blamed as a climate change contributor) or nuclear reactors that emit clean water vapor (steam) but create high-level radioactive waste. Fossil fuels—primarily coal and natural gas—are non-renewable, with limited stockpiles. Nuclear energy, fueled by uranium, also relies on a finite resource.



A combination of solar array and battery energy storage is another intriguing option that could help restore service to consumers more quickly by serving as limited power for a few hours. Paired with some type of distributed generation (such as a solar array), a battery backup, and enhancements to existing demand response systems (these offer incentives to consumers to reduce electricity use), limited power could potentially be extended to consumers indefinitely, even when the sun is not shining.

Renewable energy like water, wind, sun, biomass, the earth’s heat, and hydrokinetic (uses flowing water to make energy) sources like tides and ocean waves replenish themselves. And when it comes to generating renewable electricity for rural America, electric co-ops are leading the way. Electric co-ops receive 13 percent of their power requirements from renewable resources compared to 10 percent for electric utilities as a whole.

Renewable energy has its share of challenges, however. “Green” power resources don’t exist everywhere or in sufficient quantity

to “keep the lights on all the time.” There’s also a need for more transmission lines to move renewable power from the places where it’s generated to population centers, and for new technology capable of storing electricity produced by variable wind and solar facilities as a way to make them more reliable forms of generation.

The North American Electric Reliability Corporation (NERC), which oversees reliable operation of the bulk power grid covering the United States, most of Canada, and a sliver of Mexico, estimates 39,000 miles of transmission lines need to be built by 2019, with 27 percent dedicated to connecting renewable

resources to the grid. Yet, getting these lines constructed poses major regulatory and community challenges. Already, NERC claims that almost 6,500 miles of planned transmission lines are delayed, with the typical delay lasting up to three years.

Meanwhile, the U.S. Energy Information Administration’s (EIA) 2012 Energy Outlook (see 2013 Annual Energy Outlook Preview at eia.doe.gov/forecasts/aeo/early_elecgen.cfm) forecasts the share of generation coming from renewables (including hydro) will grow from 13 percent in 2011 to 16 percent in 2040—mainly in the form of wind. But less than 25 percent of this renewable capacity will be available when consumers need it most, notably during times of peak demand, highlighting the need for research into developing advanced energy storage options (see p. 10 story).

It’s also important to note EIA’s prediction for renewables growth is in response to federal tax credits, state-level mandates, and requirements to use more biomass-based transportation fuels.

Electric co-ops are working closely with others to remind Congress to keep the affordability of electric bills in mind when debating energy legislation. A sound approach to renewable energy remains an important element for consideration.

—Angela Perez

Other sources: NRECA, Electric Power Research Institute

Grow Your Own

Michigan grapes are not just for juice and jam anymore!

There's never been a better time to grow grapes in Michigan, even in the chilly U.P. Thanks to U.S. and European breeders, there are many options for growing a delicious variety of grapes for fresh fruit, juice or wine-making. Grapes are a big deal along our Lake Michigan coast, and increasingly in all corners of the state. Most of the 15,000 acres grown here are for juice, jams and jelly. However, wine grape production has literally exploded over the last 10 years, says Duke Elsner, small fruit specialist at MSU Extension.

"Michigan now has over 100 wineries, compared to about 10 years ago, when there was 25," Elsner says. "We're not just a casual producer of wine anymore."

The wine quality is "fantastic," he adds, owing in part to the many grape varieties now available to growers. Varieties coming from the University of Minnesota are especially notable, he says, including Frontenac, which is hardy for wine-making. Riesling is currently the most-planted variety here, and pinot and chardonnay are also used.

Buying & Planting Grapes

When buying grape plants, avoid those in cardboard boxes sitting for who-knows-how-long on a discount store shelf. These could easily be stressed from the heat and drying-out occurring in some stores.

Your grapes should be planted in full sun, on level or sloping ground. (The ideal location is east of a large body of water, but of course not all of us have this option.) Fortunately, there are many hardy varieties like the juice and jelly "Beta" grapes that have been growing on my property for several years.

Grapes are also adaptable to different soil types, he says, but generally do best in loose, sandy loam. Amend clay or sandy soils with organic matter, and a soil test can reveal what's needed to bring the pH in balance and beef up the nutrients. Visit MSU Extension online at msue.msu.edu/ or call 517-355-2308 for



Photo - Tabor Hill Winery, Jeff Greenberg

The number of wineries in Michigan is growing, and so is the variety of grapes offered for home gardeners to grow their own.

more details on soil testing.

Grapes are normally planted from year-old vines, in front of a sturdy trellis or fence. I use the Four Arm Kniffen System to trellis grapes, but there are others, including the Hudson River Umbrella system.

To build a trellis, sink cedar posts, treated 4x4s, or metal stakes at least 2 feet into the ground. Space the posts 6 to 8 feet apart for a single planting. Use a #9 wire for the top wire, and #12 for the bottom. Fasten the bottom wire 30 inches from the ground, and the top one 30 inches from the bottom wire. Fasten the wire in a way that allows you to tighten it later.

Each vine will need to be trained up the trellis vertically the first year. By year two, there will be "arms" that must be trained along the wire. Select four of the thickest arms to train along the wires (two per wire; a total of four arms). Each arm should have eight to 10 buds, and will be about 2 feet long. Select four more canes as close to the arms as possible and cut them back to about

6 inches, leaving only two buds. These are called renewal canes and will produce fruit the following year. Remember this setup, as you will need to repeat it each year when you prune in late winter or early spring. Pruning this way may seem drastic, but it's necessary to ensure a healthy harvest.

Protect and Fertilize

To keep the grapes producing to their potential, fertilize each spring with a 10-10-10 or organic fertilizer, and mulch around the base of the canes to control weeds. Shallow cultivation (no more than 2 inches) is recommended.

Elsner, who is an entomologist by training, says grapes can go a number of years without disease and insect problems, especially if not planted close to wild grapes. He suggests buying hybrid varieties with stated disease resistance, and watching for pests like the dreaded Japanese beetle and rose chafer.

The biggest threat to grapes appears to be song birds, Elsner adds. Netting may be needed to keep them from eating your grapes. If deer are a problem in your area, especially during the establishment phase, protective mesh or a cage may also be needed.

Grapes won't take up much of your time, with the exception of the annual pruning and watching for critters. They're also pretty easy to propagate from stem cuttings, and will produce much sooner than most fruit trees (two years vs. four or five). Finally, you won't need a ladder to pick and enjoy them.

Resources:

Grape Varieties/Uses	Hardiness Zone
Frontenac/Wine	3-7
Niagara/Wine	5-8
Concord/Juice/Jelly	4-8
Beta/Juice & Jelly	3-8
Marquette/Wine	4-8
Summerset (seedless)/Table	4-8

Sources for grape vines:

Miller Nurseries - millernurseries.com

Jung Seeds & Plants - jungseed.com

Source for grape vines & grapes:

Michigan Wines - michiganwines.com

Neil Moran gardens in the U.P. and writes about it at northcountrygardening.blogspot.com.





Visit Dave Kober's Wooden Fish Gallery (8 miles south of Cadillac on M-115), his website is koberdecoys.com, or call him at 231-388-4170.

Fish Carver Extraordinaire!

Photo—Koberdecoys®

Where most people see a cedar fence post, Dave Kober sees a trout. Or a perch. Or maybe even a turtle or a frog.

Kober carves fish decoys—both working decoys that fishermen use when spearing through the ice, and decorative decoys that exist purely for their aesthetics. And though he turns them out from a small workshop behind his home near Cadillac, his decoys are on display across the world.

"It's grandpa's fault," explains Kober, 74-years-young and a carver since he was a lad. "My grandfather was an ardent hunter and fisherman and he liked to carve decoys. I started it as a hobby."

Kober, who grew up on a farm in Ottawa County, has been carving professionally since before he retired from a 30-year career in environmental clean up in 1989. And though he never had any formal training, the talent comes from his genes.

"That artsy thing kind of runs in our family," Kober adds. "I have a brother and sister who are commercial artists, though I never pursued anything artsy. When I was a kid it was the furthest thing from my mind. But I could always draw."

That's where his decoy designs start. When Kober begins, he sketches out the design on a chunk of wood, cuts out the rough form with a band saw, and then gets after it with a draw plane and rasp. He finishes it with power tools and hand paints it with acrylics.

Kober works with white cedar, most of which he scavenges from nearby wood lots, though it isn't unusual, he said, to come home and find a cedar limb on his porch, left there by one of his buddies.

"I like the texture of it," he says. "And the



Photo—Dendra Best/deertrack.com

smell of it. It's pleasant to work with and it takes paint well.

"I really like that old worn cedar, like fence posts. If it's got flaws in it that just adds to the character of the piece."

Over his career, Kober has carved thousands of pieces, including all the fish that are common to the Great Lakes area, as well as some saltwater species. He often works from a photo sent by an angler who wants a replica of his trophy.

"I send quite a bit of stuff to Alaska—I like to carve grayling and I do halibut, and Dolly Varden [trout], too, so I do quite a bit for customers up there."

But Kober says he has no favorite species.

"Our state fish is a brook trout, and I probably carve as many brook trout as anything I do, but in this area up here, all of these streams are full of brook and brown

trout, and they're popular. And walleyes and muskies are popular up here, too."

Though he's never advertised—aside from a sign by the road at his house on M-115—Kober has been commissioned to create original pieces for display. His largest piece ever, a 13-foot sturgeon, is on display in Minnesota. A 10-foot muskie he carved graces Da Dawg House Restaurant in Cadillac.

Kober has gained wide notoriety for his work over the years. Mort Neff of Michigan Outdoors television was an early patron. A display of his process—from a hunk of wood to a finished decoy—is featured at the Department of Natural Resources' Carl T. Johnson Hunting and Fishing Center in Cadillac. He was also featured in a large spread by *Michigan Natural Resources Magazine* in 1992, and he does a lot of work for Bass Pro Shops by carving trophies and retirement gifts.

But Kober has no plans to retire himself.

"As long as my old bones still work, I'm going to keep doing it," he says.

Kober invites anyone who passes his shop near Cadillac to drop in and have a gander.

"Half the time I forget to turn my sign on," he says. "But if my pickup's in the yard, come on in."

► **Thanks to Brian Hoekema**, a Great Lakes Energy Co-op member from Marion, for submitting Dave Kober's decoys as his "favorite Michigan-Made product." Hoekema said Kober "individually handcrafts each carving with great care and attention. His work can be seen in many places of business, such as Cabela's, as well as many restaurants."

► **To tell us about your favorite Michigan-Made product**, please send a few short paragraphs describing the product and why you like it, along with your email and phone number to gknudtson@meca.coop or call 517-913-3531. Also, please let us know which electric co-op provides your service.



Musician Helps Kids Who Stutter

Early intervention is the key to helping prevent stuttering and speech problems.

For many people, springtime brings hope and joyful anticipation. But for those who struggle with stuttering, the old fears of speaking and being teased are the same in every season.

For children who stutter, a typical school day can be fraught with embarrassing situations.

"Any sort of oral reports or speeches were especially difficult for me," recalls John Warstler, a speech therapist for the Cheboygan-Otsego-Presque Isle Educational Service District and member of Great Lakes Energy Cooperative. Warstler received speech services throughout his childhood to address a variety of speech disorders, including stuttering. He remembers being relieved when teachers skipped over him for oral reading, even though it caused some embarrassment. He also avoided classes that required public speaking, such as foreign language. "I felt that I had enough difficulties with speaking English," he says, "so why bother with Spanish?"

Fortunately for Warstler, school was also a place that offered help and support. He received free speech services from kindergarten through third grade, and his stuttering disorder received targeted attention during

middle school. That's when an astute science teacher referred him to the six-week Summer Remedial Speech and Hearing Clinic at Central Michigan University.

"The CMU Clinic was my first real experience working directly on my stuttering and it really helped my attitude towards my stuttering," Warstler explains. "I was desensitized to many speaking situations that once were very difficult for me."

It wasn't until his college years that Warstler became a fluent speaker. But even today, he says his fluency can never be taken for granted, because stuttering can be cyclical and episodic.

"I have learned the tools and I possess the knowledge to be a fluent speaker the majority of the time," he adds. "However, I am comfortable with who I am and how I speak for the most part."

Warstler has also devoted much of his life to helping Michigan public school students improve their speech and language skills. Today, he is officially retired, but due to a critical shortage in the field of speech/language pathology, he continues working in public schools two days per week.

Experts say parents should seek help as



John Warstler is an experienced speech therapist and musician.

early as preschool age when their child begins to stutter. Warstler agrees, and reminds parents that all speech/language services are free within public schools. In fact, children are eligible for services whether they attend public, private or charter schools, and even if they are home-schooled. "The earlier the intervention, the greater the likelihood that a child will not develop into a stutterer," Warstler says.

He recommends parents check out the many resources offered by the Stuttering Foundation of America (see below, left) for preventing or reducing stuttering disorders and learn about related myths and realities. For example, nervousness, anxiety and shyness do not cause stuttering—it's a myth that needs dispelling, since stutterers have the same range of personality traits as those who don't stutter. The reality is that no one knows the exact causes, but research shows that genetics, neuromuscular development, and a child's environment, including family dynamics, all play a role. Showing acceptance of the child, just as he is, is especially important, Warstler emphasizes, and credits his family for building his confidence and supporting his life-long music endeavors.

Today, besides a successful career in speech therapy, Warstler is an accomplished guitarist with two recorded CDs, and a third on the way. He also plays nearly every day in the schools where he works.

"Playing guitar put me in a comfort zone and it was very therapeutic," Warstler explains. "I would say today that music, like my stuttering, is a big part of who I am."

7 Tips for Parents *(or any caring adult)*

1. Speak with your child in an unhurried way, pausing frequently. Wait a few seconds after your child finishes speaking before you begin. Your own slow, relaxed speech will be far more effective than criticism or advice.

2. Reduce the number of questions you ask. Instead, simply comment on what your child has said.

3. Pay attention to your child's message. Use facial expressions and other body language to show you are listening to what your child says, not how he is talking.

4. Set aside a few minutes daily to give your child undivided attention. This quiet, calm time is a confidence-builder for younger children.

5. Help all family members learn to take turns talking and listening. Children, espe-

cially those who stutter, find it much easier to talk when there are few interruptions.

6. Observe the way you interact. Increase the times that give your child the message that you are listening and he has plenty of time to talk.

7. Above all, convey that you accept your child as he is. The most powerful force is your support, whether your child stutters or not!

RESOURCES:

- The Stuttering Foundation offers a free brochure, "If You Think Your Child Is Stuttering," at 800-992-9392 or stutteringhelp.org
- John Warstler can be contacted through his website at hymnsonguitar.com
- CMU Summer Remedial Speech and Hearing Clinic: Contact the Carls Center at (989) 774-3904 or visit cmich.edu

Holy Bat Cave!

This is the only one in Michigan's Lower Peninsula.

It's not the typical bat cave the Caped Crusader would hang out in—in fact it's not a cave at all—but northern Michigan bats don't seem to care. Up to 20,000 bats hibernate every winter in the cavernous insides of the Tippy Dam spillway.

When Tippy Dam was completed in 1918 it included four large spillway gates, an unusual design that no other Consumers Energy dam system has.

"The design created large hollow chambers within the dam structure, and the chambers remain within a few degrees of the water temperature held behind it, just above freezing," says Lorren Hannah, Consumers' Manistee River hydro supervisor, during a tour. "It's very much like a natural cave."

"The stability of the Manistee River watershed—dominated by sandy, water-absorbing soil—has made it necessary to spill water through the chambers only once in nearly 100 years and that was during summer," he explains.

Apparently it didn't take the bats long to discover that. Routinely 16,000 to 20,000 bats hibernate in the chambers during the winter months. Although bat use was documented for decades by Consumer employees, nobody paid much attention until the 1990s when the company enlisted the aid of Allen Kurta, PhD. An Eastern Michigan University biology professor, Kurta is known for his work with bat species, particularly the endangered Indiana bat.

For the past 19 years, Kurt and his students have made pilgrimages every few years to study and catalog the Tippy Dam bats during hibernation, and again in the fall when the bats are still actively gathering for hibernation.

"The first time I saw this I was amazed at the number of bats that hibernate in here. The population has remained very stable over the last 18 years," Kurta reports. "What I've been most amazed about over the years is finding a few Indiana bats and Eastern



Photos Courtesy - Alan Kurta, PhD



Bat expert Allen Kurta (in blue helmet), a biology professor at Eastern Michigan University, and a group of students check on hibernating bats in the Tippy Dam Spillway in Manistee County. Kurta and his students put bands on (lower left) some of the bats to help gather information for study. Visit michigandnr.com to learn more about the state's Tippy Dam Recreation Area.

pipistrelle bats among the population."

Eastern pipistrelles are common throughout northern Mexico and most of the United States, but typically not in northern Michigan. They hadn't been found north of Berrien County before, and the same was thought of the Indiana bat. "A few of those bat species are finding their way north to hibernate, which might indicate climate change," Kurta adds.

Kurta and his students handle the hibernating bats carefully to make sure they do not become active and use up excess fat reserves stored for winter hibernation.

"We handle them quickly to reserve their fat and energy. Normally, they will quickly go back into a hibernation state once we leave," he assures. "It won't be a problem for them."

Consumers Energy is also on-board to minimize contact with the bats during their hibernation state, Hannah says.

"We enter the spillway chamber only when necessary during the winter months, which isn't often," he stresses. This policy also extends to the property around Tippy Dam

that Consumers Energy owns. Many local bats, like the brown and northern, spend their summers roosting in trees around the pond. Consumers Energy prohibits tree cutting on its property around the dam from May to October—the time when the bats return to the cave-like spillways.

On his last visit, Kurta says the bat population looked healthy and appeared to be stable. Many of the bats they catalog were banded during previous visits. One of the Indiana bats was banded in 1996, and of the 18,000 or so bats wintering here, probably less than 30 are the endangered species, but it's like looking for a needle in a haystack.

Bats will live about 20 years and return yearly to the same hibernation spot unless they are interrupted for some reason, Kurta says. They are incredibly helpful to the people and the environment, he adds, as they devour insects at an incredible rate. One small brown bat can eat up to 3,000 mosquitoes in a single summer night, and they help pollinate a variety of flowers and transport many plant seeds.

Asian Inspired

Udon Noodle Salad

Explore distant lands from the comfort of your dinner table! These diverse and wholesome recipes bring out the unique flavors of Asia and will definitely awaken your senses.

Dark Jim (Korean Chicken Stew)

2½ to 3 lbs. chicken, cut up

1 T. rice wine

1 t. soy sauce

2 t. corn starch

¼ c. flour

2 T. cooking oil

Sauce:

⅓ c. soy sauce

1 T. rice wine

3 T. sugar

1 t. sesame oil

2 slices ginger root

1 clove garlic

⅛ t. pepper

¼ c. chicken stock

1 medium carrot

1 medium potato

1 medium onion

Sprinkle chicken with combined rice wine, soy sauce, and corn starch. Mix well. Let stand for 5 minutes, then coat with flour. Heat cooking oil in frying pan and brown chicken on both sides. Combine sauce ingredients and vegetables; mix well.

Place chicken in a large pot and put sauce over chicken. Cook over high heat until sauce comes to a boil. Turn heat down to low and cover; cook for 30 to 40 minutes. Serves 8.

Doreen S. Lawrence, St. Clair Shores

Udon Noodle Salad

4 c. spring mix salad greens

2 bundles udon (or buckwheat) noodles, cooked per package instructions

1 small (or ½ med.) English cucumber, seeded, quartered and sliced

1 orange pepper, seeded and diced

1 yellow pepper, seeded and diced

2 roma (or 1 c. grape) tomatoes, diced

1-2 avocados, cleaned and diced (prepare just before dressing to avoid turning brown)

Dressing:

2 T. soy sauce

⅔ T. wasabi paste

1 T. hoisin sauce

2 T. lemon juice

2 T. apple cider vinegar

3 T. sugar

1 T. minced garlic

4 T. olive oil

2 T. sesame oil

Mix together all salad ingredients. Whisk together dressing ingredients. Top salad with dressing. Serves 2-4.

*Hazel Holly, Sylvan Lake
(from friend Yuh Suhm Kim)*

Chinese Cabbage Salad

6 T. butter

2 packages ramen noodles, broken (save seasoning for another recipe or soup)

½ c. sesame seeds

1 c. sliced almonds

1 Chinese (napa) cabbage, chilled and chopped

5 green onions, sliced

Dressing:

1 c. sugar

½ c. balsamic vinegar

2 T. soy sauce

Brown the butter, ramen noodles, sesame seeds and almonds in a large skillet, stirring constantly and watching closely. Combine all ingredients in a large bowl, not more than 15 minutes before serving.

Janice Harvey, Charlevoix

Chicken Chop Suey for Two

½ c. white jasmine rice

2 T. olive oil

2 boneless chicken breasts, cut into cubes

1 t. fresh ground pepper

1 celery stalk, chopped

6 fresh mushrooms, sliced

1 15.5-oz. can bean sprouts with juice

1 3-oz. can water chestnuts, drained

1 10.5-oz. can Campbell's® Beef Consommé

Photography by: 831 Creative

3 T. soy sauce

2 T. cornstarch

Add rice to 3 cups boiling water; cover, reduce heat to low and let simmer 20 to 25 minutes (or use rice cooker). While rice is cooking, heat olive oil in a deep frying pan over medium heat.

Add chicken cubes, sprinkle with pepper; brown and fully cook. Add celery and mushrooms and sauté until celery becomes al dente. Add bean sprouts with juice and water chestnuts.

Heat, stirring often, then add beef consommé and soy sauce and simmer 3 to 4 minutes until it starts to boil; reduce heat to low.

To thicken, add cornstarch to a mug and scoop a ladle of juice into it and stir with a fork until smooth. Pour half of the mixture back into the Chop Suey, stirring constantly. Let simmer a few seconds and the sauce will thicken as it warms. Slowly add more of the cornstarch mixture until you reach a desired consistency.

Serve with rice. Garnish with chopped green onion or ground cashews, or both. Kids love to top this with fried rice noodles.

Mary Gorshe, Suttons Bay

Coconut Rice

1 c. uncooked rice

3/4 c. water

3/4 c. coconut milk

1 T. butter

Combine rice, water, coconut milk, and butter in a large pot. Bring to boil, reduce heat and cover. Simmer for 20 minutes, remove from heat and let stand for 10 minutes. To cook in rice cooker (recommended), put all ingredients in rice cooker and push button to cook.

Christin McKamey, Royal Oak

Spiced Cauliflower

1 head cauliflower, cut into florets

2 medium tomatoes, chopped

1 medium onion, chopped

2-4 garlic cloves, chopped

1 jalapeno, seeded and chopped

1 T. turmeric

2 T. coconut or sunflower oil

1 14-oz. can coconut milk

1 c. water

1 t. sugar

salt to taste

Grind the onion, garlic, jalapeno and turmeric in food processor until it forms a paste. Heat oil in large frying pan; add onion mixture and stir, cooking several minutes; do not brown. Add cauliflower florets and stir to

coat in the spices. Stir in coconut milk and water and simmer for 5 minutes. Stir in sugar and salt to taste. Stir in chopped tomato and simmer 2 to 3 minutes more.

Taste to check for seasonings and serve.

Variation: Stir in cooked, cubed sweet potato and sprinkle with roasted cashews. Serves 4.

Margie Guyot, Ellsworth

Cantonese Dinner

1 1/2 lbs. pork steak, 1/2-inch thick, cut into strips

2 T. oil

1 large onion, sliced

1 small green pepper, cut into strips

1 4-oz. can mushrooms, drained

1 8-oz. can tomato sauce

3 T. brown sugar

1 1/2 T. vinegar

1 1/2 T. salt

2 T. worcestershire or soy sauce

Brown pork strips in oil in skillet to remove excess fat. Drain on double paper towels. Place pork strips and all the remaining ingredients into a crock pot. Cover and cook on low 6 to 8 hours. Serve over hot, fluffy rice. Serves 4.

Mary Lauhoff, Cheboygan

Asian Barbecued Chicken

3 lbs. chicken wings

2 cloves garlic, finely chopped

1/4 c. hoisin sauce

3 t. light soy sauce

3 t. honey

2 T. tomato sauce or sweet chili sauce

1 t. sesame oil

2 spring onions, finely sliced

To make marinade, mix garlic, hoisin, soy, honey, tomato sauce, sesame oil and spring onions. Put chicken wings in a shallow non-metallic dish. Add the marinade, cover and leave in fridge for at least 2 hours. Cook the chicken on a hot, lightly oiled BBQ grill, turning once, for 20 to 25 minutes, or until cooked and golden brown. Baste with the marinade during cooking. Heat any remaining marinade in a pan until boiling and serve as a sauce. Serves 6.

Lorraine Green, South Boardman

Sausage Egg Rolls

1 lb. Italian sausage

1 T. oil, plus more for frying

1 lb. shredded coleslaw mix (or shredded cabbage)

1 bag of bean sprouts

1 onion, chopped

1 t. minced ginger

1 package egg roll wrappers

hot pepper jam or sweet & sour sauce (optional)

Cook sausage, drain and crumble; set aside. Heat oil in pan. Add coleslaw, bean sprouts, onion and ginger. Cook for about 3 minutes, until just tender, but not too soft. Add sausage and mix. Fill egg roll wrappers with 1 tablespoon of sausage mixture, roll up and moisten flap to seal. In large pan with heated oil, cook egg rolls until brown, rotating often. Serve with hot pepper jam or sweet and sour sauce.

Jennifer Sylvester, Sand Lake

Korean Salad

2 10-oz. bags fresh spinach, large stalks removed

1 7-oz. can sliced water chestnuts, drained

3 hard-cooked eggs, sliced

1 8-oz. can bean sprouts, drained (or 2 c. fresh sprouts)

1 medium red onion, thinly sliced

1/2 lb. bacon, cooked crisp and crumbled

Dressing:

1 c. salad oil

1/4 c. cider vinegar

1/3 c. ketchup

1/3 c. sugar

2 T. salt, or to taste

1 T. worcestershire sauce

In a large bowl, combine salad ingredients except for bacon. Chill until serving time. In jar, combine dressing ingredients and shake well. To serve, add dressing and bacon to salad and toss to mix. Serves 10.

Marilyn Willis, Sandusky



Chinese Cabbage Salad

Submit your recipe! Contributors whose recipes we print in 2013 will be entered in a drawing to win a prize: Country Lines will pay their January 2014 electric bill (up to \$200)! The 2013 winner will be announced in the Jan. 2014 issue.

Thanks to all who send in recipes! Please send in **"Under The Sea"** recipes by **May 10**, and **"No-Cook Meal"** recipes by **June 10**.

Mail to: Country Lines Recipes, 2859 W. Jolly Rd., Okemos, MI 48864; or email recipes@countrylines.com.

And On This Farm Were Some Rebates...

Michigan's farmers know how much energy goes into the daily operations of running their agribusiness. The state is aware too, as the industrial sector (including all agribusiness) accounts for 25 percent of Michigan's total energy consumption.

The Farm Services Program, available through HomeWorks Tri-County's Energy Optimization (EO) Program, rewards farmers for installing energy-efficient equipment and measures to help reduce energy use. Read on to find out how you can manage your annual operating costs and cash-in on energy-efficiency rebates.

"As Michigan works to save energy, a great deal of focus is on our local farms," says Art Thayer, energy efficiency programs director for the Michigan Electric Cooperative Association. "Energy Optimization offers solutions that help our farming members better manage energy consumption, thereby making their businesses more productive."

Prescriptive Rebates

Dozens of EO rebates are available for purchasing and installing energy-efficient farm

equipment. Rebates offset the cost differences between standard equipment and energy efficient models—putting your choices on an equal playing field and keeping things

Popular Farm Services Rebates

- Lightbulbs or fixture replacements **\$1–\$100/item**
- Circulation or exhaust fans **\$2/blade-inch**
- Low-energy livestock waterer **\$50**
- Milk house electric water heater **\$250/unit**
- Dairy refrigeration system tune-up **Up to \$150**

affordable. When weighing replacements or upgrades, consider the long-term investment return that comes with energy efficient models. While standard equipment just uses energy, energy efficient options are "givers"—putting money back in your pocket and saving energy year after year.

Custom Rebates

If you want energy solutions tailored to your farming operation or wish to move forward with renewable energy, the EO Custom Program may be for you. Rebates are based on annual per-kilowatt-hour (kWh) estimates. Custom projects may include advanced

lighting systems, dairy parlor and milk harvesting/cooling equipment, in-floor radiant heat, thermal blankets for greenhouses, crop irrigation horsepower reduction, and installation of variable frequency drives for irrigation pump motors.

FREE Engine Block Heater Timer (\$35 value)

Even though the weather is warming, engine block heater timers are still available. Instead of needlessly warming vehicle engines all night long, these

devices prevent energy waste by turning the motors on two to four hours before you need them. Visit michigan-energy.org/heattertimer or call 877-296-4319 to request your free timer while supplies last.

Energy Optimization—Something for Everyone

HomeWorks Tri-County knows that farmers are too busy to research the latest energy-saving equipment or ideas, so we've done it for you. The EO program puts you in touch with quality products and big energy savings. Visit michigan-energy.org or call 877-296-4319 for more information.

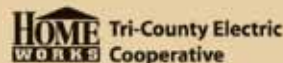


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Visit michigan-energy.org/RetailersSearch to locate the participating retailer nearest you.

ENERGY TIP: ENERGY STAR® bulbs use 75% less energy than incandescents and last 6 times longer.



ONLINE: michigan-energy.org PHONE: 877.296.4319

Energy Optimization programs and incentives are applicable to Michigan service locations only. Other restrictions may apply. For a complete list of participating utilities, visit michigan-energy.org.

Major Projects Keep Our Electric System Strong

An electric system like the one that serves your home needs to be checked regularly to make sure it can still meet the needs of you and your neighbors.

We look for problem areas that are just beginning to develop, for example, where there's been sudden growth or a large new motor added for irrigation or a small business. These circuits may need to be upgraded to higher-capacity wires or need regulators and capacitors to maintain voltage from the substation to the end of the line.

In 2013, our engineers have planned several major workplan projects.

- We're rebuilding four miles of the Westphalia 1 circuit from Parks Road to just north of Kinley, on Tallman Road. We'll bring the line closer to the road for easier maintenance.

- In Rolland Township, 2.5 miles of the Altona 2 circuit will be converted to a heavier conductor (wire). This will strengthen the entire system, since this line is a direct tie to circuits from two other substations.

- Just over three miles of the Martiny 4 circuit, along 21 Mile Road from 80th past 110th, will also be converted to a heavier conductor. The project will complete a tie-line between the Altona and Hersey substations.

"These projects will increase the strength of the lines, reduce line loss, and improve voltage during load transfers," explains system engineer Chris Jensen. "Together, they represent an investment of over \$1 million in materials and labor into keeping our electric system strong for many years to come."



Lineworkers Jeremy Zbytowski and Kyle Balderson are shown connecting a newly-installed utility pole to the system (the old pole and transformer are shown at right.) Crew leader Chris Teachout directs from the ground.

Photo - Chris Reed



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HomeWorks Tri-County Propane is not regulated by the Michigan Public Service Commission.



Photos — Rick Wetherbee

Mulch Makes the Garden

Are you looking for a simple one-step process to keep weeds from the garden, increase beneficial critters, fertilize plants, conserve soil moisture, improve its texture, moderate soil temperature, and prevent compaction and erosion? Mulch is the answer!

Most any material that you spread or lay on top of the soil is called mulch. Organics include compost, aged manure, straw, shredded leaves, grass clippings, bark chips, nut hulls, pine needles, and even wool batting. As these materials decompose, they improve the soil's fertility and condition. Inorganics—such as plastic, landscape fabric and small rocks—work similarly but do not add organic material to the soil and can be hard to remove.

What Makes a Good Mulch?

The ideal type of mulch allows water and air into the soil, resists compaction, is odor-free and attractive, and stays where you put it.

Deciding which one to use, however, depends mostly on availability, ease of application, and appearance. Rocks and 100-pound straw bales are heavy to move; black plastic tears and shreds, and straw may not beautify your perennial bed. Yet, in the right setting, each is an excellent mulch.

Many gardening shops and farming centers sell straw (be sure it was cut before going to seed), wood chips, and aged sawdust. They may even have crushed hulls from nuts such as filberts, peanuts and walnuts, or cocoa bean



Mulch examples above are (L-R) bark, pebbles, straw, coco bean hulls, rocks and peat.



Place mulch by hand to protect new plantings, and keep a “mulch-free zone” around plants, trees, and shrubs.

hulls that faintly fill the after-rain air with the aroma of chocolate. Free mulches include shredded leaves, pine needles, compost, tree trimmings or dry, unsprayed grass clippings.

Right Mulch, Time & Place

Any mulch's effectiveness depends on when and where it's used. Late winter or early spring applications prevent most weed seeds from even germinating. Mulching in late spring to early summer cools the soil and conserves moisture on hot days. Late fall applications keep soil temperatures warmer through winter, protecting roses, evergreens, trees, shrubs, and any bare ground. Remember that organic mulch applied in any season adds nutrients to the soil, and therefore feeds plants.

Around vegetables, plastic helps prevent weeds and retain moisture. A black or colored plastic mulch also raises soil temperature for heat-seeking fruits and veggies such as tomatoes, peppers and eggplants. However, plastic mulch is typically not permeable to water or air, and it cracks or tears easily.

Landscape fabric lets water and air through while still preventing weeds, which is ideal around trees and shrubs, as well as between beds or on pathways. This durable fabric is often used as a base, then topped with a thin layer of more attractive mulch, such as wood chips. Together, these provide more protection against weeds than either one alone.

How to Apply Mulch

Whether you rake it, dump it, or spread it with your hands, the right way to mulch depends on the area and plants. In smaller beds, avoid damaging existing plants by using your hands.

Keep a “mulch-free zone” around plants, trees and shrubs: about a 1- to 2-inch space for plants, 4- to 8-inch circle around shrubs, and a 12- to 36-inch circle for trees. The finer and denser the mulch, the less you need. Maintain a 2- to 3-inch thick layer for fine-textured materials such as sawdust, shredded leaves and compost. Use 4 to 5 inches for coarser materials like wood chips and straw. Organic varieties will eventually decompose, so apply additional mulch to maintain the right depth.

No matter how you mulch, the benefits go beyond soil and plants. Organic mulch also provides food, shelter and hibernating sites for birds, caterpillars and butterflies. A mulched landscape is also more attractive and unifies the scenery. It's amazing how a one-step process can be so simple to do, yet so significant to a beneficial, beautiful and thriving landscape.



Source: Aprilaire

Keep Indoor Air Healthy

Q: *I want the best air for my family. Which type of central air cleaner is best, and will installing one make my heating and cooling more efficient?*

A: Indoor air quality is becoming a greater issue as homes become more airtight for energy efficiency. And with all the synthetic products used in homes today, indoor air is often more polluted and hazardous to your health than outdoor air.

Installing a high-quality central air cleaner or filter in the furnace/air conditioner duct system does not technically improve the efficiency of your heating and cooling system. What it will do is keep the units running at their highest original efficiency levels. Most air cleaners use little or no electricity to operate.

With a lower-quality air cleaner, such as the standard 1-inch-thick fiberglass filter, dust and dirt can build up on the heat exchanger and cooling coil surfaces. This dust creates a layer of insulation so that heat is not transferred as effectively as it should be, and reduces overall energy efficiency.

If you don't change the filter often enough, dirt can clog the filter and reduce air flow through it. This further reduces efficiency because the heating and cooling coils and heat exchangers are designed for a specific

air-flow rate.

In the past few years, manufacturers have begun producing new, super-efficient central air cleaners. They use a combination of electronic air-charging and filters to trap almost all of the tiniest air particles. They can even catch flu viruses and bacteria as they pass through the duct system.

Standard electronic air cleaners use wires to give air particles a negative charge. A collection cell has plates with a positive charge so the negatively charged particles stick to

Above: Compared to a standard fiberglass filter, a thick pleated media air cleaner usually requires professional installation for the duct modifications needed.

Companies that offer whole-house air cleaners:

Aprilaire
800-334-6011, aprilair.com

Dust Free
800-441-1107, dustfree.com

Lakeair
800-558-9436, lakeair.com

Pure Air Systems
800-869-8025, pureairsystems.com

Trane
888-232-5290, trane.com

it. When the collection cell is dirty, you can wash it in the dishwasher or bathtub and slip it back into the unit.

For many, the standard type is adequate, but for people with allergies to smaller indoor air particles, the newer electronic air cleaners with a charged filter may be more effective. The electricity cost to operate either type of air cleaner is not significant.

It's important to regularly clean the collection cell of the standard electronic air cleaner to keep it operating at maximum performance and reduce the amount of ozone generated. When the cell gets dirty, the charge can arch from the wires to the collection plate and produce excessive concentrations of ozone gas, to which some people are sensitive. You can also set it to a lower charging voltage to reduce ozone.

Another option is a pleated media air cleaner. It's less expensive and relies on many square feet of folded filter material to catch particles as the air passes through. There are various levels of media quality and price. The cleaning effectiveness of various models can be compared by their MERV (minimum efficiency reporting value) rating.

If you don't want to have the ducts in your home modified to install a new air cleaner, consider a self-charging electrostatic model. This slips into the existing furnace filter slot and is many times more effective than a fiberglass filter. Just the air flowing over the resin filter material creates a charge that traps more dirt particles.

Another option is a bypass HEPA (high efficiency particle air) cleaner that has its own air circulation motor. It's a very dense filter, which makes it very effective, but it may create too much resistance for the furnace blower to force adequate air flow through it. The bypass design has its own blower so the air flow through the coils or heat exchanger is not impeded.

With any central air cleaner, it cleans only when a furnace/air conditioner blower is running. To get around this, Aprilaire® offers a new controller which mounts next to the wall thermostat. It allows you to automatically run the blower for any length of time when no heating or cooling is needed.

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

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





Look Up, Stay Alert During Outdoor Work, Play

As the weather turns to warm, adults and kids alike will head outside to perform winter clean-up and play. Before they do, remind them to look up, down and around, and be alert for power lines and other electrical hazards—it's the best way to stay safe from electrical shock, and even death.

"Here at HomeWorks Tri-County Electric Cooperative, using proper procedures and safety measures is a matter of life and death," explains Chris O'Neill, safety coordinator. "We take safety seriously at home, too. Accidents happen, but if we educate ourselves and our children, we can keep them to a minimum." See a few safety tips below...

For Kids . . .

Never fly a kite on a rainy day or anywhere but an open space. A high point in the sky makes a kite a grounding point for lightning, and kites could easily become tangled in power lines.

- Don't climb trees that are near power lines and poles—both evergreens and leafy trees can disguise danger.
- Never climb a power pole.

- Stay far away from power lines lying on the ground. You can't tell just by looking if electricity is still flowing through them. If there's water nearby, don't go in it. Water is the best conductor of electricity.

- Obey signs that say "danger" and "keep out" around large electrical equipment, like substations. These signs aren't warnings; they're commands to keep you safe.



For Adults . . .

Power lines tend to become part of the landscape, so before climbing a ladder to trim branches or access your roof, look around to make sure you are not in close proximity to electric lines.

- Remember that power lines and other utilities run underground, too. Call 811 to have utility lines marked before you start digging.

- Starting that winter cleanup yard work? Sweep dried leaves and debris from outdoor receptacles.

- If they're not already, consider upgrading your outdoor receptacles—or any outlets that could come in contact with water—to ground fault circuit interrupters (GFCIs). GFCIs immediately interrupt power

- flow when a plugged-in device comes in contact with water. Regardless, keep your outlets and cords dry and covered outside.

- Use only weather-resistant, heavy-duty extension cords marked for outdoor use.

- Don't leave outdoor power tools unattended for curious children or animals to find.



For more safety tips and information, visit SafeElectricity.org.

Sources: Electrical Safety Foundation International, Safe Electricity

Co-op Connections Supports Local Businesses

Use your Co-op Connections Card to save money on national deals, prescriptions and health care, and at these local businesses:

■ **Farwell Flea Market & Thrift Store**, 770 E. Main St., Farwell, 989-588-2933. *10% off anything over \$10.*

■ **Five Corner Party Store & Pizza**, 4971 N. Greenville Rd., Lakeview, 989-352-6633. *10% discount on purchase; not valid with other offers or sales.*

■ **Capital City Automotive, Inc.**, 2900 W. St. Joseph St., Lansing, 517-484-2555. *Free estimates, fleet labor rate – \$60 per hour, 10% off parts.*

■ **Ginkgo Tree Inn**, 309 N. Main St, Mt. Pleasant, 989-773-8733, ginkgotreeinn.com. *10% off room rental.*

■ **Reed and Hoppes Inc.**, 2661 E. Grand River Ave., Portland, reedandhoppes.com, 517-647-4441. *\$40 tow within Portland city limits; outside city limits, 5 miles free. Cars only.*

■ **M-57 Auto Body, Frame Repair, Used Cars**, 1614 E. Carson City Rd., Sheridan, 989-291-5125. *Free loaner car with repairs.*

■ **Gammy Woods Campground**, 1855 N. Coldwater Rd., Weidman, 989-506-8005, manager@gammywoodscampground.com. *Stay 4 nights, get the 5th free. Not applicable on holidays or special events.*

For more information about local, national and pharmacy discounts, visit homeworks.org and click on the Co-op Connections card.



People Fund Helps Food, Housing Programs

The Tri-County Electric People Fund made six grants Feb. 27, totaling \$6,093.94:

- Barryton Area Mobile Food Pantry, \$1,650 for two food truck deliveries;
- St. Vincent DePaul-St. Mary's of Charlotte, \$1,200 for their rent assistance program;
- Sunny Crest Youth Ranch in Sunfield, \$1,000 for their Hands-On program;
- Clinton County Senior Center, \$1,500 for their nutritional food program;
- Montcalm County family, \$420 for a year of Lifeline service; and

- Clare County family, \$323.94 for housing and medical expenses.

How To Apply For a Grant

Write to 7973 E. Grand River Avenue, Portland, MI 48875. We'll send you an application form, grant guidelines, and other helpful information. You'll also find details and application forms online at homeworks.org.

Note: Applications must be received by May 13 for the May 22 board meeting; and by June 24 for the July 3 meeting.

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Water Wars

S ometime in the fall of 1944, a drunken driver dove his car into the basement of the unfinished house where we would one day live. We found this out 36 years later from the carpenters who were remodeling the house to make room for our expanding family. It wasn't the only time something unwanted ended up in our basement.

The name of that driver is probably lost to history, but his escapade, likely the subject of many jokes at his expense, lives on in the lore of a house we never intended to be our permanent home. But here we are.

We adapted, as humans are prone to do, and we've made it ours, this house that was built from bartered war-scarce materials by a local fuel oil dealer in a field outside the city limits.

It's had more than its share of remodeling, and it's become the stage from which we engage the world. It's our home. An observation in a terrific book, "The Fault In Our Stars" by John Green, has stayed with me: "The weird thing about houses is that they almost always look like nothing is happening inside of them, even though they contain most of our lives."

No one tells you when you buy a house, especially in the country, just how large a role water will play in your life. We've learned how to deal with a flooded basement, well water, septic systems, sump crocks, ice dams, water softeners, well pumps and expansion tanks, drainage, standing water and mosquitoes. I've become a decent plumber, if I do say so myself. Just think what I would have missed if we lived in a city apartment.

But water so coveted in the desert is unwelcome in a leaky boat—or a house. We get too much water when we don't need it and not enough when we do. Farmers are forever wary about droughts and floods, both devastating. Forest fires start during dry times and are impossible to extinguish without water.

We need it, of course. But why so much



Keeping our water clean is a shared responsibility, whether in our backyard or Lake Michigan.

at once? That's what I wonder when we get massive downpours that flood our yards and basements, or when it falls frozen in winter, blanketing everything in white and raising havoc with driving and electricity.

It's worst in spring. Snow melted, water lays in the yard, slowly eating away at the frost underneath, like acid. You may think that water is life-giving, a boost to all living things that spring in spring. But it has an evil twin. That twin relentlessly seeks out trouble: the tiny crack in a foundation and the open seam hiding where roof lines meet.

We found out many years after buying the place that the septic system was nothing more than a 500-gallon tank with a single pipe outflow to a common field drain on our neighbor's property. That's not exactly code, although it was probably routine when the house was built. After years of seeing our yard turn into a smelly, soggy spring mess when the so-called septic system backed up, we got an industrial-strength mound system with three 1,000-gallon tanks and a malfunction alarm (which has the side benefit of looking like we have a home security system). Problem solved.

After snowmelt and spring rain flooded our basement a few times, we contracted with one of those dry basement system companies that dug around the foundation, installed a drain and waterproofed the concrete block. We invested in a battery-powered backup sump pump, because what good is a regular sump pump when

the electricity is out. Our basement has been blissfully dry ever since. Problem solved.

We have a shallow well, which means we're tapping into water that's only 25 to 30 feet deep. (A good reason to make sure the septic system works.) Typical wells drilled around here now go down 180 feet. Old-timers tell us that the aquifer we're tapped into historically has the sweetest water around, and I agree. Even though shallow wells are now

frowned upon because of health concerns, I've come to like this water and as long as water tests show the water is OK, we're not going deeper. No problem (but a bit of a worry).

The quality of the water in our rural homes is generally out of our hands, no matter what we do on the home front. It's affected by rainfall, minerals in the soil, runoff carrying pesticides and fertilizer, and drilling that cuts through the aquifers. Since so many of us in rural Michigan get our water from private wells—there is no equivalent to rural electric co-ops for the distribution of water, and water must be tested and protected. (To find out about testing your drinking water, go to michigan.gov/deq or contact your county health department. There is a fee.)

We are blessed with abundant water in Michigan. We think of it as our ace-in-the-hole—how it will help us prosper when the rest of the country runs out of fresh water. But it won't be any good to anyone if it's not protected.

Losing access to good water would be worse than a drunk driving into your basement.

Mike Buda is editor emeritus of Country Lines. Email Mike at mike.f.buda@gmail.com or comment on his columns at countrylines.com/ramblings.





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