

Prudent Living[®] MAGAZINE

Going Solar Makes \$ense for Black River Produce

Page 16

*"The cheapest watt is the watt
you don't use." —Mark Curran*

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The Prudent Living Community

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The Prudent Living Community is a voluntary association of like-minded people committed to thinking and living prudently.



Mark Curran and Black River Produce

Mark Curran of Black River Produce is in the foreground of our cover photo this issue. Mark is the mind behind the solar installation at the company's headquarters in Springfield, Vermont. The project represents the largest private solar installation in the state, and it also represents a smart business investment.

"To go head-to-head with our competitors, we need to do all we can to lower our costs," Mark says, "Energy is one of our major expenses. Reducing those costs makes us more competitive in today's marketplace."

In the background of the photo you can see the results of that smart business decision. Prudent Living was contracted to install 1,495 solar panels on the roof of their warehouse and garage, which will easily produce

more than a megawatt a day during sunny months (enough to power 800-1,000 homes), saving the company as much as 50 percent on utility costs.

The addition of their new solar system is just one of several ways Black River Produce is committed to renewable resources. They recently redid their lighting and added computer controls to their refrigerators to be more efficient, and all of their trucks are powered by biodiesel converted from the used vegetable oil at the restaurants they deliver to.

Prudent Living is proud to work with a company so committed, not just to the use of renewable energy as an alternative to fossil fuels, but to the realization of how renewable energy can help small businesses stay in the economical game.

Prudent Living Staff Update



Matt Smith - Master Electrician

Matt is a master electrician for Brite Lite Electric LLC in Windsor, Vermont; the electrical contractor Prudent Living uses for its renewable energy installations. Matt brings an extensive history of work experience to the Prudent Living team. In his spare time Matt enjoys a plethora of outdoor activities including hunting, offroading, and snowmobiling. Matt's other hobbies include home improvements to his log cabin in Cornish, New Hampshire, and working on cars and trucks in his shop.

Matt graduated from Mid Vermont Christian School in 2004 before entering the Electrical Apprentice Program at Vermont Technical College where he completed his apprenticeship in 2008, as a result of which he acquired his Journeyman Electrician's License. He worked as a Journeyman for 4 years before receiving his Master Electrician's License in 2012. Matt has 8 years of commercial and residential electrical experience.

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PRUDENT LIVING SOCIAL MEDIA:



What's New & What's News

Website Update



We've made some major changes to our website. Among those changes is the giant "social" menu at the top of the page! This is something we're excited about, so here's a brief summary:

1. First and most important is the company blog. We will be updating the blog regularly from now on.



Here's the plan:

- **Mondays** will be a day for the vision of Prudent Living. We will be talking to our founder Paul Biebel about how far we've come, how we got started, and where we'll be headed. Click [here](#) for an example.



- Nancy's blog, *On the Home Front*, already offers valuable solutions around the home and garden. In our new **Tuesday** and **Thursday** editions of the *Prudent Living blog*, we will be broadening the scope to make it valuable to more of our community. Here's one of our recent [entries](#).

- We've reserved **Wednesdays** specifically to show you our budding and wit-filled personalities! We've recently released a few videos that we had a bit of fun making. Try this [one](#) on for size.

- **Fridays** are reserved as a weekly review. Every Friday we'll be putting up a brief synopsis of all that has been discussed in the both blogs that week. That way, if you missed anything, don't worry—you can still catch all the great stuff that's going on.



2. The next social resource we will be using regularly is our **Facebook** page.

Here we will be advertising featured products from the Prudent Living Market, linking to our daily blog posts, as well as posting any news in the areas of sustainable business and living practices. Usually Facebook posts include the more interesting and visually attractive things, but we hope to expand our fan base with Facebook as the centerpiece so that we have a list of followers that are interested in our resources and products. Facebook will be kept updated daily, as we find the things that interest our community the most and share them.

3. And lastly, **Twitter**.

Twitter is a bit different. Here we are interested primarily in news articles and blog posts dealing with alternative energy and sustainability practices. Where Facebook is reserved for the shorter, more image-friendly updates, Twitter is for the global and economical news we are privy to. We have access to a number of reputable resources and our goal is to be broad with the focus here. We want to keep people informed about renewable energy not just in the US, but all over the world.



Now that you're aware of what we're up to on the blog, here comes the good part: **We need your help!** You are our community, and we are deeply concerned by what concerns you. We welcome any and all input, including ideas for blog posts, photos for Facebook, or even links to articles on Twitter. Send them our way. Our community is ever growing and expanding and the more people we have contributing to our resources, the faster it will grow.

Now that all the social media arenas have been discussed, I just wanted to take a minute and refer back to something that I glossed over. The **Prudent Living Market** is now open for business! In the market we have six categories—energy conservation, gardening, home, personal care, preparedness, and recreation—and a wide variety of products that all fit the broader category of "prudence". Everything from organic cleaners, to backpacks made of 100% recycled materials, to water purification devices, and even portable solar panels to charge your cell phone! Some Tuesdays, on the blog, we will be posting product reviews and tests we devise with some of the things from the store so stay tuned for that! In the meantime head over to prudentlivingmarket.com to see what we've got.



Steve Malone Joins Prudent Living

Prudent Living recently brought on board seasoned real estate professional Steve Malone to lead the company's commercial solar business development. Malone's expertise in obtaining permits from state and local environmental and consumer protection agencies and managing project professionals such as engineers, architects, attorneys, contractors, marketing and sales professionals is an enormous benefit to the Prudent Living team, says company Vice-President Tim Biebel. "We are excited about adding Steve to our team at Prudent Living," Biebel commented. "The level of expertise that he brings to the table is second to none and will provide us even more opportunities to explain the significant benefits of renewable energy to businesses throughout New England."

Malone's primary responsibility will be to sell large-scale commercial solar PV and geothermal installations, from initial contact to customer satisfaction follow-up after completion of the installation. "This is simple and logical: Individuals and businesses need access to predictable, reliable and affordable energy resources," Malone explains. "Our country, as a whole, will benefit greatly the more we become independent of foreign energy suppliers. Our environment will likewise benefit the more we reduce our carbon footprint. Solar is an investment that goes right to the bottom line profitability of any business and it demonstrates a willingness to reduce the environmental impact of doing business, something customers will appreciate. I've had a business relationship with Prudent Living founder Paul Biebel for many years. It is a business relationship built on trust and that provides me a great level of confidence that Prudent Living will be a successful enterprise for me to be involved with."

Our Social Network

Prudent Living Blog Excerpts

by Nathan Biebel

‘Tis the season to be jolly, right? Right?

Unfortunately, even though the seasonal jingles are played and the spirit of the holiday season begins to envelop us, one of the more famous facts about the holidays is that they build a brick wall of stress that keeps the joy of the season from some of us. Here are 5 reasons for holiday stress and how to deal with them.



Four Meaningful, and Frugal, Gift Ideas

My family has always been big believers in the idea that a gift from the heart is more meaningful and appreciated than any store bought present. That’s a good thing too. Gifts from the heart very rarely cost as much as the usual materialistic loot sold in stores. So here are 4 frugal gift giving ideas that will save you money and earn you points in the “thoughtfulness” category.

Prudent ProTip: Portals to the Outside World

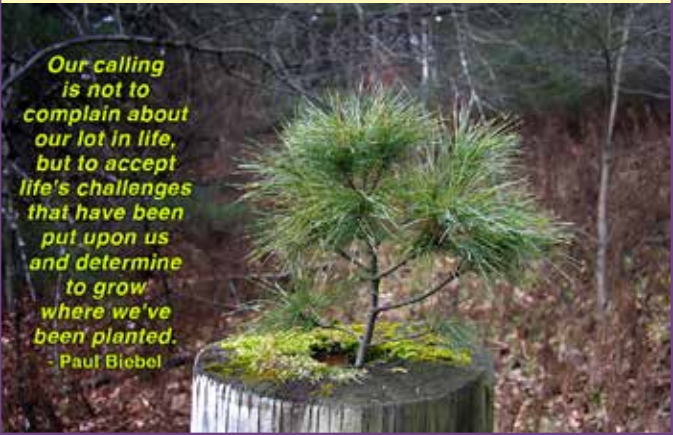
Installing new windows is monumentally expensive and the expected payback time –in some cases as much as 10 or even 15 years –makes installing new windows borderline irrational. Us tightwads (read: “broke folks”) will want to consider options that don’t include expensive replacements. So here’s three ways you can improve the heating efficiency of your home just by paying attention to the windows you already have installed.



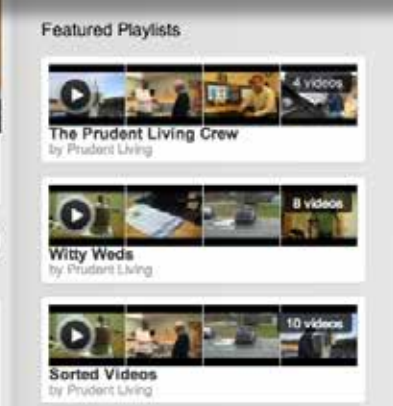
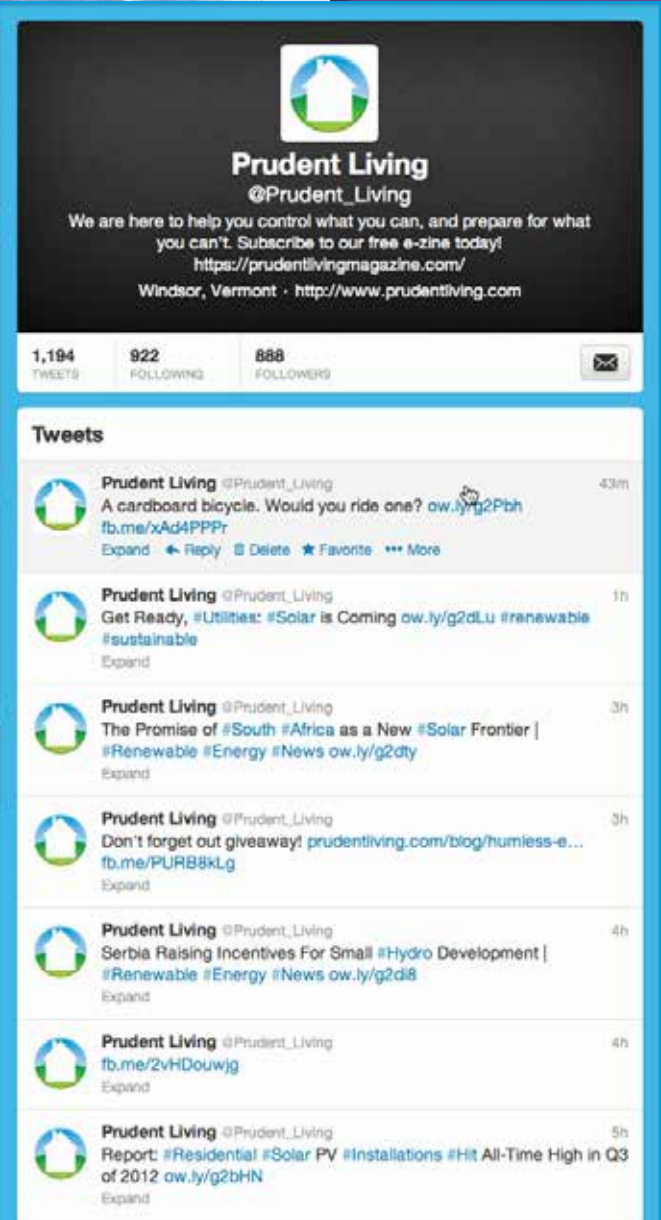
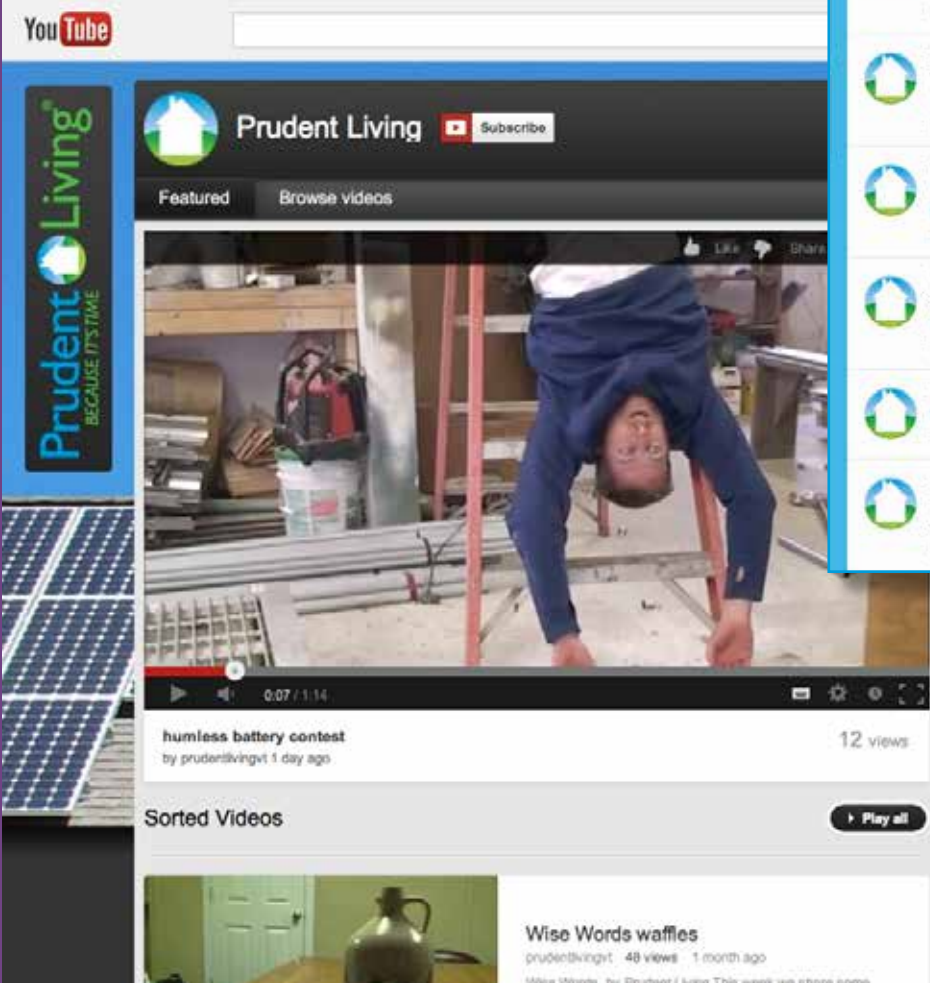
Challenge Accepted

While there are plenty of times we really should have planned ahead–times when we “should have seen it coming”– there are also times when it feels like you’ve been given a raw deal. Like the little pine tree below, we might even ask “who put me here?!” Let’s pretend you are the little pine tree.

[Read more...](#)



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and Watch us on Youtube!







Turning an Avocation into a Vocation

by Paul Biebel, Founder and President, Prudent Living, Inc.

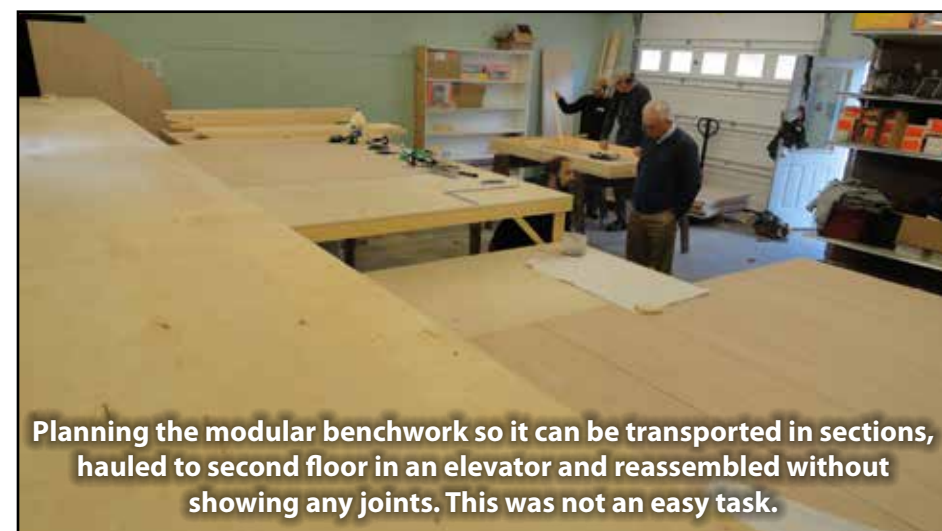
Somewhere about 1977 or so, I got reacquainted with Lionel Trains. I had memories of playing with them in our house in Claremont, NH, when I was six years old. They left a fond imprint that would come back in living color twenty years later when I purchased my own home. It was a huge old twenty-two-room carriage house; the remnants of a mansion that had been torn down many years before. It had a great attic that was all plastered and finished off.

So I built my first layout in the third floor attic. The main staircase entered the third floor in the middle and was flanked by two bedrooms, which promptly got torn out because they were in the way. My layout was about thirty-three feet long and sixteen feet wide and shaped like a horseshoe. It had four or five different mainline loops and several different levels with lots of lights, sounds, and scenery. I got totally carried away with reviving my childhood memories. My wife thought I was crazy but she let me do it. She probably figured I could have worse hobbies than playing with choo-choos.

Well, we moved three or four times over the years and each time we moved, I would have to tear down my layout. That got really old, so eventually I stopped building train layouts for myself and just displayed my collection on shelves in my office. About four years ago, as I was contemplating opening a store display for Prudent Living, it occurred to me that my collection of trains might enjoy being seen in public. That's when I started dreaming again about creating my own perfect little community with a Lionel train running through it. It became quite an attraction and because of that, Prudent Living got a lot of publicity and some rather nice jobs.



Paul Biebel is the founder and visionary for Prudent Living Inc. He has also served as President and CEO of Biebel Builders, Inc, a company that has been designing and building high quality homes since 1976. Since the turn of the century, with the advent of emerging new technologies, his interests have directed him toward helping his customers make sound and prudent investments into many areas of their lives and also to the homes they live in. This passion has evolved into his newest venture – Prudent Living, a company that offers products and services that support a more prudent way of life.



Planning the modular benchwork so it can be transported in sections, hauled to second floor in an elevator and reassembled without showing any joints. This was not an easy task.



Crossing the gorge in front of a model of the Wilder Dam in Hanover, NH.

One day, another merchant contacted me and wanted to know if we would be interested in building one for his store. He wanted a much bigger one and said that if we agreed to do it, we could also locate Prudent Living there as well. So now we are doing just that. We are playing with trains and building a large educational display that will feature many forms of energy and how it is used in America. It also gives a peek into the future of sustainability as we model a prophetic glimpse of how technology can be implemented into the construction of new homes.

We will be displaying a complete Prudent Living Community, with hopes that someday we might even be given the privilege of designing and building one. This project will be finished in early 2013.



Come take a ride with us on the Prudent Living Train for a journey into the future of sustainable living.



Jimmy Moeykens

Jimmy has worked for Prudent Living founder Paul Biebel since 1996. He enjoys outdoor activities of all sorts including hunting, fishing, and camping. He also spends what little spare time he has on his hobbies which include building canoes, kayaks, and playing and building guitars. Jimmy is married with four children and two step-children.



Steve George

Steve has worked for Prudent Living founder Paul Biebel since 1996. He enjoys outdoor activities of all sorts including hunting, fishing, and camping. In his spare time he collects assorted beer paraphernalia, which he keeps in a shed behind his house which has been affectionately dubbed "Pa's Shed" by his grandson. Steve is married and has two children, one daughter-in-law and two grandchildren.

Going Solar Makes Sense—and *Dollars and Cents*—for Black River Produce

by Melanie Raskin

“Your success in life isn’t based on your ability to simply change. It is based on your ability to change faster than your competition, customers and business.” These words by internationally renowned leadership development speaker Mark Sanborn perfectly sum up Black River Produce’s strategy. This North Springfield, Vermont wholesaler of fresh, organic, and specialty produce and products to stores and farmers’ markets for more than thirty years is changing. They are positioning themselves against the competition, mostly multi-national billion-dollar international food distributors, by investing in solar power. “To go head-to-head with our competitors, we need to do all we can to lower our costs,” said Black River Produce partner Mark Curran. “Energy is one of our major expenses. Reducing those costs makes us more competitive in today’s marketplace.”

Last fall, Prudent Living installed nearly fifteen hundred 240-watt solar panels to cover Black River’s 62,300 square feet of roof. The \$1.3 million photovoltaic project is the largest private solar power system in Vermont and will generate enough power to save as much as 50 percent of the company’s utility bill, which averages \$11,000 to \$12,000 a year. It was the right benefit at the right time, said Curran. “One disadvantage of our business is that we’re energy hogs, with a need for reliable refrigeration and many diesel delivery trucks,” he explained. “Because of our big carbon footprint, we had been looking for a better way to use energy for a long time, but the payback was too slow, as much as twenty to thirty years. But, this year, with good pricing and tax credits, it was much more feasible.”

More feasible, more reliable and more impressive. The company is collecting a mega-watt of energy a day, enough to power 800 to 1000 homes. One of the other big selling points to Curran was Prudent Living’s innovative approach to ensuring that stellar collection rate: micro inverters. “They are way ahead of the curve by using micro inverters instead of chain-gang inverters,” Curran noted. “Remember the old Christmas tree lights we all used to have, when, if one light went out the whole string went out and you could never find the problem bulb? Solar is the same. In the old days of solar installation, we would have had eight inverters ... and eight possible problems. Because of the micro inverter, each solar panel is independent. If something doesn’t work, it only affects that one panel; the rest are still working and producing power. This saves us money because, before, you didn’t know which panel was causing the outage. Now, it’s easier to diagnose the problem panel and, best of all, the system is never down.”



A writer since 1982, Chapel Hill, NC’s Melanie Raskin has had fun with everything from total communications campaigns to press releases, newsletters to videos, advertising copy to audio magazines, brochures to greeting cards. Highlights of her career include a week with the Hollywood PD on the Sunset Strip, riding with a long-distance trucker, channeling her inner chicken for a commercial radio campaign selling breakfast bagels and working with fitness guru Richard Simmons. She’s been the leader of the Triangle Writers Group since 1985 and volunteers at her church and the Carrboro Farmers’ Market. Her hobbies include reading about food, shopping for local foods, cooking and eating—then talking about it afterward!



Racking and wiring waiting for solar panels.

The solar project was just one of many renewable energy solutions Black River has adopted. “The cheapest watt is the watt you don’t use,” Curran pointed out. “We redid our lighting to make it more efficient. Our refrigeration system is computer-controlled. We power our fleet of trucks with vegetable oil from our restaurants converted to bio-diesel. And now, we’re investing in ourselves and our environment with solar power. Our goal is to get as much local food on the plate as possible. Over 22 percent of our sales were locally-raised products from more than 120 Vermont farms. Being socially responsible fits our philosophy. It’s a win-win for everybody.”

And, it’s good business, according to Tim Biebel, Vice-President of Prudent Living. The project was a boost to the economy – both the local one and Black River Produce’s. Prudent Living employed an additional twenty to twenty-five people for the autumn installation. And Black River Produce can look forward to saving money for decades to come. “This project brings our company mission statement to life,” Biebel stated. “We provide services, strategies, and products to promote a prudent way of life. We’re here to help you control what you can and prepare for what you can’t. It’s our job to help companies prudently manage their resources and, at the same time, become more profitable. While going solar is helpful to the planet, it’s also just plain smart business. It helps eliminate overhead: as soon as the system is paid off, it’s one less bill to pay—the company keeps more income, which improves the bottom line. It reduces reliance on expensive traditional fossil fuels. It saves money because it’s using a free source of power, the sun. It frees up cash to hire more people, to innovate systems, to develop new products, and to invest back in the company. For many companies,



today's competitive business climate is like walking around wearing a belt that's too tight. Alternative energy solutions loosen the belt a notch, giving businesses more room to breathe, more freedom of movement, more options. Going solar is good business that starts paying off immediately: the very first utility bill proves the investment."

It's been said that all great change in America begins at the dinner table. That's where most great American ideas start: from garage businesses like Apple to life-changing non-profits like Habitat for Humanity. When people sit and talk, they can resolve challenges and create solutions that can make a profound difference. That's what prudence is all about: making a difference to people and business by making right choices and preparing for the future. And it works. Evaluation—proof—is important to Curran. "I'll be accumulating data on our savings and preaching to everyone I meet—our vendors and customers—to go and do likewise. Despite the number of alternative energy plants going in, most people are energy-illiterate. This way of converting energy is good for business."



Tony Prouty sets a solar panel.

"We're excited about alternative energy solutions such as wind, solar, and geothermal for commercial enterprises because, in the long run, they save organizations a lot of money," Biebel concluded. "This was a great project for us. We're delighted by the environmental leadership Black River Produce is showing and proud to be a part of that good stewardship. Beyond being the largest private system in Vermont, what's really rewarding about this project is that Black River Produce brings people high quality, delicious, garden-fresh fruits, vegetables, and specialty products. And now they're doing it in a way that is good for the planet, with clean energy from the sun."



Completed array.



Mark Curran and Steve Birge, owners of Black River Produce.

A Year in Review

As I write this column we just launched our new website and online store. It is simply an example of our desire to perfect the way we present ourselves on the web and to create one place where people go to experience what Prudent Living has to offer. I am happy with the way the site turned out and that after an entire year we finally have the store up and running. Accomplishing these mountainous tasks came with some elation and frustration and I'm glad we are past it.

I am excited because we can put more of our focus into providing our customers with great resources to help them prepare for the future. The Prudent Living Blog and On The Home Front Blog are updated four to five days a week with information that has to do with everything from business investments to cooking this evening's dinner. Our Facebook pages and Twitter feeds are alive with information and updates about our company, too.

Aside from the website and the store we have been very busy installing solar and building homes. This year, thanks in most part to Black River Produce, has been our biggest solar year yet! We have installed close to 500 kW just this year! To help put that in

perspective that is approximately 1,900 solar panels or 33,500 square feet of solar collectors. All these systems combined will help save almost \$100,000 per year. That's pretty impressive if you ask me.

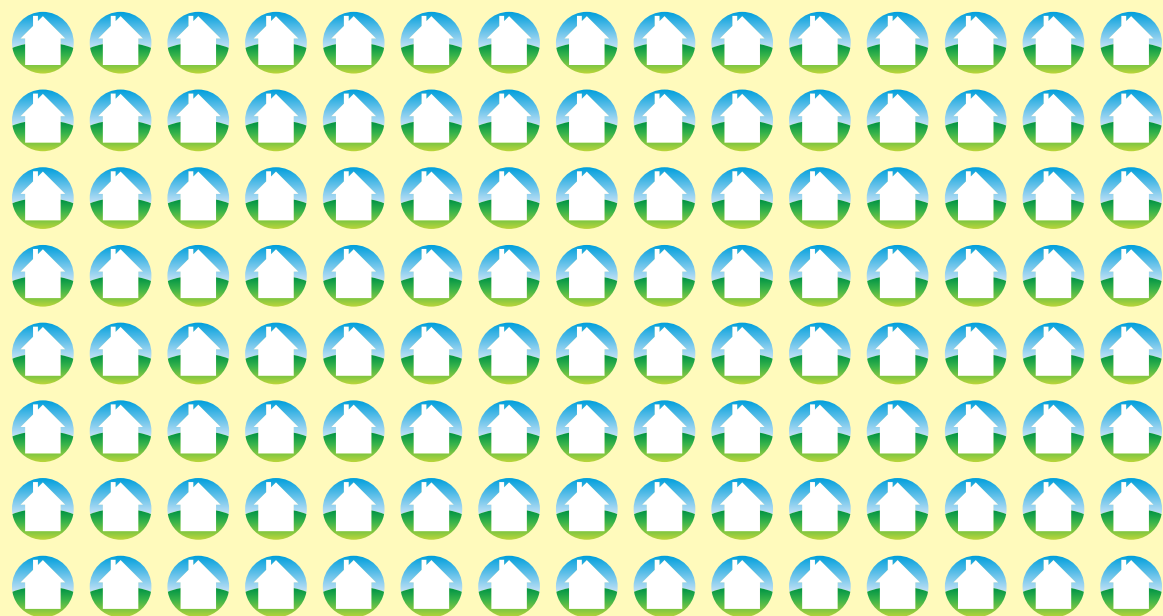
I also just finished an energy audit with some customers, and with all the improvements to their house such as some added insulation in the attic, a little spray foam in certain spots in the basement, and a new layer of insulation on the walls they will save an estimated 32 percent on their heating bill. Plus they received \$1,500 in rebates. It is great to be able to help businesses and homeowners save money by pointing them in the right direction.

We have hired two full-time employees for our marketing department and two more field workers. As a result, we had to remodel our office space (again) and I am already thinking about what we will do next.

I can't say that the entire process has been easy. There have been a lot of late nights and very early mornings by many of our wonderful employees to make this happen. But hard work has a certain satisfaction that comes with it and we are all excited about how far we have come and what the future has in store for us! Thank you all for your continued support!

-Tim Biebel

500kW = Enough solar generated electricity to power 120 homes for a year



ANNOUNCING!

Prudent Living® Market

Home Page Energy Conservation Gardening Home Personal Care Preparedness Recreation Search...

GRAND OPENING! 10% OFF STOREWIDE

The Prudent Living Market is finally here with a variety of different products ranging from natural house cleaners to solar chargers. These have been hand selected and will help you lead a prudent lifestyle. Come check them all out now and spread the word!



2.5 Watt Solar Charger \$39.95

Use this great solar charger to charge your USB devices, phones, batteries and more. Built in adjustable stand for optimum positioning; built in suction cups to attach panel to a car window, and adjustable straps to attach to any pack pack or shoulder bag.

Advanced Water Filtration Straw \$24.99

This compact Advanced Water Filter provides the user clean, filtered drinking water from any running fresh water source. Engineered to effectively reduce waterborne pathogens by 99.9999% while also effectively removing chlorine, heavy metals, industrial pollutants, agricultural runoff, and trace pharmaceuticals.



Humless Generators

Lithium Batter Generators that can be powered by solar panels for when you need power most but have no electricity.

www.prudentlivingmarket.com

A Box of Batteries

"Jeb here, what can I do for ya?" said old Jebidiah Forethought when he answered the phone in his home.

"Jeb! It's Huey," said the voice on the other end belonging to Huey Hindsight.

"Howdy Huey, how are ya?" said Jeb, immediately recognizing the hoarse old voice of his long time friend.

"Fine! I'm just fine. Listen, I need a favor. You got an extra flashlight?" asked Huey.

"Sure do, I keep a couple in case the power goes out,"

"Good!" exclaimed Huey, "can you bring it by?"

"Why sure. I'll be right over." said Jeb.

Jeb hung up the phone and rummaged around for a spare flashlight before heading over to Huey's place.

As soon as old Jeb pulled into the driveway he frowned in confusion. All the lights were off and it looked like nobody was home. Jeb sat in his old truck to think things through. Maybe Huey stepped out for a minute, he thought.

Huey was always a bit scatter-brained, so Jeb thought nothing of it. He took up his flashlight thinking to leave it on the front step. When he walked up to the house, though, something moved inside.

Frowning, Jeb rubbed his stubble before trying the handle. It was unlocked. He pushed the door open and stepped inside, brandishing his flashlight like a club.

What sounded like a man feeling around in the dark was coming from the living room accompanied by muttered curses. Jeb lifted his flashlight, steeled himself with courage, and pounced. Driving his flashlight down and hollering

savagely. The flashlight connected with a *thunk* and the man crumpled to the floor with a groan.

"That'll teach you young punks. Nobody breaks in on my friend's property," Jeb said, pointing a victorious finger at the crumpled, groaning form.

"Jeb?! What in tarnation are you doing?! You forget how to use a doorbell you old cuss!" muttered Huey from his crumpled position on the floor. A hand moved his old mesh trucker's cap to rub the bump on his head.

"Huey?" Jeb blinked in puzzlement. "What are you doin' on the floor?"

"You hit me you nitwit! You'd be on the floor too if I'd hit you!" Huey grumbled as he stumbled to his feet.

Jeb helped him over to the couch. "What were you doin' sneakin' in here anyway?" Huey asked.

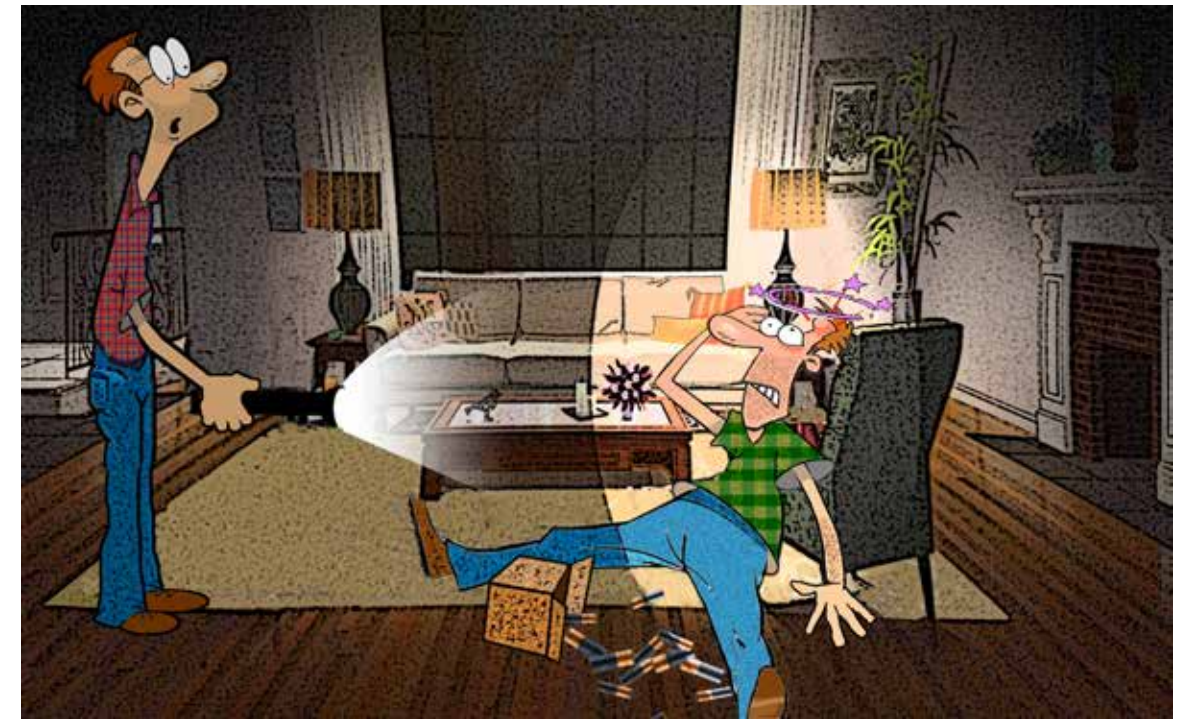
"I seen all your lights off and someone was inside in the dark. I thought it was one of them punks breakin' in. Gee whiz Huey, I'm sorry about your head. What were you doin' in the dark anyhow?"

Huey rubbed his head grumbling. "I had an idea..."

Jeb rolled his eyes. Huey's ideas usually didn't pan out, as evidenced by the current bump on his head. Sensing Jeb's trepidation Huey scowled. "Hey now! This is a good one! That's what I needed your flashlight for."

"Why don't you just turn the lights on like everybody else?" Jeb asked handing over the flashlight.

"Because! I figured it out. See, I done the math. I figure my electric bill's been gettin' too high lately. I thought, Huey, how can ya get yer bill lower? just like you're always tellin' me. Frugal Huey! That's me." He nodded; face beaming with pride as he flicked on Jeb's flashlight.



Jeb crossed his arms, waiting for Huey to continue.

Huey needed no coaxing. "I went around the house and unplugged everything but the fridge an' turned off every light. I bought a fresh supply of batteries and borrowed your flashlight! Way I figure it, I'll cut my electric bill by 90 percent Now, you can't tell me that ain't a good idea." He said sticking a triumphant finger in the air.

Jeb sighed and shook his head. "Huey, how much was your electric bill?"

"\$135 give or take. That's if I shut the TV off when I go to bed."

"And you think leaving the lights off all the time will cut it down to \$30?"

"Well, yeah."

"So you think, by using batteries instead of the electric company, you're saving a hundred bucks a month?"

"Hundred five." Huey corrected narrowing his eyes.

"Uh huh, and how much is a package of batteries?"

"\$21"

"How long does that package last?"

"About a week."

"So, seven days?"

"More like five. What's your point?"

"Well how many days is in a month?"

"Thirty or thirty one, why you asking me this?"

Jeb sighed and slowly shook his head. "Huey, that's five packages of batteries a month, and that's if you use 'em sparingly. How much do five packages of batteries cost?"

Huey thought for am minute, "\$136?"

Jeb stood before Huey with his arms crossed waiting. It took a

Huey a minute before his eyes widened and he smacked himself in the forehead. "Awe heck." He muttered. Jeb chuckled and patted his old friend on the shoulder.

"Go turn your lights on Huey."

Huey stood up and chuckled shakin' his head. "Alright, alright. Thanks for commin' over." He said and gave Jeb a smack on the outside of his shoulder.

"Be seein' ya Huey," Jeb said with a chuckle and turned for the door. Jeb just got the door open and stepped outside when he heard a loud crash and then a thud mixed in with an "OOF!"

Jeb turned to run back inside but stopped when he heard Huey call out, "I'm alright! I'm alllllright! Just forgot I moved coffee table!"

"See ya later Huey," Jeb chuckled, closing the door and headed home.



How's That Work? - Microinverters

Microinverters

by Tim Biebel, Vice President, Prudent Living Inc.

If you have a question or set of questions about renewable energy that you would like to see answered in this column, please send it to: dave@prudentliving.com.

Every year when I dig out the Christmas lights I wonder how many of them are going to work and how long it will take me to find the one light that doesn't, so I can replace that one light in order to get the entire strand to light up. That is frustrating to say the least, but fortunately a new strand of lights only costs a couple dollars and my frustrations are relieved, except for the feeling of waste when I throw away a strand of lights that mostly works.



Microinverters Mounted to Racks Beneath Solar PV Panels

What does this have to do with photo-voltaic energy (PV)? Typically, PV systems are installed with a "string" inverter which inverts electricity from direct current (DC) to alternating current (AC) for multiple solar modules at once. However, just like a set of Christmas lights is affected when one light goes out, so is a string of modules affected when there is a problem with only one of them.

The most common cause for decreased production is shading. The Black River Produce solar project in Springfield, Vermont, had a lot of roof space but also had some small shading problems across the roof. This posed a problem when designing the system to use string inverters because we would have had to plan around valuable roof space that had shading for only a couple hours a day. The solution? Microinverters. Microinverters invert electricity for one module at a time, which provides many advantages.



One Module Microinverter

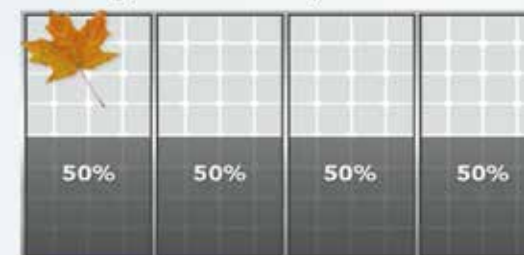
First, shading no longer reduces the output of multiple modules at once. If there is shading on one PV module connected with a string inverter it will reduce the output of all the modules connected together. With a microinverter installed, only the output of the panel that has shading on it will be reduced. This is a big advantage on this particular roof because of the different roof elevations and equipment that we have had to work around.

Second, the inverters come with a 25-year warranty. They are completely enclosed and have no moving parts. That's pretty impressive if you ask me!

Enphase Energy System



String Inverter System



Microinverter vs. String Inverter

Third, and the coolest feature of all, is that since there is an inverter for each PV module, every single module can be monitored! The monitoring package provides a map of the array that shows the output of each module in five minute increments, the past seven days, and the entire history. You can visually see production increase and decrease as the sun comes up, clouds pass over, or even when equipment is shaded.

This detailed level of monitoring will decrease the amount of time the system is down for maintenance. If service is required on a system that is using string inverters, all panels connected to a particular inverter have to be shut down in order to service it. On a small residential system that is not really a big deal, but on a large commercial system, hundreds of panels (or more) might have to be "turned off" on a sunny day to complete service.



Enphase Enlighten Monitoring

With the monitoring capabilities of the microinverters we will be able to pinpoint the exact module or inverter in a field of 1,490 modules that needs servicing. Not only does that save time for the service technician, it is a huge savings for the customer because only one PV module will need to be disconnected for service, not hundreds, and the rest can keep on working while the one needing service is repaired.

Besides the fact that the precise monitoring capabilities are fascinating and will be fun to watch, they also add a lot of value to a PV system. There will be less down time, increased production, quick reporting of problems, and a long warranty. For me, this all adds up to an impressive system that is definitely on the cutting edge of PV technology.

Tim Biebel resides in Vermont. He has grown up in the construction industry and holds multiple certifications in the field of energy efficiency and green technology. He loves to share what he has learned with others.

On the Home Front

A Year 'On the Home Front'

By Nancy Wolff

In August I celebrated my first year with Prudent Living. It's been quite an exciting year being involved with a company that ended the year by installing the largest solar install in the state of Vermont. Where do I fit in you may ask? I cover the other end of the spectrum writing about Prudent Living *On The Home Front*. It was my desire to write about ways you could live a more prudent life by sharing frugal tips, writing about my garden, talking about a prudent pantry and what that involves, and of course sharing delicious recipes. I am actually sharing a lifestyle that our family has been living for a long time.

My first post was published September 19, 2011. I started off with a very small following, probably my family and a few friends. In a little over a year I now have over 1,600 subscribers! There were 40,000 impressions and 8,600 unique page views last month alone. Since October 18, 2011, I have posted four times a week every week with the exception of the week of super storm Sandy when I was stuck in Connecticut without power or Internet!

Writing a blog is so much more than the actual posting of a blog. Think of an iceberg, what you actually see. The tip of the iceberg is the actual blog post. It's what you see as my reader; four posts a week. What's below the surface or what you don't see is all that goes into writing a blog. Correspondence is very time consuming. There are e-mails to answer, comments on the blogs to respond to, connecting to other blogs in various ways, researching what you're going to write about and making or cooking to create the information for the blog. In addition, there is taking photographs, editing the photographs, and then actually crafting the blog post so that it

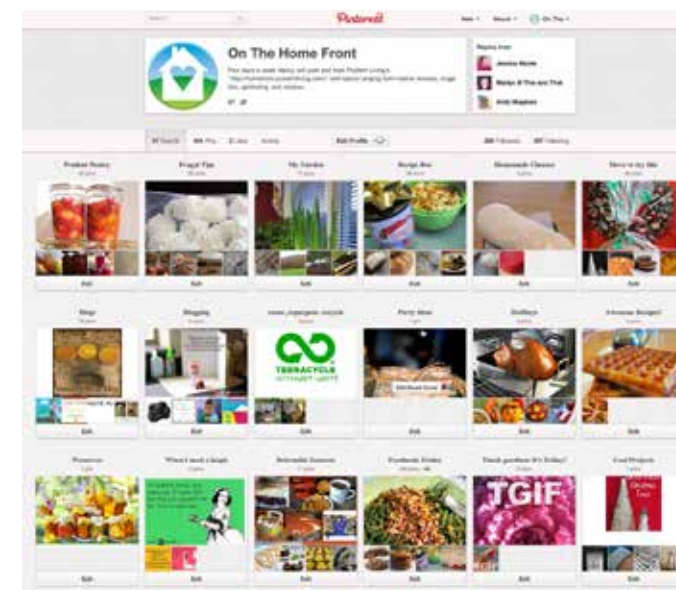
Blog Post Creation is Like Looking at an Iceberg

What You See

A Blog Post

What You Don't See

Writing
Answering E-mails
Replying to Comments
Connecting to Other Blogs
Research
Creating Content
Cooking, Making, Building
Photographing & Photo Editing
Planning & Scheduling
Crafting the Blog Post
And Blog-related Social Media!



is appealing and will create interest. While the actual posting only takes minutes, the behind the scenes work can be fifteen to twenty hours a week. Another 20 percent of our time is spent on social media such as Facebook, Twitter, and Pinterest. Social Media is a very powerful tool and these social outlets are perfect ways to grow your blog.

My Facebook page was launched May 21, 2012 and has taken off with almost 3,000 followers! Facebook is a wonderful way to interact with readers; I can let them know what posts are live, inform them of contests we may be running, and just let them know how much I appreciate them. I also have an *On The Home Front* Pinterest page and a Twitter account.

When I started *On The Home Front* I had no idea about the time commitment involved. Blogging is all about connecting with people. I have met so many interesting people online that I would never have known otherwise. It's also a way for me to be creative, to share my life, and my way of living. The blogging community is a wonderful, supportive community. I've been invited to several blogging groups, which have proven to be a great source of information. Everyone seems to be working together to support and encourage each other and wish each other great success.

You never know which post will create the most interest. One of my favorite posts, which got so much traffic, is one I did last year on what to do with left over candy canes. After doing some research I found that there are all sorts of things you can do with left over candy canes from making an ice cream sauce to crushing them to use as a cake topping. I've had other posts where the picture I took was just perfect and that alone seemed to create a lot of traffic.

I try to stay at least a week ahead on my blog writing. I've had several instances where circumstances have required me to be out of state. I was very thankful that I had posts all written and ready to go. This next year will be an exciting one as I continue to write *On The Home Front*. I have many more ideas I want to share with my readers and look forward to developing more bloggy friendships.



Nancy Wolff lives in Vermont. She has been gardening for the last 30 years. She has completed both the Master Gardener and the Master Composter programs offered through the state extension bureaus. She is interested in providing delicious, nutritious, chemical-free food for her family. She gardens organically, and what food is not consumed immediately she tries to preserve to be enjoyed later. She loves walking into her pantry and seeing shelves filled with the garden's bounty!

Join *On the Home Front* blog postings Tuesdays through Fridays for more from Nancy.
homefront.prudentliving.com

On the Home Front

Handcraft Your Own Shampoos, Conditioners, and Herbal Rinses

by Lisa Barthuly

Herbal Shampoo

This is a nice shampoo, that really works well. We find we don't even need a rinse or conditioner after using.

Here is what you'll need:

- 8 oz or so of Distilled Water
- 1 TB of Dried Rosemary and 1/2 C of Dried Rose Petals
- *Optional 1 TB of Dried Sage – especially nice for dark hair and/ or scalp issues.
- 3 TBs Liquid Castile Soap
- 3 TBs Aloe Vera Gel
- 1/4 tsp of Jojoba Oil
- 20 to 30 Drops of Pure Rosemary Essential Oil

This WORKS great, no toxins and SUPER SIMPLE to make. I pick up all my ingredients on the cheap (and great quality) at Azure Standard or over at Mountain Rose Herbs and whip up my own, E A S Y.

Start out with a clean quart jar. Boil the water, dump the dried herbs in the jar, and pour the boiling water over the top. Put a lid on it and let it sit at least an hour, or even overnight.

Next you'll strain the herbs out (I use paper coffee filters, but you could also use cheesecloth).

Once strained, I dump it into an old shampoo bottle and add my remaining ingredients. A small funnel is really handy at this step; then put the lid on, shake up and it's done.

You have just made your own homemade shampoo – and we absolutely LOVE this recipe. Now, you CAN use regular water in this recipe, if you don't have distilled on hand – it just has a bit shorter shelf life. However, that is a non-issue more often than not, as this will last at least 6 months. Shake it up well each time you use it and I use about a quarter to fifty cent piece sized amount in my cupped hand in the shower (it is a lot more 'liquid-y' than the thick stuff you find at the store) and it works great – AND no conditioner needed, either.



What I really love is the ability to personalize this recipe. You can (as noted above) add sage – or a slew of other herbs to change the properties and results you get. Here are a few ideas:

Have blonde hair and want to highlight that? Add chamomile or calendula. Dark hair lends itself to sage, or even nettle. If you have oily hair, go a bit less on the oils. If dandruff is a problem substitute tea tree instead of rosemary essential oil. Enjoy lavender essential oil and lavender buds?

Add it in, just stick with the basic formula of dry matter and oils listed in the recipe... the options are endless and the price is nice, too. Make it extra inexpensive and dry your own organically grown lavender and rose petals from your garden.

Simply Refreshing Homemade Shampoo

I love peppermint, it wakes me up and is so invigorating. Whip up a batch of this homemade shampoo and start your mornings off right:

- 1/4 C Distilled Water (regular filtered water is fine – just not as long a 'shelf life')
- 1/4 C Liquid Castile Soap, Unscented (I use Dr. Bronner's "Baby Mild" version)
- 2 tsp Jojoba Oil
- 1/8 tsp Peppermint Essential Oil
- 1/8 tsp (I use a little less) Tea Tree Essential Oil

Mix all ingredients together in an old shampoo bottle or other bottle, then add another 1/4 C distilled water and you're set – homemade shampoo in seconds, with no toxins.

Natural Deep Conditioner

- 1 Avocado (mashed)
 - 1 TB Olive Oil
- Mix avocado and oil together thoroughly, and massage mixture into hair and scalp. Put hair up in a plastic shower cap or wrap with plastic wrap for about 15 minutes and rinse well, clean/shampoo hair as normal. This makes a wonderful deep conditioner.



Lisa Barthuly owns and operates www.HomesteadOriginals.com with her husband and children! Lisa lives in the mountains of the rural western U.S., where she enjoys a simple, home-centered life, built on God's foundations - studying Scripture, scratch baking & cooking, canning, making soap, candles, gardening organically, raising dairy goats & chickens. She's the family herbalist and loves a round of competitive target practice! Visit her blog at:

HomesteadOriginals.com/blog

On the Home Front *(continued)*

For a ‘Salon Conditioning Treatment’ try this homemade recipe:

Mix 3 eggs, 2 TBs olive oil, 1 tsp vinegar, and apply to your hair. Cover with a towel or one of those cheapie plastic shower caps for a half hour. Rinse in the shower, with 1 C apple cider vinegar and VOILA . . . clean, conditioned, shiny hair.

Homemade Vinegar Hair Rinses

Vinegar beauty treatments? Absolutely! Vinegar makes the most fantastic hair rinse. We truly over wash/treat our hair with all the daily shampooing, conditioning, hair drying, hair sprays, gels, colorants, etc. Apple cider vinegar tends to work best on the hair and a cup of it in the shower rinsed through our hair is a perfect, simple clean. You can also make up herbal rinses with vinegar to treat oily hair, dandruff, dry hair – even add dark or light ‘highlights’ naturally.

Vinegar rinses are great for itchy scalp, dull hair and they help to restore the natural balance and acid in the scalp, not to mention that healthy shine. If the vinegar smell is not appealing to you (actually, after you rinse well, it’s not a strong smell at all) you can add a few drops of your favorite essential oil, too.

I start with a clean, quart-sized canning jar and fill 1/2 to 3/4 full of apple cider vinegar. From there, depending on what type of rinse I want to make, I add my herbs:

For Dandruff

1/4 C Chamomile
1/2 C Sage Leaf
1/4 C Rosemary
1/4 C Thyme

For Oily Hair

1/2 C Rosemary Leaf
1/2 C Yarrow Leaf

For Dry Hair

1/2 C Calendula Flower
1/2 C Nettle Leaf
1/4 C Marshmallow Root

For Golden Highlights

1/2 C Calendula Flower
1/2 C Chamomile

For Dark Highlights

1/2 C Sage Leaf
1/4 C Comfrey Leaf
1/2 C Black Walnut Hull (chopped)



Once my herbs are in, I put my lid/ring on firmly, shake it up and set in a sunny windowsill for a week or two. (This is known as “solar infusion.”) Give it a shake once a day or so. When I am ready to use it, I strain out the herbs (by using another canning jar, coffee filter, or cheesecloth and ring), put it into a plastic container, place in the shower, and it’s ready to use. I always have a batch of one of these mixtures brewing on a windowsill somewhere in the house.

This article is excerpted from *A Simply Homemade Clean* by Lisa Barthuly (Healthy Life Press: Orlando, FL, 2012), 83-87. For information on how to purchase a printed or eBook copy, see: www.healthylifepress.com, or for an autographed copy, see: www.homesteadoriginals.com.



Waiting for Spring. Photo by Steve Giroux

Rocky Bound Pond Redo

From Heat Hog to Energy Star

When Bob and Dale Cunningham bought the original cottage on the west shore of Rocky Bound Pond in Croydon, NH, about ten years ago, it was just a camp – a place to open up on Memorial Day and to batten down again on Labor Day. While rustic has its charm, it also has its limits, especially when the thermometer drops to minus 20 F, and nothing's moving but the 40 mile per hour wind whistling across the ice and through every crack and cranny in the walls, and even the floor, which had only a crawl space under it. In this case, “rustic” also included an electric toilet – details skipped here except to say that the constant draft was helpful in dissipating the odor.

With retirement in the not-too-distant future, the Cunninghams took inventory. In the winters, they lived in an older home a few miles from the camp, but when they thought hard about where they really liked to be, the “camp” won, hands down. So the question became whether the camp could be remodeled to accommodate year-round living. They decided to consult a long-time acquaintance, Paul Biebel, because they knew his company was very familiar with both new construction and “retros,” and also because of his connection with Prudent Living Inc., which could provide expert advice on the integration of renewable energy into their long-term planning.

After an initial walk-through, Biebel explained that his company could certainly tighten up the old cottage through the use of a variety of insulation methods, and that the use of renewable energy heat sources could cut their ongoing heating costs. However, a much better long-term solution, in view of their plan to relocate there permanently, would be to replace the old structure with a whole new one, in which case new insulation technologies and renewable energy sources could be built right into what might become a two-story finished house, with an initially unfinished walk-out basement – a significant increase in floor space in a much more livable package.

Following a nostalgic last look at a place that had provided them so much pleasure and fun through the years, in August 2011, the Cunninghams watched the old building come down, to be replaced by a hole for a new foundation which, by



regulation, could not be larger than the “impervious” footprint that had been in use previously. They counted everything allowable to come up with the equivalent square footage total.

The new house went up quite quickly, by comparison, but not fast enough for Bob and Dale, who at that point had rented a neighboring “rustic” cabin so they could keep tabs on the progress, which they did daily. “The crew probably got sick of hearing us ask, ‘Is it done yet?’” Bob recalled. “But they were always nice about it, and being right there allowed us to be more involved in crucial decisions we are glad were made.”

“One of those,” Dale said, “was my request of Paul to add a French porch off the bedroom upstairs, which has become one of our favorite places to sit with a cup of coffee and watch the sun come up across the pond. We’ve also enjoyed seeing wildlife that we never saw before, like the ducks that come through in the fall, and flowers on some of the trees in the early spring. We never saw those before. It’s just a quiet, restful place to be. Seems like the view changes every day, but I can’t think of any time when it’s not beautiful in its own special way.”

Along the way, there were many challenges, including how to build the house in the midst of certain trees that the Cunninghams wanted to keep. “We groomed down a whole side of the hemlock,” Bob said, “so we could keep it as a shield between us and the pond even in winter. And there’s a big oak tree out here that the guys were rubbing their backs against while they were putting on the siding. We really appreciated the extra effort!”

“The whole thing was done in a very tight space,” Dale added. “And we’re thankful to have such understanding and helpful neighbors. We had big delivery trucks coming in here, and a well-drilling rig. It was all pretty crazy while the place was being built.

Perhaps the most significant challenge was communications with the electric power company, which required the already installed underground service to be moved in the middle of winter in frozen ground. The power company had to be educated about the power load required by the geothermal heating and cooling system that was the best renewable energy technology for the setting.

“They thought that geo thermal was going to take three to five wells, like in that past,” Bob said, “with pumps in every well and other equipment so the draw would be more than the present lines could handle. But when the engineer showed them that there would only be one well and pump, and that the whole set-up would not use more electricity than a stove, they relented. And the great thing about it,” Bob added, “was that we were going to



Rocky Bound Pond Redo

(continued)



have to put in a well anyway, so we just went a bit deeper for the geo thermal than we might have gone otherwise.” Then he said, with a laugh, “I had to trust that the technology would actually work, because, you know, it’s hard to figure out how you can heat a house to seventy degrees using heat from water that is only maybe fifty-eight degrees.”



Dale said, “I had read up on the whole idea, with Paul’s help, and it was pretty clear, even if it was a bit of a mystery, that the engineering projection was going to achieve my goal – living in a house that I didn’t have to buy oil for. More than anything, I was sick of having to plan all year about when to buy oil for the winter, you know, would it be lower or higher later, and so forth. With our new house, we have no oil tank at all, just even, steady heat. The air flows so gently that you can hardly tell

when the heat is on. We do have propane for hot water and a back-up stove in the corner, but that’s just for looks so far. In fact, our propane use for January, when we moved in, to June this year, was seven gallons. Otherwise, electricity runs the pumps, including the aerator in the septic area, so that’s our main ongoing expense.”



One thing that will put money back into the Cunninghams’ pocket is their new home’s compliance with the State of New Hampshire’s Energy Star Homes Program. Biebel explains, “We had to comply with their strict performance criteria for the shell of the house. The State of NH sent their own inspector to the site, with his own testing equipment. He used both a blower door and an infrared camera. When he finished testing, he said that we far exceeded their standard requirements and that he had not seen a house test



out as tight as this one. I explained to him that this is partly because we installed so much foam insulation both in between the studs as well as an additional two inches on the entire exterior. But in addition



to that, we air sealed all the vertical penetrations between floors all the way to the attic, eliminating what is scientifically referred to as ‘stack effect.’ Stack effect is the movement of air between walls and partitions and floor systems wherever there is a drilled hole or open shaft. It is one of the primary causes of heat loss and unwanted air movement inside of houses, and it usually acts like an internal chimney that sucks air from basements all the way up and into attics where moisture condenses and wreaks havoc with wood frames.”



He added, “Another thing we do, that is not required by Energy Star, is that as we frame up the house and begin installing studs



and plywood on the exterior walls, we caulk every joint where two pieces of wood come together. That’s a lot of joints. We also caulk all the exterior plywood joints from the roof to the foundation. Inside the house, we caulk every place where a stud or wall plate rests against plywood or against another stud or wall plate. When we install windows and doors, we set them into a bead of continuous caulk and then, after they are fastened into place, we install foam around the perimeter so that there is an air tight installation. Once we finish air sealing, the only way outside air can get into a house like this is for it to come in through an open window or door. Finally, when the house is finished, and before the owner moves in, we perform a pressure test on the house to look for any unwanted leakage. This will show up on our meter and also when we walk around with a ‘smoker’ that we use to check for drafts in all the usual places. After all the testing is done, we make sure that the air exchanger is sized properly and that the indoor air quality of the home is perfect.”



“That kind of attention to detail is the reason we are 100 percent happy with our new home,” Bob commented, with Dale nodding in agreement. “If we had it to do all over again, we would do it the exact same way, and it’s not often you hear somebody say that of their new home. And, as far as the renewable energy factors are involved, we would do those again, too, and we’ll be examining the solar electric options, too. For people who are considering something like this, we’d say don’t be shy; the only thing to lose is time. Some people look at an array of solar panels and think they’re ugly, but I think they’re beautiful. I see windmills on a hilltop and think they’re wonderful. That’s free energy. Why would you not want that?”



New Year's Resolution: Eat More Fish

by Bobbie Dill, RN

When we were growing up, we were told to eat our fish, because our moms had heard that fish is “brain food”. And now, many years later, a mountain of gold standard scientific evidence has found that eating fish can enhance brain health. What our moms didn’t know, however, was that some fish can retain heavy metals, such as mercury, which are toxic to the brain. In general, the higher up the food chain the fish, the more likely it is to be contaminated by mercury, since the metal accumulates over time.

Feeding your brain well may involve learning to like fish, with wild caught oily cold water fish being superior because of their ability to deliver Omega-3 fatty acids, which the human body needs but cannot produce on its own. Omega-3s are important throughout life, helping to maintain brain function, and may have a significant role in protecting your brain from aging. Omega-3s can be obtained from a variety of plant sources, but the most common source is fish, including wild salmon, high mountain trout, mackerel, herring, sardines, and anchovies. If you simply don’t care for fish, but want some of the benefits, a variety of fish oils can be purchased locally or via the Internet, but be sure that whatever you ingest is certified free of all toxins. While fish oils do not provide the protein that actually eating fish provides, this option is still healthier than ignoring your body’s needs for Omega-3s and Vitamin D.

Some doctors recommend eating a half-pound of fish every week,¹ this despite the relatively disturbing 2009 report issued by the U.S. government which showed that fish in all of the nearly 300 streams sampled over a seven-year period contained mercury to some degree, although only about 25 percent had mercury levels exceeding what the EPA considers safe for people consuming average amounts of fish.

In addition, some fish and shellfish are contaminated with polychlorinated biphenyls or PCBs. PCBs and other contaminants concentrate in the fat of fish just underneath the skin. Other contaminants found in some fish include dioxins and pesticides. If you catch your own fish to eat you should check on your local fish consumption advisory at the EPA web site: www.epa.gov/waterscience/fish/states.

Fish that tend to have higher levels of mercury include shark, swordfish, king mackerel, and tilefish.² Fish typically low in mercury include shrimp, canned light tuna, wild trout, salmon, and catfish. You can reduce your exposure to possible contaminants by removing the skin and fat before you cook fish. For example, you can bake or broil the fish on a rack so that the fat containing the contaminants drips away from the fish. The Environmental Defense Fund’s web site (www.edf.org/seafood) has selector

guides for seafood and sushi. The guides help you select a variety of fish that are good in nutrition and low in contaminants.

Studies show that aging people in some countries that consume larger amounts of fish had reduced rates of dementia and reduced losses of mental functioning. And in other countries where people eat more fish, explains the Wellness Letter from UC Berkeley, the rates of depression are lower.³ So the bottom line is to eat the right kind of fish, one or two meals per week, because the potential health benefits outweigh the potential negatives.

In case you wondered, there is a way to tell if the fish on your plate contains heavy metal. Lean over real close, with one ear about an inch from the fish, and listen. If you hear noise pretending to be music, then don’t eat it. It’s a heavy metal fish.

1. “Frequently Asked Questions About PCBs Found in Trout” <http://www.fish.state.pa.us/qpcb2001.htm>.
2. “What You Need to Know About Mercury in Fish and Shellfish” (US EPA: EPA-823-F-04-009).
3. “Is Fish Really Brain Food?” <http://www.wellnessletter.com/html/wl/2001/wlFeatured1001.html>.



Bobbie Dill, RN, has served as a nurse in various specialties throughout her career with an emphasis on women’s health, in which she holds a certification. She enjoyed many years of working alongside her husband in his medical practice, which was among one of the first to establish a truly holistic medical emphasis, encompassing the medical, emotional, spiritual, and relational needs of patients. Bobbie enjoys writing and has co-authored with her husband, Jim, nineteen journal articles and three books, including this one. She now resides in Virginia where she enjoys time with her family, including her three granddaughters, as well as serving in her church and community. This article is excerpted from the book: *Your Mind at Its Best* by David B. Biebel, DMin; James E. Dill, MD; and Bobbie Dill, RN. Available from www.healthylifeexpress.com.



This colorful native brook trout caught in a high mountain Colorado stream is tasty and healthy.

Save for the Future

By Mary Hunt

Editor's note: Some New Year's resolutions survive until March, if that long. But here's one that will last all year, yielding financial and emotional benefits for the long term.

The antidote for financial fear is money in the bank. It changes everything because you lose that broke feeling. Money in the bank changes your outlook because it changes your attitude. A nice stash of cash, tucked away in a high-yield savings or money market account returns big doses of peace of mind.

Money in the bank creates margin. Margin helps you to think more clearly and to make decisions that are not driven by fear. As your savings grow, so do your options. And with options comes hope for the future.

I have come to the conclusion that people are fearful in direct proportion to how prepared they are to go through a season of financial hardship. Those who have no money in the bank and just enough food in the house to get through the week feel as though they're sitting on a time bomb. They're terrified and worried sick because instead of saving money, they're racking up debt, which just makes things all the more terrifying.

Saving money strategically and with purpose does more than accumulate money in a safe place. It develops character traits of self-reliance and financial maturity. And patience. There was a time when people had no choice but to prepare for their own emergencies. They had no safety net, also known as a credit card The world changed in 1950 when Frank McNamara invented the first multi-use credit card, Diners Club Charge Card. The credit card changed the world in terms of self-reliance and the advancement of personal entitlement. But more than that, it blinded us to what should be instinctual—the need to save for the future as a matter of survival.

Wherever you decide to build your emergency fund—I recommend online savings accounts—the money needs to be safe, available, and earning the highest rate of interest available. Perhaps the best way to build this fund is by making automatic deposits into it, with a goal of saving at least 10 percent of pay each month, at whatever is the best timing for you to do so. Your goal is that this emergency fund will contain at least enough money to pay all your bills and monthly expenses for six months without a paycheck.

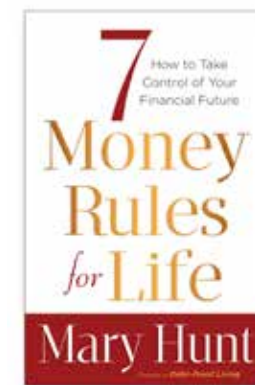


If you currently have no savings to speak of, I wouldn't be surprised to hear you say, "I can't come up with that kind of money." But you really don't have a choice when it comes to preparing for the future, so the key to achieving the goal is to break it into bite-sized objectives. Start by figuring out how much it would cost you to keep your life together for two weeks without a paycheck. Make that your first target. Then aim for a month, two months, and so on.

No matter your situation—even if you are up to your eyeballs in credit card debt—you must have an emergency fund. Every household needs one. It creates margin and allows you to step away from the edge.

Here are some ideas for supplementing your effort to establish your emergency fund:

- Store all change from your pockets in a jar at the end of each day.
- Daily, add all the \$1.00 bills you have in your purse or wallet to the same jar.
- Eat at home instead of dining out, and tip yourself by adding a few bucks to that jar.
- When you get cash back, refunds (including tax refunds), or rebates, add those to the fund.
- Sell things you don't need or want any longer, and deposit the cash.
- Choose to view your emergency fund as a type of insurance policy, to be guarded and not used except for true emergencies.



Adapted from *7 Money Rules for Life* by Mary Hunt (Grand Rapids, MI: Revell, 2012), 63-79. Used by permission. All rights reserved by Revell, a division of Baker Publishing Group. Material is not to be reproduced, scanned, copied, or distributed in any printed or electronic form without written permission from Baker Publishing Group. See: <http://www.bakerpublishinggroup.com>.

Make a Treasure Hunt for Your Kids (or Your Neighbor's Kids)¹

by Monte Swan

Everyone loves a treasure hunt, with its mystery and intrigue, sometimes romance and conflict between good and evil, and clues that must be deciphered in the hope of finding that treasure, whatever it may be.

It's not hard to create a treasure hunt, regardless of where you live. If you do a Google search with the phrase "how to create a treasure hunt," you'll find over 200,000 entries, enough ideas for a lifetime of making life fun for a veritable gaggle of little friends—and also for yourself.



Monte Swan is a scientist, musician, lecturer, and author. He is Professor of Geology at Colorado Christian University. As cofounder and vice-president of MagmaChem, a natural resource research and exploration company, he has helped develop a new model of the earth. Living in the heart of the Rocky Mountains, he pursues his passions for archery and mountaineering, geology and philosophy.

Monte Swan created treasure hunts for his children as they were growing up in Colorado. The hunt might start with some kind of discovery the kids had already made in the nearby woods. For example, one day when Monte's son, Travis, was about ten, the boy found a very old axe in the woods and brought it home to show his father. "I was building a fort next to the ledge when I found this," Travis explained. "You said that Jesse James used to hang out around here. Do you think this might have been his axe, Papa? Do you?"

The family was actually living on part of an old Colorado ranch located in an area that had been one of Jesse James's old haunts. "At that moment, an idea crystallized in my mind," Monte wrote, "to design a treasure hunt and keep this excitement of discovery and imagination alive as long as possible while at the same time teaching Travis and our daughter Heather a little history, orienteering, biology, logic, reading, and research. I shook my head slowly, pondering the possibilities. 'I don't know, Travis,' I replied. 'But it sure looks like it's old enough to have been here when he was alive.'"

Following that assertion, Monte invested his next three days in secretly placing leather map fragments, antique bottles, artifacts, and a sealed wooden box containing pre-1900 coins wrapped in an old canvas bag in various places near the spot where the axe had been found. He chipped clues into cliff faces and then glued moss back on to give the clues the appearance of age. When he was done, an old steel trap at the spring hole and a bottle carefully placed under the roots of a tree were among the clues and along the trail to the treasure.

As you can imagine, the kids had a wonderful time unraveling the mystery, learning a lot about teamwork as they went. But their father also experienced an intense sense of anticipation in the process of creating the hunt and then, as he followed at a distance, observing his children and two of their friends finding the clues and, ultimately, the treasure. He even let them believe for several days that they had found the treasure of Jesse James.

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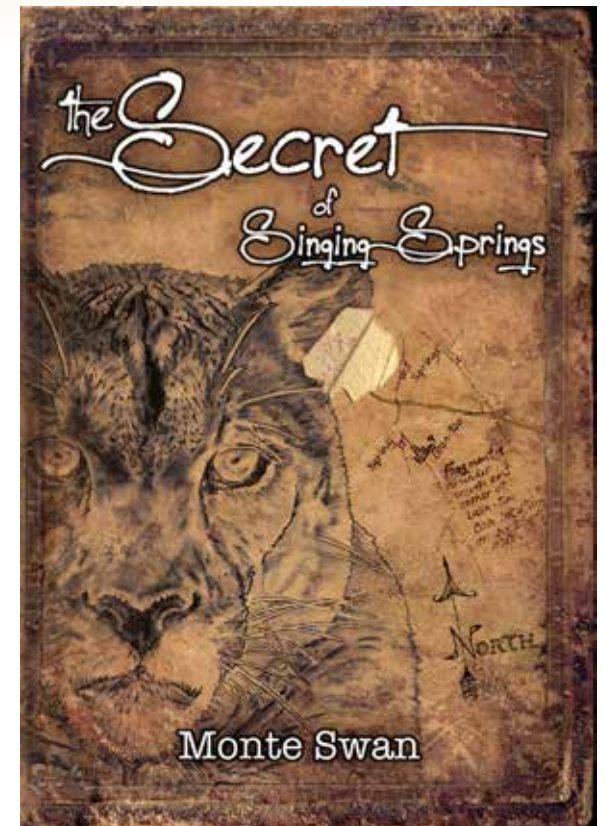


"They had a wonder-filled day," Monte wrote, "and mine was just plain wonder-full."

Of course, not everyone has access to history, legends, or artifacts like these, but you can discover some local lore with a little mystery (or create your own through storytelling), and then develop a hunt that will test the kids but not frustrate them too much.

"Success depends on the combination of just enough suspense and difficulty to keep them wondering," Monte concluded, "plus an increasing set of rewards that will keep them motivated to reach the final goal—the treasure."

If or when you do this, remember that the real treasure is the making of a memory, the shared joy, the fun, the laughter—relational values that cannot be bought at any price. And keep in mind that this experience can be spread over several days or even a week as you work out the "hunt" piece by piece, resulting in a whole bunch of family fun days, all from one source.



1. This story is found in the book, *Romancing Your Child's Heart*, by Monte Swan (Colorado Springs: Waterbrook, 2002), and also in the forthcoming fictionalized account of the experience, *The Secret of Singing Springs*, by Monte Swan, (Orlando, FL: Healthy Life Press, 2013).

Winter Photo Contest

Congratulations to John Fielding and Catherine Bryant, our winners!

Prudent Living is a community-oriented company, so we thought it natural to ask you to contribute your photos for this magazine. We were pleased with the entries for this issue; choosing a winner was difficult. Thank you to all who submitted entries.

We have decided to continue this contest in the spring 2013 issue. So be on the lookout for some great spring-related images! You can submit photos starting today, December 21st. The winning photo two-page spreads on pages 10-11 and 12-13 serve as good guidelines. Submit your entries to manager@prudentliving.com. Please include a short caption about your photo.

We look forward to more great creative work from the members of our community in the future! Here are some of the runners up for this issue's contest. Thanks again to our entrants!



Photo: Yvette Cochran



Photo: Tracy Lynn Grace



Photo: Allison Youngren



Photo: Jessica Keating



Unexpected winter in Blockley, England, Jess, Matt and Alma brave the weather. Photo by Catherine Bryant

How Do You Want Your Change?

By David B. Biebel, DMin

As you've noticed, a number of our articles in this issue look back and look ahead, since year's end is a period when many people make resolutions. Some people give their resolutions a lot of thought; others, not so much. Resolutions can run from things that we want to achieve in 2013 that would be superhuman to things that tend to be within easier reach. Many resolutions are abandoned within a few months.

For example, suppose the needle on your bathroom scale hovers between overweight and obese most of the time, and your resolution is to lose twenty-nine pounds by the Ides of March. While the goal is certainly good, achieving it in such a short time is highly unlikely, and the end could be heavier than the beginning. By contrast, if you already have \$950 in your rainy day savings account, and your goal is to pass \$1,000 by the Ides of March, the challenge is a lot less, as is the satisfaction if you achieve it. A more satisfying resolution might be to save up, in the next year, enough to improve the insulation in your home before next winter.

In terms of thinking and acting prudently, taking stock from time to time and setting goals that are sensible on an annual basis is a really good idea. Some people actually get away annually alone, or with their spouse, to reflect on their life's direction and to celebrate whatever success they've had since the last time they conducted this exercise. Planning ahead in this way allows for consideration of all areas of life, including physical, emotional, spiritual, and relational.

However you do this inventory, one question to ask is: How do I want my change? Must it be all at once, as quickly as possible, or are baby steps acceptable? Be really honest with yourself and ask an even larger question: Is the whole idea of amending how I think and act less desirable than continuing on the same path I'm on? This question is crucial because changing habits of thought or action is one of the most difficult things in life.

Not too long ago, a certain fellow we know fell deep into debt, using credit cards to keep paying the mortgage as expenses outpaced income, but when the value of the home got upside down and the bank insisted on raising the interest rate on the adjustable rate mortgage, the short sale of the home became more or less unavoidable. The problem then became how to handle approximately \$60,000 in consumer debt. Bankruptcy beckoned, but he and his wife decided to settle the accounts, one by one, starting with the smallest, and working toward the largest until it was all gone. "Slow and steady wins the race," as Aesop wrote about the race between the tortoise and the hare, proved true in this case. Yes, it took about four years, and some help from family, but how nice it was to not have to field those collection calls day-by-day anymore, and to have a lot more peace of mind as they start to rebuild, step-by-step.

How do I want my change? Must it be all at once, as quickly as possible, or are baby steps acceptable?

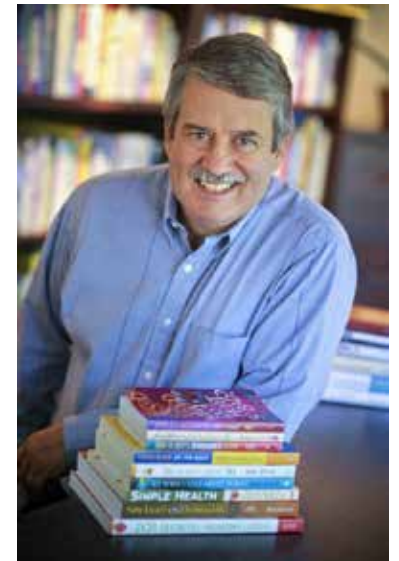
Most of what we present in this magazine, and most of what Prudent Living, Inc. focuses on has to do with change – change of thought that leads to a changed way of life. It should be clear to any serious observer of what has happened as a result of two natural disasters in the Northeast in the past two years, that it is unwise to count on anyone to help us in times of calamity. It is far more prudent to be prepared for the worst and thankful for the best, than to hope for the best and never consider the alternatives.

For many, this simple change in thinking would be a giant step toward exchanging presumption for prudence, and with it more independence, hope, and peace of mind. Make this your resolution, and if you do, welcome to a community of likeminded friends!

David Biebel

David B. Biebel, DMin
Editor in Chief

David Biebel is Managing Editor of Florida Hospital Publishing, in Orlando, Florida. He is the author or co-author of 19 books, a number of them related to health.



Josiah, Makennah, and Isaiah pose for the camera.

Photo by Allison Youngren



*Merry
Christmas!*

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