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EDITOR’S PAGE
OUR CONTRIBUTORS
LETTERS FROM READERS
LOCAL NOTES

Resilience
10 Resilience
12 What Is Resilience?
14 Herbal Plant Companions
16 8 Steps to a More Resilient Life
18 Resilience the Art of Keeping ON

HEALTH
20 CBD: Three Letters That Swept the Nation
24 Adaptogens from the Ground Up

Nature
28 The Impact of Organic

ENERGY
31 Buy Victory Panels

RECYCLING
32 3 Reasons Why Recycling is Good Business
35 Don’t Leave Your Butt on the Beach

Book Review
34 The Urban Farmer

TRANSPORTATION
36 10 Reasons Why You Should Switch to EV
37 CLASSIFIEDS
Resilience is a frequent topic of conversation these days, especially after a major catastrophe or when planning for some future disaster. The Cascadia subduction zone earthquake comes to mind for the latter. We talk about the need for resilience in our personal lives, in our organizations, in our businesses, and in our city, state, and federal governments. We talk a lot about resilience, which is a good thing, since history has proven the value of human resilience. However, there may be another side to resilience that is not discussed.

An op-ed piece by Parul Sehgal in the December 1, 2015 issue of the New York Times Magazine, opens with the myth of that ancient bird, the Phoenix. Its crashing, then its burning, and finally, its rising from its own ashes, gives us a lasting symbol of endurance.

The author states: “We have an ancient attraction to stories of resilience, but recently, the word itself has achieved a more prosaic popularity. Deriving from the Latin for “to jump again,” “resilience” has sprung into new life as a catchword in international development and Silicon Valley and among parenting pundits and TED-heads. Hundreds of books have been published on the topic this year, mostly with a focus on toughening up your investment portfolio or your toddler.”

She goes on to say, “But where “resilience” can suggest new avenues for civic infrastructure — admitting that disaster can’t always be diverted and shifting the focus to...”
survival strategies — it is indistinguishable from classic American bootstrap logic when it is applied to individuals, placing all the burden of success and failure on a person’s character. “It’s pretty much the same message that’s drummed into us by Aesop’s fables, Benjamin Franklin’s aphorisms, Christian denunciations of sloth and the 19th-century chant invented to make children do their homework: ‘If at first you don’t succeed, try, try again."

The social scientist Alfie Kohn argued in an op-ed article in The Washington Post “The more we focus on whether people have or lack persistence (or self-discipline more generally), the less likely we’ll be to question larger policies.”

Ms. Sehgal ends her op-ed piece with the question, “Why rise from the ashes without asking why you had to burn?”

Calling on personal resilience to overcome the hardships created by society’s failure to confront racism, hate, or bullying, is nothing short of an exercise in futility. Native and African Americans are well aware of our society’s discriminatory barriers that can cripple the aspirations of even the most rugged of individuals.

The rising suicide rate among students raises serious questions of “Why”? Whatever the cause, it’s obvious that the internally defeated student is overwhelmed by utter hopelessness. Do they lack personal resilience, or are there cultural forces / barriers (“larger policies”) at play.

And now, on our southern border, thousands of asylum seekers have arrived, only to be met with not just a physical wall, but a cultural wall of fear and hatred as well. These people possess resilience, but the walls win.

It’s long past time to question “larger policies”.

-- Gary Munkhoff
OUR CONTRIBUTORS

**Mike Dunton**
An entrepreneur, farmer, lifelong gardener, and seed saver interested in “old-timey” ways, historical agriculture and biodiversity preservation. From his ancestral farm in Liberal, Oregon, he focused all of these interests and founded the mission-driven Victory Seed Company in 1998 which works to locate, grow, document and preserve rare, threatened, heirloom seed varieties keeping them available to gardeners. For more info: www.VictorySeeds.

**Betty Shelley**
Betty Shelley is a Master Recycler (class #2), a former Metro Recycling Information Specialist, an Agent of Change, and the founder of Reduce Your Waste Project. Betty found Northwest Earth Institute in 1993 when it was founded in Portland. The NWEI discussion courses made her more aware of the choices we make as well as the consequences of those choices. Since 2006, Betty and her husband, Jon, have had just one 35-gallon can of garbage per year. The Shelleys offer the class “Less is More: Getting to One Can of Garbage a Year”. For more info: www.reduceyourwasteproject.com

**Ken Condliff**
Founder of Nut-Tritious Foods, a company dedicated to producing the most nutrient dense foods available to consumers. Based on Ken’s experience in high tech manufacturing and in new product innovation, he decided to bring foods, with more nutrient density, to the consumer. The concept was based on consumer preference for eating only healthy ingredients and eliminating the additives and ingredients that add little nutrition to food. Ken’s background and experience with product development goes back several decades, and started as a child, when he was re-inventing unique products and services. For more info: www.nut-tritiousfoods.com

**Joan Maiers**
Author, educator, editor, works with writers of all ages. Several months each year, she hosts the Peregrine Literary Series which features regional writers and musicians at a Lake Oswego, OR venue. Her work is published in various journals, anthologies and publications like this one, as well as in Calyx, Fireweed, Sojourners, Windfall, The Oregonian, Oregon English Journal, If I Had a Hammer, Blooming in the Shade, VoiceCatchers, and Switched-on Gutenberg. She is preparing Specific Gravity, her manuscript of poems for publication.

**Erin Hardwood & Eloyce O’Connor**
Erin and Eloyce are the herbal enthusiasts behind Garden Delights Herb Farm in Brush Prairie, WA. Since starting with parsley as a treat for a pet rabbit more than 20 years ago, they have grown, harvested and preserved a wide variety of herbs for culinary, medicinal, pet, personal and home care uses. Both started their careers as teachers, from elementary to college, and continue to share their passion and love of herbs with others through their herb classes both on and off the farm. They feel strongly that herbs can be easily incorporated into everyone’s lives, and they share inspiration and ideas on their blog at www.gardendelightsfarm.com

**J Lauren Norris**
J Lauren is the Sustainability reach Manager in the City of Portland’s Bureau of Planning and Sustainability. The outreach team engages residents on recycling sustainable consumption, climate change, equity and social sustainability. Ms. Norris also runs the regional Master Recycler Program, administered by the City of Portland, something that she has done since 2006.
From Our Readers

Our readers took us to task over our editorial “Urban Homesteading” that appeared in our Spring issue.

Hello!
I appreciate the spirit of your recent pieces on Urban Homesteading, but it was glaringly apparent to me that there was no mention of the fact that black and brown people were not allowed to live in Oregon until recently, or any mention of the genocide of indigenous folks who lived here before white settlers showed up. Would you be willing to address these topics in your future issues? If people on staff need more education about the black history of Portland and the racism steeped in our local political system, the organization Know Your City has great informative resources.

Thank you.
Alana (pronouns: they/them)

Hello Gary Munkhoff and colleagues,
I’m a regular reader, one who appreciates the work you folks do.
So, I was stunned to read your Editor’s Page essay in the current edition, in which you celebrate the Homestead Act — and make no mention of the fact that the land “given” to white settlers by the government was stolen from the nations who’d lived here for thousands of years. I was so surprised at your omission that I actually read the whole thing over again to be sure I’d not somehow missed that history.
I can’t help but believe you know the facts of the case, and do not care to acknowledge them.
If you think that obscuring that land theft and genocide will strengthen our attempts to change course now, to stop our rapacious, destructive use of this soil, this earth — you are grievously mistaken.
Judith Arcana
Portland

The Green Living Journal staff would like to thank our readers for questioning our one-sided perspective on the history of homesteading in America. We will make every effort to take a broader view of the topics that we bring to our readers. We apologize to all those who were offended or disappointed by our omission.
Local Notes

New Organic Sofa at Cotton Cloud

Introducing Cotton Cloud’s newest organic sofa couch! Made in California with natural latex, coconut coir, wool and FSC certified pine. You can create your own look and customize the fabric color and the customization won’t cost any extra at Cotton Cloud. Available with special 100% linen fabric that comes in 12 different earth tones ranging from oatmeal to navy.

No petroleum-based chemicals, no glue and no polyurethane foam, just pure and natural ingredients made with your health in mind. The organic sofa is the most comfortable and natural modern piece of furniture in the entire collection and the exciting news is it is available in Portland! Find it at 701 NE Broadway Portland, OR 97232.

For more info:
www.cottoncloudfutons.com

Family Farm Becomes First Certified B Corporation in the Hemp & CBD industry

Frogsong Farm of Woodburn, Oregon has spent three years setting standards in sustainable hemp farming and craft philosophy. Their seed-to-CBD model means their small staff fills many roles: hemp farming, CBD extraction, retail production, marketing, and customer service. This Certified B Corporation remains focused on the local community, maintaining an active presence in Portland area farmers markets. They offer variety of therapeutic CBD products and educational information surrounding CBD science and hemp farming.

For more info: frogsongfarm.com

Aug. 3-4, 2019
Saturday: 9:00 a.m. – 6:00 p.m.
Sunday: 9:00 a.m. – 5:00 p.m.
Linn County Expo Center
3700 Knox Butte Rd. E, Albany, OR

The Mother Earth News Fair is your passport to money-saving hacks, health-boosting remedies, and environmental strategies from leading experts and entrepreneurs around the country. In addition to presentations and hands-on workshops, you’ll encounter a vast marketplace abounding with innovative resources and products to enrich your life.

For more info:
www.motherearthnewsfair.com/oregon
Local Notes

Portland Veg Fest

Oct 5 & 6, 2019
Oregon Convention Center

Calling all vegan vendors! Join 8,000+ people of all ages and 150+ vendors at Oregon’s premier plant-based food and lifestyle event.

The largest vegan food festival in the Pacific Northwest, Portland VegFest celebrates its 15th year with 180+ food vendors, favorite veg restaurants all in one place, cooking demos from top vegan chefs, talks from leaders in the vegan movement including doctors, lawyers, activists, business owners and environmentalists, a fitness stage, activities specific to kids and teens, and more.

For more info and to apply: portlandvegfest.org

Greater Portland Sustainability Education Network

A United Nations University Regional Center of Expertise on Education for Sustainable Development serving Clackamas, Clark, Multnomah, and Washington counties in Oregon and Washington. GPSEN’s mission is to connect diverse organizations in a collaborative network that multiplies our collective capacity to educate, empower, and engage for a sustainable future. GPSEN envisions a healthy, just, and thriving region where education for sustainability is prioritized and integrated across sectors; and where everyone has opportunities to shape a sustainable future.

For more info: gpsen.org

Pacific Women’s Herbal Conference

September 20-22, 2019
Vashon Island, WA
Herbal Roots Ancestral Wisdom

Over 40 Workshops & HerbWalks
A Lively MarketPlace
Engaging social time
400 Acre Forest reserve
1.5 miles of beach on the Salish Sea

An inter-generational, nourishing, engaging, integrated weekend with women in the woods

For more info:
www.pacificwomensherbalconference.com/

Gorge Fish Market in Travel Magazine

The Brigham Fish Market, located in Cascade Locks, was recently featured in National Geographic’s Travel magazine.

The Brigham family belongs to the Confederated Tribes of the Umatilla, and their store is the first Native American–owned brick-and-mortar fish market in the Columbia Gorge.

For more info: brighamfish.com/
“SPROING!”

That sound came to mind when I was thinking about Resilience. Resilience means being able to bounce back in the face of a challenge, being able to adapt and make changes, and even to innovate. Whether the power goes out, or your job is eliminated, or there is a glitch in the kitchen, resilience means figuring out how to adjust and reorganize in order to cope with those new conditions. Developing resilience is essential to enjoying well-being.

Figuring out a new or different way to solve a problem doesn’t need to be about something monumental or earth-shaking (like the Big One). It can be as simple as finding a work-around for using Word, or any other technology. That’s exactly what I did recently when my efforts at making a new galette recipe didn’t work out. I just adapted the recipe and the shape, baked it and it was still tasty, just more creative looking. Another cooking-related example is figuring out what to substitute for a missing ingredient so the meal can be completed.

Years ago, when Alan Alda was hosting Scientific American Frontiers on PBS, we watched a segment about our early human ancestors. One of the show’s points that stuck with me was those beings who could adapt best to changes were the ones who survived. Being flexible and thinking creatively are just as important now as it was then.

Do you ever think about what would you do if ________ (fill in the blank)? One example that comes to my mind relates to reducing our garbage to one can a year. Since China stopped taking most of the world’s recycling, we now pay even more attention to what we allow into our house, particularly when it comes to plastics. In general, avoid plastics in contact with our food, even though this is very difficult. Previously, many plastics could be taken to recycling centers such as Far West Recycling. That is no longer true so more plastic items must be put into our garbage, which we didn’t want to do. As a result, we no longer buy sushi at the grocery store near us because we can no longer recycle the little plastic tray and lid. Adapting to this new reality has made us move our thinking further upstream. Now we have become even more conscious of what we consume in order to reduce waste. Before a purchase, we stop to consider if that purchase will create any garbage.

Many of the folks who are reducing their waste are coming up with creative adaptations. Recently, a young woman who did not want to buy another plastic salad spinner, asked a Facebook group for suggestions. There were lots of ideas from the group, all of which avoided plastic, and some avoided having to spend any money.

In western Cascadia, we realize a big earthquake is due to occur at some time. And we have seen lots of wildfires and...
Betty Shelley, and her husband, Jon, have filled only one 35-gallon can of garbage per year since 2006. In her three-session class, “Less is More: Getting to One Can of Garbage a Year”, Betty Shelley teaches her techniques for reducing waste.

For more info:
www.reduceyourwasteproject.com

forest fires in these last several years. So, what adjustments must we make to adapt and prepare?

I find it helpful to make a mental list of what I want to be able to do and to know:

• Am I strong enough to be able to carry enough water to meet emergency/survival needs? (Heck, it helps to be strong to make bread, too. My mother made our bread, and her arms were very strong).

• Where can I shelter if my house is too damaged?

• Do I know how to use the tools that I might need?

• Can I cook creatively if I need to?

• Where can I store extra clothing, pots, pans and utensils, sleeping bags, toilet paper?

• What skills can I share with others? Who can I call on for help?

Climate change is causing many variations and will continue to cause more. Learning what to expect is vital. As in any extraordinary circumstance, people will need to come together to take care of each other and to share skills and resources. This is where resilience is so important. A resilient person can successfully navigate the ups and downs to experience quality of life, no matter what happens. Resilience means having the capacity to successfully adapt to stress, challenge, and adversity.

I like this thought from Elizabeth Edwards:
“Resilience is accepting your new reality, even if it’s less good than the one you had before. You can fight it, you can do nothing but scream about what you’ve lost, or you can accept that and try to put together something that’s good.”

The following link takes you to a site showing how the people in California have helped each other following the wildfires in Northern California: https://bit.ly/2ULzS Jr
Resilience refers to the ability to successfully adapt to stressors, maintaining psychological well-being in the face of adversity. It’s the ability to “bounce back” from difficult experiences. Resilience is not a trait that people either have or don’t have. It involves behaviors, thoughts, and actions that can be learned and developed in everyone.

Resilience is about being adaptable. It’s about being flexible. It’s about recognizing that we’ve got strengths that perhaps we never knew we had until we have to use them. And like many things in life - the more we practice, the more we learn. The more we find out about resilience and certainly the more we do of it, then the more resilient we become.

Resilient people are able to adapt to stress, crises, and trauma. They find ways to bounce back from the ups and downs of life and move forward. Some people are born with a strong sense of resilience. Others may need to learn skills and develop resilience. If you would like to become more resilient, these tips and information can help. Remember that resilience is a skill, like riding a bike. The more you practice, the better you’ll be.

**Ways to become more resilient:**

- Resilience isn't about “toughing it out” or reacting to every setback with a smile. Resilient people still feel sad, angry, or frustrated when faced with a setback. But they find ways to move forward, to tackle challenges with creativity, hope, and a positive attitude.

**Here are some ways to increase your resilience:**

**Maintain a sense of perspective**

Ask yourself, “How big is this problem really?” and “What do I need to do?” Remember not to blow things out of proportion or catastrophize, remind yourself of the good in your life and that things really will change.

**Recognize that you have a choice in how you handle challenges.**

You can’t control what happens to you, but you can choose how you respond. You can choose to react to changes and problems with hope and a positive attitude.

**Accept change**

Change and uncertainty are part of life. When you accept this, you’ll be better able to react to change with flexibility.

**Anticipate challenges**

Focus on the positive ways in which you can meet them rather than possible negative outcomes. This will help you feel more in control and less overwhelmed.

**Learn how to calm yourself**

When you feel yourself reacting to a challenge with escalating stress and anxiety, take steps to calm yourself (deep breathing, replacing negative thoughts).
Overcome your fear

All of us feel fear, especially when we’re faced with a change. But fear can hold us back from new experiences and opportunities for growth. If you are faced with a challenge that feels scary or overwhelming, start with the simplest thing you can do that takes you in the direction you want to go. Ask yourself, “What’s the smallest thing I can do to get started?” Once you’ve thought about it, do it.

Let go of your anger

A difficult challenge can cause us to feel angry and upset. These feelings are normal, but they won’t help us move forward. Work through your anger and try to let go of negative feelings by writing about them or talking with a trusted friend.

Take action

Avoid dwelling on problems. Focus on solutions instead. Figure out what you can do and then do it, one step at a time.

Laugh

Even when things seem to be falling apart around you, try to find time to smile and laugh. It’s very healing and it will help you forget your worries for a few moments. Rent a movie that makes you laugh or spend time with a friend with a good sense of humor.

https://www.state.gov/m/med/dsmp/c44950.htm
Herbal Plant Companions

By Erin Harwood & Eloyce O'Connor

Herbs are typically hardy and resilient. In these times of unpredictable weather, herbs provide beauty, flavor, medicine and food for people and pets. One additional benefit of herbs is serving as good companions for your flower and veggie gardens. When certain herbs are planted near or among other plants, they help those plants be resilient, too. Companion planting with herbs attracts beneficial insects or draw unwanted pests away from more vulnerable plants. Here are a few examples of our favorite companion herbs.

Calendula (Calendula officinalis)

This cheery, sunny, fragrant flower (also known as pot marigold) pairs well with eggplant and tomatoes. It attracts a wide variety of pollinators, including striped bees and iridescent bee-like insects visiting the flowers throughout the day when they are open. Calendula is also well loved by crab spiders, which enjoy the wide variety of tasty insects that visit the flowers, including some pest insects. It can be a great border plant or inter-planted among the veggies. As an annual, it will reseed itself. So, it’s best to harvest and use the flowers as an edible, for tea or for medicinal uses, so it doesn’t go to seed. If a few volunteers sprout, Calendula transplants easily, so you can move them to a more desirable location.

German Chamomile (Matricaria recutita)

This lovely flowering annual, has a floral scent with a hint of apples. It partners well with cole crops, such as cabbage, cauliflower and kale. The aroma deters pests such as the white cabbage butterfly. Its feathery leaves house a wide range of predatory insects and attract pollinators to its flowers. It is well loved by small stingless bee-like pollinators and ladybeetles/ladybugs (those bright red-backed beetles who favor aphids), who can easily access the small flowers. Like calendula, it makes a great herb to interplant in the veggie garden or on the edge of a flower “hedge” with other annuals. It pops up in many places around the farm, and since it makes such a nice companion, we often leave it where it comes up – harvesting and preserving it for tea for the winter.

Dill (Anethum graveolens)

This annual, with its umbel (umbrella like) flowers, is highly attractive to a wide range of beneficial insects, such
as lacewings. The highly predatory lacewing larvae can eat a great number of pest insects such as aphids, spider mites, leaf hoppers, and other soft bodied veggie pest insects. Dill also attracts predatory hover flies and ladybeetles, as well as parasitic wasps. We frequently find young dill plants covered with the larvae of ladybugs; the most voracious stage of the ladybug life cycle. It is a great plant to scatter in the veggie garden for cole crops, such as cabbage, kale, and broccoli. Cucumbers do not do well with aromatic herbs such as dill or German chamomile, so it’s best to separate them within the garden. If you miss harvesting a few heads, you will most likely find some volunteer dill plants in next year’s garden - we find them relatively easy to transplant.

**Yarrow (Achillea millefolium)**

This quiet but sturdy perennial is heavily inter-planted among our roses. We find it provides an excellent attractant for ladybeetles/bugs. One rose plant that does not have yarrow planted beneath it, had terrible aphids all over it. While the other roses, which are surrounded on both sides by yarrow, had significantly less. While harvesting, we often have to gently shake the ladybug larvae off the yarrow flowers. The leafy, ferny foliage, along with its tightly packed flowers, make great hiding places for many other insects. It can also be planted along with other herbs to create an easy care hedge. A mixed-herb hedge along the edge of the garden typically includes these other perennial herbs - lavender, sage, beebalm, feverfew and thyme.

These are just a few of our favorite herbs and ways we’ve successfully planted them in our gardens and landscape as companions for our veggies, flowers, and other herbs. Consider tucking one or more of these herbs among your other plants for a more resilient garden.

**Beebalm (Monarda didyma)**

Is very attractive to pollinators such as bees, bumbles, hummingbirds and butterflies. The beebalm in our garden is planted in the middle of the winter squash and pumpkin patch. Although difficult to rototill around in the spring, we’ve found this arrangement keeps all the squash and pumpkins well pollinated. Beebalm blooms later in the spring and continues to flower throughout the summer into early fall. This matches the bloom time of winter squash and pumpkins, and also provides another late source of nectar for resident hummingbirds.

Erin Harwood & Eloyce O’Connor are co-owners of Garden Delights Herb Farm in Brush Prairie, WA, where they grow a variety of herbs for culinary, medicinal, pet, home and garden use. They also offer classes.

For more info: www.gardendelightsfarm.com
8 STEPS TO A MORE RESILIENT LIFE

BY JOHNNY SANPHILLIPPO

In 2007 a cousin of mine bought a five bedroom house on a half-acre out on the far edge of the metroplex. It was her dream. It was her husband’s dream. I knew their economic situation so before they bought the place I sat down with them and expressed my concerns. The house was way too expensive. The numbers didn’t add up. They were clearly irritated with me. Didn’t I believe in them? Didn’t I want them to be happy? Why did I have to rain on their parade? You know how that ended, right? They came out the other side of the 2008 crash much worse for wear and they still haven’t recovered. They’re well into middle age now and it’s unlikely they’ll ever get back most of what they once had.

How do you live a resilient life? I’m not talking about the kind of resilience associated with Doomsday Preppers or fundamentalists awaiting the Apocalypse. I mean, how exactly do you live a normal mainstream life in a way that also happens to allow you to ride out an unexpected storm – be it natural, economic, medical, or political?

Here are a few basic guidelines.

1. Leverage is not your friend.

Debt is the process of pulling consumption forward at the expense of future freedom. It’s a form of voluntary servitude. And remember, most of the big items we buy on loan come with all sorts of ongoing obligations (insurance, maintenance, utilities, taxes, fuel) in addition to the debt service itself.

2. Have reserves on hand.

Living hand-to-mouth is no fun. I’ve been there and it’s demoralizing. Having reserves provides a cushion that allows you to coast for a while in between more prosperous times. Keep a deep pantry of shelf stable foods that will let you live for many months without taking too many trips to the grocery store. Keep some extra money on hand so you can pay your bills if your income should diminish or expenses spike for any reason. This will be easier if you’re carrying very little debt.

3. Practice multiple redundancy.

“Could you carpool, take a bus, walk, or ride a bike to all your essential daily destinations if you really had to?”

Think about alternative ways of continuing your current set of arrangements if external circumstances wobble beyond your control. If you lose your job do you have some other means of earning an income that you could fall back on quickly? Could you carpool, take a bus, walk, or ride a bike to all your essential daily destinations if you really had to? If the power went out could you somehow keep the house warm, operate a few lights, and still put dinner on the table without utilities?

4. Keep it simple.

Modern society has a strong bias for complex and expensive solutions for everything. Simpler cheaper options are always better. Grow a veggie garden. Plant some fruit trees. Add insulation to your home.

5. Have a Plan B.

Don’t assume everything will go exactly to plan. It’s great to have dreams and to strive towards them. But understand that reality has dictates of its own. Have a backup plan for how you’ll live a good life anyway even if Plan A falls apart.

6. Family and community are incredibly important.

Your personal connections are your greatest asset in life. This doesn’t necessarily need to be your blood relatives. But
you need people around you who you care about and who care about you in a deep and durable way. Get to know your neighbors. Make friends. Reach out to the people around you and cultivate community for good times and bad.

7. Be open to other perspectives.

My goals and priorities have remained constant for decades. But I’m always exploring different ways to achieve my particular objectives. Mix it up a bit. I’ve found my best role models and practical solutions from unexpected sources well outside my usual comfortable group.

8. Have fun.

If whatever you’re doing feels like drudgery than you aren’t going to keep doing it for very long. And you may not have anyone there doing it with you. If it isn’t a genuine pleasure you need to stop and work out a new plan.

Johnny Sanphillippo has been a regular contributor for Strong Towns since 2014. He is an amateur architecture buff with a passionate interest in where and how we all live and occupy the landscape, from small rural towns to skyscrapers and everything in between. He travels often, conducts interviews with people of interest, and gathers photos and video of places worth talking about (which he often shares on Strong Towns). Johnny writes for Strong Towns, and his blog, Granola Shotgun.

This article originally appeared on www.strongtowns.org on April 11, 2016. It is reprinted here under the Creative Commons Attribution-ShareAlike 3.0 Unported License.
Old so soon, so late smart. Oh, how this saying describes learning how to garden in ways to protect our bodies for the long haul! For years we think we’re bullet proof, only to find, all too soon, ourselves creaking and squeaking along. A bit of forethought, some simple ways of working, a few preventative exercises, and some equipment to save us physically, all go a long way to keep us enjoying our gardening.

The winter months can lull us into becoming less physically active. The first rays of Spring sunshine stir our desire to get outside and get busy. This is where the preventive exercises and stretches come in. Now, I am not a fitness trainer, but as an observer of human beings, rarely do we start an activity without full body stretches. This first step saves aches and twinges later, regardless of our age. I’ve never regretted my time on the recumbent bike to strengthen my leg and abdominal muscles, both of which I use while gardening.

In the last issue, I shared the delight of container gardening, which is a perfect way to safeguard our bodies from injury. Key things to remember:

• Size, not too heavy!!
• How far away is the water source? Dragging heavy hoses around is less than enjoyable and full of tripping hazards.
• Inexpensive moving dollies work great to move containers around. Pictured, are the type in use at Medicine Woman Farmacy. Trying to move anything over uneven surfaces is challenging.

Gardening in raised beds is a life saver for those with back injuries or anyone wanting to prevent back injuries. Reaching straight over to ground level, without bending knees, is asking for long term back injury. Key things to remember:

• The raised bed should be no wider than what is comfortable to reach to the middle, usually three feet across.
• If children are part of the fun, plant things for them along the edges.
• If the raised bed is accessible only from one side, it should be no more than one and a half feet wide.
• Bed height should be such as to eliminate bending at all-a container garden on legs. These are commercially available. They may be expensive, but back injuries are more costly. For the DIY’er, it’s a great way to recycle a discarded antique bed frame.

The right equipment makes all the difference when it comes to reducing physical wear and tear. This is a real “go to” for raised beds or in the ground gardens. There are various options available. This happens to be a favorite. The seat swivels, is height adjustable. There is a tray under the seat for hand tools, a wire basket on the back that’s perfect for a bucket to hold weeds or to harvest into. The front wheels swivel making it easier to maneuver. The handle, with a rope tied on it, makes for easy pulling.
A new idea, but one that surely makes sense, was presented by the owner of Red Pig Tools. How many of us really pay attention to how long the handle is on our hand tools. The handle should be long enough that it comes up to us, not the other way around! Not all handles are equal. Check it out.

Ergonomic hand tools save stress on the wrists. Preventing wear on joints goes a long way toward enjoying gardening for years to come.

These are available from a variety of companies, in a variety of colors. Incidentally, purple colored handles don’t prevent mine from disappearing from my tool kit.

Speaking of tool kit, there are several options to carry hand tools that save steps, make it easier. This particular one fits over a five gallon bucket and is washable. They are available from several companies. The key is to keep the weight in the bucket to a manageable amount.

There is such a variety of totes available to carry tools. The key is, find what works. It’s not a one size fits all. However, be prepared for other members of the family to take a liking to what’s been set-up.

Most of all, keep gardening manageable, simple and beneficial. Here’s to years of happy, healthy growing.

Laura Huckaba is the owner-operator of Medicine Woman Farmacy, Education Center in the Redland area, southeast of Oregon City. She has taught more than 2500 people, including children, how to grow vegetables in containers. As a Master Gardener, she frequently speaks to gardening clubs, addressing topics they request. In her spare time, she’s an RN.

For more info: www.facebook.com/medicinewomanfarmacy.
When Frogsong Farm broke ground in 2016, the Coston-Adams family had only an inkling of how popular CBD would become. At the time, hemp could legally be grown only in a few states under industrial hemp pilot research programs (a provision made in the 2014 Farm Bill). CBD’s surge in popularity came as a surprise to the public. In 2017, it grew rapidly from a little-known alternative health product to the subject of major national news headlines. Then, late last year, the 2018 Farm Bill nationally legalized hemp farming in the US. Suddenly, CBD seemed to be everywhere: you could buy it online, choosing from CBD-enriched tinctures, gummy bears, dog treats, or even shampoos. Hemp legalization set the stage for a new generation of farmers, along with a new generation of businesses offering hemp & CBD products to the national market.

The Basics

CBD, or cannabidiol, is a naturally-occurring compound found in the cannabis plant family. It interacts with the endocannabinoid system, a body wide receptor system which regulates pain, inflammation, and temperature to promote homeostasis within the body. Unlike THC, which causes the “high” associated with cannabis, CBD is non-intoxicating. Many CBD users report feeling a sense of calm, along with a “body high” in which pain is reduced and the body simply feels good. CBD research is examining therapeutic use in the treatment of epilepsy, arthritis, anxiety, and even cancer. Those interested can peruse ProjectCBD.org, a non-profit resource for scientific studies, educational content, and updates on the hemp industry.

Emma Chasen is a Portland-based cannabis educator and owner of Eminent Consulting. After graduating from Brown University in 2014 with a biology degree focused on ethnobotany and medicinal plant research, Emma went on to coordinate clinical oncology trials with the Brown University Oncology Research Group. Later, she relocated to Portland.

“CBD is quite promiscuous in its physiological mechanisms,” she notes. “It can interact with many diverse sets of receptor families, as well as other enzymes and factors in the body. CBD’s ability to interact with our bodies through many different routes may explain its immense therapeutic potential in managing a variety of symptoms.” CBD can be used in various ways. The most common methods of use are; internal (taken as a sublingual tincture or edibles), topical (as a lotion or salve), and inhalation (through vaping or smoking). Most clinical trials use sublingual tinctures because of their dosage consistency and diverse range of benefits. CBD is commonly used for managing chronic pain, inflammation, and anxiety.

Choosing and Using Quality CBD

A high level of therapeutic potential also comes with pitfalls. As popularity skyrockets, so does public misconception. Due to lack of industry regulation, waves of subpar and potentially contaminated CBD products have come on the market.

“CBD has immense therapeutic potential; however, it is not a cure-all,” says Chasen. “And not all CBD products are created equal. It is incredibly important to research CBD companies, ask about their practices, inquire about lab results, and consider sourcing before you purchase a product. Once you have sourced good CBD products then you must begin experimenting with consumption to find your ideal dose. Have realistic expectations and engage with other holistic modalities of healing (change in diet, exercise, mental health regimen, incorporating other medicinal herbs, etc.) as needed to optimize symptom relief.”

Dosage concentration is also key. Many people require at least 10 milligrams of CBD per dose to notice effects. Others use between 25-50 or more milligrams a day. A product should

Continued on page 22
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bargain market

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contain at least 250 milligrams of CBD per ounce, and should be clearly labeled for easy dosing. Avoid products labeled “hemp extract” since they fail to identify their contents.

Premium quality CBD is considered very safe when compared to most medicines. There is no known overdose level. Side effects, such as drowsiness and dry mouth, are rare and mild. One important note: CBD can affect the absorption of certain pharmaceutical drugs. So, check with your healthcare practitioner before using CBD if your medications warn against consuming grapefruit (grapefruit is a potentiatior similar to CBD).

Whole Plant Versus Processed CBD

The majority of bargain CBD products are made with CBD isolate, a highly processed form of CBD in which only the CBD molecule has been preserved. This white powder no longer contains other beneficial cannabinoids, terpenes, flavonoids, and other plant compounds that scientists are just beginning to understand.

“You can isolate CBD from hemp or cannabis, or you can synthesize the compound in a lab,” Chasen notes. “The problem with lab-synthesized CBD is that it may not be arranged spatially exactly the same as CBD isolated from plant material.” This can cause absorption issues in the body and can influence its observable effects. Even if CBD is extracted from plant material, most likely it will not be as effective as the CBD medicine formulated with full-spectrum processing.

Entourage Effect is a theory popularized by Dr. Ethan Russo, who maintains that all compounds within the cannabis matrix work together synergistically to maximize therapeutic potential of cannabis. When taken together, these terpenes, cannabinoids and flavonoids in the cannabis matrix multiply each other’s individual properties to better facilitate symptom relief and optimal physiological response. In other words, with cannabis and hemp, the whole is worth more than the sum of its parts.

The two magic words? Full-Spectrum. Full-Spectrum CBD extract is a thick, amber-colored, aromatic oil that is minimally processed and contains all the hemp flowers’ beneficial compounds in the same ratios as present in nature.

Looking Forward

The therapeutic use of CBD is just one of many promising applications for hemp. It has been called a wonder crop, and for good reason. No other crop has the potential to feed, clothe, fuel, and help heal humans. Hemp is a hardy and versatile crop that thrives in a variety of conditions.

Hemp seeds are a valuable food source around the globe. Fibers are used for fabric, paper, and building materials. Oil is made into biofuel and bioplastics. The flowers contain cannabinoids and terpenes, chemical compounds which promote healing and have balancing effects on the body.

All this potential is newly available thanks to hemp legalization. With legalization also comes a wave of important questions: How should hemp products be regulated? What can consumers expect from CBD companies and CBD products? What is necessary for a hemp company to ride the waves of a new and emerging industry? How will companies succeed after the hype has worn off? And what’s more: could this new industry benefit American farmland and our environment as they pass hands to a younger generation?

Read Part Two of our hemp series in Green Living’s Autumn edition.

Rebecca Recker is the Director of Communications for Frogsong Farm, the hemp industry’s first Certified B Corp. Frogsong Farm employs regenerative growing practices and their products are made using organic, all-natural ingredients and are lab tested to guarantee purity & potency.

For more info: frogsongfarm.com
ADAPTOGENS
From the Ground Up

BY EAGLESONG GARDNER

If you’re interested in herbs, you’ve probably heard the word, ‘Adaptogen’. Although this relatively new term in the lexicon of herbalism was coined in the early ’60’s, the benefits of this group of herbs have been known and used in every culture around the planet for millennia.

For a plant to be classified as an adaptogen, it must be: non-toxic, have non-specific action and be generally beneficial to the whole organism. How can an herb that is relatively non-toxic, non-specific and generally good for the entire human body, improve your quality of life?

Resilience, the capacity to recover quickly from difficulties and spring back into shape, is the key characteristic of adaptogens. Gardening has taught that plant resilience improves by stabilizing moisture and temperature, regulating function, and nourishing soil, so plants thrive. Internal regulation of body processes, deep nourishment, and tonification are some of the many qualities of adaptogens that help your body, so you thrive.

Let’s look at 5 herbs within the adaptogen classification; nettle, oatstraw, astragulus, codonopsis and ashwaganda. These 5 simple herbs come from 3 herbal traditions and represent 5 botanical families. We see that adaptogens include a broad spectrum of plants which are used by people from many traditions. Fortunately, for local gardeners, these 5 all grow well in the Pacific northwest!

Two herbs in the American bio-regional tradition:

**Nettle: Urtica dioica, Urticaceae**

A common wild plant in the northwest. Favoring the cool understory of big-leaf maple and the edges of forests, nettle is the go-to herb for energy among herbalists. Spring harvests of leaves and roots and summer harvest of seed bring the beneficial, mineral-rich nourishment of nettle to life. When foraged and cooked as a pot herb or dried for use a nourishing herbal infusion throughout the year, nettle increases vitality especially resonating with the genito-urinary system.

**Oatstraw: Avena sativa, Graminaceae**

The green stalk, leaves and grain of Oatstraw, are rich in calcium, phosphorous, iron and potassium which nourish nerves, strengthen bones, cool inflammation, and rejuvenate sexual
function. Sowing one’s wild oats speaks to that youthful energy and sexual vitality we all appreciate in life.

Two herbs with a long history of use in the Chinese herbal tradition.

**Astragalus, Huang qi: Astragalus membranaceus, Fabaceae**

Commonly called the herb of longevity and strength, the root of astragalus is used for increased energy, immune function tonification and reduced inflammation. Astragalus supports the health of the heart, lungs and blood. Thin sliced roots (found online and at Chinese herb shops in bigger cities) can be added to long cooked soups and stews. Its powdered root makes a healthy addition to cooked grains and baked goods.

**Codonopsis, Dang Shen: Codonopsis pilosula, Campanulaceae.**

This vigorous, vining, herbaceous plant works much like ginseng in the body, but with milder energy. Codonopsis is an herb which moistens and lubricates to tonify lung, kidney, and

*Continued on page 26*
digestive function thus helping the body to extract vitality from the environment. This generates more energy for the entire body. Regulating primary metabolic processes in the body is another beneficial action of codonopsis. I add codonopsis root when cooking rice and include the root in soups and stews where its mild, sweet taste is a pleasant addition.

Lastly, an adaptogen representing the Ayurvedic tradition of herbs is worthy of mention and has been adopted by American herbalists with a fervor for health.

**Ashwaganda, Withania somnifera, Solanaceae.**

Adaptogens are plants used by people the world 'round to nourish, tonify, regulate, and maintain whole body functions that are beneficial for the whole person. Just as mulch and compost maintain and regulate soil moisture, temperature and vitality in the garden, adaptogens, when used on a regular basis, can protect you from environmental stressors by strengthening and tonifying your whole being.

With regular use you'll have a reserve to call on if the occasional 'big one' does hit, ensuring a resilient response. Prevention is invisible healing. These adaptogenic herbs are best used as allies for life and perfect medicine for times such as these.

**Resources:**
- Healing Wise, Susun Weed, 2003 Ash Tree Publishing
- Adaptogens: Herbs for Strength, Stamina and Stress Relief
  David Winston and Steven Maimes, 2007 Inner Traditions/Bear & Company
- The Yoga of Herbs, Dr. David Frawley & Dr. Vasant Lad, 1986
  Lotus Press
- www.eaglesong-gardener.com Apprenticeships, Summer Herb Camps for Adults, Weekend classes

EagleSong Gardener, is the co-founder and director of the Pacific Women’s Herbal Conference. An herbalist with 40 years practice, she teaches at national herb conferences and symposiums, as well as in her home garden. Her Healing From the Ground Up herbal apprenticeships, Summer Herb Camps for Adults and weekend hands-on herbal workshops at RavenCroft Garden, home of the Pacific Wise Woman Center, all work together to keep herbs in people’s hearts, hands and homes. www.eaglesong-gardener.com & www.pacificwomensherbalconference.com

The translation of Ashwaganda, ‘smelling like a horse’ may not sound inviting, but you’ll experience its tonifying effects with regular use, especially if you’re troubled with anxiety. This will put the earthy smell into perspective. One of Ayurveda’s esteemed herbs for regulating, calming and strengthening a person, Ashwaganda can avert exhaustion. On the other hand, if you’ve reached a state of general debility, fatigue or brain fog, consider Ashwaganda for use as a rejuvenative tonic.
Resilience

Spiraling out of the depression years
From Dakota to the nation's capital
into his career as a civil servant
my father's lifetime took the turns
of soil testing, building dams,
a concrete desert and maintenance of air bases
until departing the tropics for
a project in Las Vegas, he earned his retirement.
The summer he fought for
His life in managed care, a coalition had gone
to war in the name of oil.
A man at work with these conditions:
overtime without pay in a hospital
bed near a window overlooking Shadow Valley avenue.
I wanted his ashes repose in cloisonné
to wind up with us on the ascent
my sisters and I took up into the Red Rock canyon.
Pilgrims in the desert, we
Contemplated at dusk with travelers who call their rivers
By names: the Columbia, the Missouri,
(His was the Red River.) while overlooking
the new housing development crevassed
within contours of pre-historic gullies, coulees, washes.
Desiccation led him all those years
until he had weighed in, a shadow of his former self.

-JOAN MAIERS
As the number of organic farms and organic items in the marketplace rises, more people are purchasing certified organic goods. While some are well informed about legal guidelines, marketing regulations and environmental impacts, many struggle to find facts that validate organic. This article aims to identify key differences between conventional and organic farming and to emphasize the relationship among our earth’s plants, pollinators, and other inhabitants.

One difference between organic and conventional agriculture involves synthetic substance application. Conventional agriculture permits many synthetic pesticides, herbicides, fungicides and other chemicals whereas organic agriculture does not. Although agricultural chemicals are approved by the Environmental Protection Agency and have guidelines that minimize harm, they still pose significant health risks. For example, in Dewayne Johnson v. Monsanto Company, Monsanto was ordered to compensate Johnson for damages and illness associated with use of their glyphosate herbicide, Roundup.

In addition to potential problems for humans and livestock, ubiquity of synthetic chemicals on farms, school fields, backyards, roadsides, sidewalk cracks etc. can lead to weed resistance/superweed species and harm pollinators as evidenced by Monarch butterfly decline and bee colony decline/collapse. The presence of chemical residues, like glyphosate, in groceries raises further concerns about the impact of synthetic substances upon human gut/microbiome and overall health.

While organic agriculture accepts some synthetic substances (insecticidal soaps, hydrogen peroxide and pheromones), it typically shuns synthetics and promotes only naturally-derived substances, like diatomaceous earth, neem and limonene, for pest/weed management.

Another key difference is that organic agriculture doesn’t tolerate use of genetically modified organisms (GMOs) or genetically modified (GM) seeds to grow any food items or ingredients that comprise products that are labeled organic. Conversely, conventional agriculture and aquaculture cooperates with biotechnology companies to promote GMOs, including fast-growing AquAdvantage Salmon, non-browning Arctic apples, or Roundup Ready seeds (engineered to allow crops like corn, cotton, soy and wheat to tolerate/survive RoundUp application).

GMO producers must fund testing to prove their proposed product is safe and then present test results for governmental review and approval (or denial/call for further research). Despite exorbitant costs and testing rigors, it’s still wise to consider potential conflicts of interest, research funding source(s), duration of research, especially regarding long-term effects of GMO use (GM crops have only been grown for the past ~25 years). Proponents hope that genetic modification will allow crops to withstand harsher growing conditions and climate change, to increase yields, to better feed the world’s people, or to better tolerate pesticide/herbicide sprays. Opponents suggest addressing challenges by significantly reducing carbon footprints, by minimizing food waste on local and industrial levels, and by better defending biodiversity and the countless species of creatures that may be harmed by certain conventional agricultural practices.

When flitting from flower to flower and sipping nectar, insects spread the pollen that allows plants to produce fruit and...
seeds—ensuring the next generation of plants and, ultimately, feeding the world’s inhabitants. Since bees, butterflies, moths, wasps, hummingbirds and bats, are so instrumental in pollination and reproduction, they are vital to food production as well as for the creation of the essential oils, herbal supplements, virgin plant oils, and countless additional health and wellness products we use.

According to the National Center for Appropriate Technology, one acre of lavender (*L. angustifolia*) plants yields approximately two gallons of lavender essential oil. Lavender does not heavily rely on chemical or fertilizer applications so lavender ranks highly as a sustainable crop and important pollinator food source. However, the global lavender revenue projection is 125 million dollars by 2024. This increased demand may eventually spark interest in chemical interventions and genetic modifications that benefit yield and profit, but deliver detrimental blows to nature. This information involves just one plant, while hundreds of others are grown globally on large amounts of landmass dedicated to essential oil production. Therefore, it’s critical to educate people about the impacts of organic agriculture and pollinator health. This way we may continue to reap the fruits of the pollinators labor that are so vital to our survival and wellbeing.

Connecting with organic vendors at farmers markets and

*Continued on page 30*
Purchasing local organic goods allows us to learn more about their agricultural/manufacturing practices and to contribute to a healthy ecosystem. Donating to organizations that support sustainability, pollinator health, and environmental endeavors is another great way to give. If funds are limited, then selectively purchasing certain organic items and choosing brands that pay it forward are ways to give back. You can vote with your dollar for changes you wish to see in the world. If you opt for herbal remedies, scientific aromatherapy, or other complementary and alternative items instead of chemical medications, then consider these points: up to 20,000 lbs. of blossoms yield just a few pounds (~1 quart) of certain essential oils. So, choosing organic can have significant impact. The CDC states that dietary supplement use is increasing; the Council for Responsible Nutrition’s 2018 consumer survey shows that herbal products are an ever-increasing part of the growing dietary supplement category. Regardless of whether we select organic or not, pollinators remain vital to the existence of the plants and animals that provide our oxygen, nourish us, and ensure our survival. Never forget how essential the small but mighty pollinators are to our collective wellbeing!

Amy is National Educator for Pranarom USA. She has a BS in Environmental Science, is a Certified Holistic Nutrition Consultant (CHNC), a Registered Yoga Teacher (RYT-200) and a Certified Meditation Instructor (C-MI).

Pranarom US is the number one selling organic aromatherapy line in the United States. Committed to sustainability, pollinators and planet, Pranarom Scientific Aromatherapy items contain NO GMOs, NO synthetics, NO adulterants, and are always ECOCERT and USDA organic.

Pranarom is actually a combination of two words—prana— Sanskrit word meaning breath of life or life force or chi and arom— representing the aromatic plants which create the beautifully fragrant essential oils, that are comprised of naturally occurring photochemicals capable of imparting beneficial physiological effects on the human body.
In the past ten years, we've installed solar panels on my house three times. This year we'll do it again. We save for a while, buy panels, earn our money back on sunshine, electrify more systems in our house and then repeat.

Through all the industry changes, the reduction in panel costs and fluctuating incentives, I'm often asked, when is the best time to buy? My answer: every time. Every single time we spent money on solar panels it ended up being one of the best purchases of our lives.

Why? Because financials are only part of the story. While solar panels can, and should, make some economic sense, I can speak from experience (as a proud owner of 40 of them) that there is so much more to PV than ROI.

**Beyond ROI—The Unquantifiable Benefits**

Having solar panels means experiencing the unique, incredible and unquantifiable pride in producing your own power. As I type this article, electrons that were sitting in silicon solar cells on my roof, just a nano-second ago, are now rushing through cables and providing electricity to my computer. My car is charging on these same electrons, which are also making my dishwasher and hot water heater run. I'm harvesting energy from the sun like a plant and the ineffable satisfaction of running my entire home from this infinite clean source is enormous.

Solar panel owners also get to bask in energy independence. Gasoline prices may go up, utilities may raise rates, and yet our panels make us are immune from this variability. We've locked in our price of electricity, and inflation, OPEC and other energy price influencers become irrelevant.

There is also the pleasure of knowing that we're no longer sending our money to oil state oligarchs or supporting deep water drilling; that we no longer carve coal from hillsides with our dollars or contaminate water with fracked gas. With solar panels, we are our own mini power company quietly rivaling the Enrons and Chevrons of the world. Our invested dollars not only produce clean energy but put any earnings back into our own middle-class pockets.

Finally, Solar panels give us small folks the rare chance to do something empowering in the face of myriad forces beyond our control. As heat records rise and wildfire smoke contaminates our air, how great to feel part of the solution, to feel like you're putting your shoulder to the wheel and pushing ourselves and our society in the clean energy direction we need to go.

It's like buying Victory Bonds during World War II—we're pooling small resources into a greater cause with enormous potential if there is mass buy in.

So why not take part in this Victory Panel movement? Make the decision to put solar panels on your roof. Don’t wait for perfect incentives or legislation or new shingles in 15 years or for the prices to come down more than they already have. Scientists tell us we don't have time. Solar is within reach today and provides so many enormous personal and community benefits in addition to financial payback.

**Your tomorrow is in your hands today.**

**Buy Victory Panels.**

Joe Wachunas is a passionate environmentalist. He works at the nonprofit Solar Oregon that educates and advocates for clean energy. He also works at the nonprofit Forth which advocates for electric, shared and smart mobility. He lives in a net-zero home with solar panels that charge his electric car.
It was Earth Day 2019 and it was time to celebrate one of our best traditions: recycling. There’s a lot happening in our industry today: from new robots that sort recyclables to technologies transforming recycled plastics into valuable commodities. Other big themes to celebrate: opportunity and profit.

Last year, Closed Loop Partners, and firms that co-invested with us including Goldman Sachs, Citi, Google and Engie, invested over $210 million dollars in companies that are building a circular economy. The world’s largest consumer goods companies are on board too, many making public commitments to use recycled content ratios of up to 50% in their products.

Why? Because they see opportunity – and value. Natural resource extraction is expensive and landfills are unsustainable. As we shift towards a regenerative, circular economy and unlock the embodied $1 trillion value, we know that recycling is a crucial piece of the puzzle.

Today of all days, let’s take a minute to appreciate the true value of recycling in America – and let’s commit to keep going. Here’s what you need to know to celebrate recycling when talking to friends, family, and colleagues:

### Recycling is Profitable: It’s good for taxpayers, municipalities, manufacturers, and investors

The recycling industry is an economic engine, providing over 500,000 jobs in America and creating more than $100 billion in revenue. The metal, paper, plastics, electronics, textiles and glass in the recycling stream are inherently valuable. While commodity markets do fluctuate, most of our waste still commands high prices, especially materials like PET, used in water bottles, which sold for $309 per ton, or clear HDPE, used in milk jugs, for $734 per ton, on average in 2018. Let’s think about the alternatives. If these materials end up in landfills, it’s taxpayers’ money that foots the bill. With a national average disposal cost of more than $50/ton, communities would have to pay over $3 billion annually in additional landfill disposal fees if these materials weren’t recycled.

**Case in Point: Lakeshore Recycling Systems (LRS)**

LRS serves greater Chicago and Northern Illinois, providing residential and commercial collection of recyclables, single stream recycling and construction and demolition processing services. LRS has been so successful in the past 5 years that Goldman Sachs is now their biggest investor. In their Heartland facility in 2018, they achieved revenues of approximately $65/ton and now they employ over 150 people. This best in class operation is the manufacturing feedstock for circular supply chains.

### Recycling Reduces Costs & Volatility: That’s good for business

With scarce resources and increasingly volatile markets, many of the world’s largest corporations are shifting toward circular supply chains that are stable, protect the environment and reduce costs. In doing so, they avoid the volatile extraction costs embedded in manufacturing materials, like plastic. The demand for recycled materials is growing.

**Case in Point: Public commitments by 37 major corporations.**

Thirty-seven of the world’s largest consumer brands and retailers, including Coca-Cola, Danone, Nestlé, PepsiCo, Unilever,
Walmart, and others have made public commitments to use recycled plastics in their packaging within the next 10 years. Current projections indicate new real demand in North America of 5 million to 7.5 million metric tons annually by 2030. Even better? There are technologies transforming plastics waste into the building blocks for new materials that are ready to meet this demand. As these scale, a potential revenue opportunity of $120 billion in the U.S. and Canada awaits.

**The Industry is Growing Here at Home: The opportunities are endless**

When China stopped importing foreign scrap, the recycling industry was shaken. Business as usual no longer sufficed. But this wasn’t an end to the industry, it was a wake-up call. It pushed us to invest in domestic infrastructure, process our own waste and deliver higher quality bales of recycled materials. Materials Recovery Facilities (MRFs) that were already doing this, like Eureka Recycling in Minnesota, were less vulnerable to China’s bans. The residual contamination rates of their operations are less than 8 percent and 90 percent of their recovered material goes to markets in the state, supporting regional growth. MRFs are now identifying opportunities to up their game and

*Continued on page 34*
invest in new equipment and technologies to enhance their performance. Innovative companies like AMP Robotics are gaining traction; they use AI and robotic arms to effectively sort materials. More and more investment opportunities are materializing. Global companies like Nine Dragons, one of the largest paper manufacturers in China, are now investing hundreds of millions of dollars on recycling infrastructure in the US.

**Case in Point: Pratt Industries, Georgia.**

Pratt Industries is the world’s largest, privately-held 100% recycled paper and packaging company, headquartered in Georgia. This year they’re opening a new paper mill outside of Columbus, Ohio, and also opened a paper mill in Indiana. They’ve also relocated some of their MRFs to larger facilities to accommodate high demand and have pledged to invest $2 billion in the company’s U.S. corrugated box manufacturing. Pratt Industries also pays New York City for all of its recycled paper and cardboard in order to meet restaurants’ demand for pizza boxes made from these recycled materials. The City of New York generates revenue of approximately $15/ton for cardboard while reducing waste, landfill costs, and greenhouse gas emissions.

**Our message?**

Keep recycling as a simple way to support a circular economy. It’s good for the planet, it’s good for cities, and it’s good for business.

*This article appeared in the Closed Loop Partners Newsletter on April 22, 2019, It is reprinted here with their permission*

For more info: www.closedlooppartners.com

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**Book Review**

**The Urban Farmer: Growing Food for Profit on Leased and Borrowed Land**

**BY CURTIS STONE**

There are twenty million acres of lawns in North America. In their current form, these unproductive expanses of grass represent a significant financial and environmental cost. However, viewed through a different lens, they can also be seen as a tremendous source of opportunity. Access to land is a major barrier for many people who want to enter the agricultural sector, and urban and suburban yards have huge potential for would-be farmers wanting to become part of this growing movement.

The Urban Farmer is a comprehensive, hands-on, practical manual to help you learn the techniques and business strategies you need to make a good living growing high-yield, high-value crops right in your own backyard (or someone else’s). Major benefits include:

- Low capital investment and overhead costs
- Reduced need for expensive infrastructure
- Easy access to markets

Growing food in the city means that fresh crops may travel only a few blocks from field to table, making this innovative approach the next logical step in the local food movement. Based on a scalable, easily reproduced business model, The Urban Farmer is your complete guide to minimizing risk and maximizing profit by using intensive production in small leased or borrowed spaces.

*Curtis Stone is the owner/operator of Green City Acres, a commercial urban farm growing vegetables for farmers markets, restaurants, and retail outlets. During his slower months, Curtis works as a public speaker, teacher, and consultant, sharing his story to inspire a new generation of farmers.*
According to several sources (Wasteadvantagemag.com, Euronews.com, and nbccomews.com) cigarette butts are the world’s #1 plastic pollutant.

The Ocean Conservancy has sponsored a beach cleanup every year since 1986. For 32 consecutive years, cigarette butts have been the single most collected item on the world’s beaches, with a total of more than 60 million collected over that time.

The vast majority of the 5.6 trillion cigarettes manufactured worldwide each year come with filters made of cellulose acetate, a form of plastic that can take a decade or more to decompose. As many as two-thirds of those filters are dumped irresponsibly each year. This waste often disintegrates into microplastics easily consumed by wildlife. Researchers have found the detritus in some 70 percent of seabirds and 30 percent of sea turtles.

Several ideas for addressing the problem have been put forth including outright bans on filters, using compostable filters, educating the smoker to be responsible for safe disposal, and even training crows to pick them up, but as yet no real solution has emerged.

Turns out the problem boils down to the attitudes of the smokers themselves. In industry focus groups, some smokers said they thought filters were biodegradable, possibly made of cotton; others said they needed to grind the butts out on the ground, to assure they didn’t set a refuse can afire; others said they were so “disgusted” by the sight or smell of cigarette ashtrays, they didn’t want to dispose of their smokes that way.

Industry efforts to educate smokers with anti-litter campaigns and handheld permanent ashtrays did not substantially affect smokers’ entrenched ‘butt flicking’ behaviors. In fact, industry documents revealed by one focus group showed that smokers said tossing their butts to the ground was “a natural extension of the defiant/rebellious smoking ritual.”

For more info: https://bit.ly/2GZGuiK
With several models debuting for the 2019 model year offering extended operating ranges and affordable sticker prices, there has never been a better time to own an electric-powered vehicle. Even though they account for a razor-thin percentage of all new-vehicle sales in the U.S., there's still a compelling case to be made for consumers to consider a full-electric model as their next mode of transportation.

Here's 10 reasons you should consider making the switch to an EV during 2019:

1. **SELECTION HAS NEVER BEEN GREATER.**

   A record number of electric cars and crossovers – 17 in all – are being offered in the U.S. for the 2019 model year. Sticker prices start at a budget-minded $23,900 for the tiny Smart EQ ForTwo. Most of them are priced in the $30,000 range, which is about the average cost of a new car. New models this year include the Audi e-tron and Jaguar i-Pace at the higher end of the pricing spectrum, and the more affordable Hyundai Kona Electric, Kia Niro Electric and the Nissan Leaf Plus. In addition, Tesla finally released the $35,000 entry-level version of its popular Model 3.

   What's more, a fleet of new EVs is expected to reach the market for 2020, with some arriving by year's end. These include a redesigned version of the Kia Soul EV, a new Mini Electric, and premium electrified rides from Aston Martin, Mercedes-Benz, Porsche, and Volvo's Polestar brand. While availability of a few current models is still limited to California and perhaps one or more other states that share its strict vehicle emissions standards, more EVs are now being offered in all 50 states.

2. **LATEST MODELS VIRTUALLY ELIMINATE RANGE ANXIETY.**

   While it was once a big deal for an EV to break the 100-mile barrier on a charge, eight of the 2019 EVs can run for more than 200 miles with a full battery. Tesla leads the pack with its Models 3, S, and X topping out at near or above 300 miles per charging session. The more-affordable Hyundai Kona Electric and Kia Niro Electric offer capacities of 258 and 239 miles, respectively; while the Chevrolet Bolt EV is at 238 miles and the Nissan Leaf Plus goes 226 miles on a full charge.

3. **COULD BE YOUR LAST CHANCE TO GRAB A TAX BREAK FOR BUYING AN EV.**

   The federal government is still offering qualifying electric car buyers a sizeable one-time tax credit that effectively reduces the cost of a new model by $7,500. The White House wants
to repeal this tax credit. Bills were introduced in Congress last year to either extend the federal tax credits for all automakers for a set number of years or eliminate them altogether.

Even if the tax credit remains, it’s scheduled to phase out in two stages during any calendar year in which an automaker sells its 200,000th battery-dependent vehicle, including EVs and plug-in hybrids. Tesla was the first manufacturer to hit that mark last year, which means its federal tax break dropped to $3,750 on January 1, will fall to $1,875 on July 1, and will expire altogether on December 31. General Motors also reached 200,000 EV sales last year, and its EV credits are set to phase out beginning on April 1. Fortunately, a number of states still offer their own incentives to EV buyers.

4. EV RESALE VALUES ARE RISING.

Traditionally, electric cars have suffered below-average resale prices. This is due in part to the aforementioned $7,500 federal tax credit effectively cutting their transaction prices. Plus, older

Continued on page 38

Learn More About Electric Cars

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models have shorter operating ranges than newer ones. But that’s changing. Models like the Chevrolet Bolt EV, the Tesla Model 3, S and X, Jaguar I-Pace, and Audi e-tron, that can run for 200 or more miles at a time, are expected to maintain much higher three-year resale values. Kelley Blue Book predicts the Tesla Model 3, at the top of the list, will hold onto an impressive 64.3% of its value after 36 months.

5. ELECTRICITY IS STILL CHEAPER THAN GASOLINE.

Even with relatively affordable gas prices, it’s still cheaper to drive an electric car. For example, the Environmental Protection Agency says the Hyundai Ioniq Electric, which is rated at the electric equivalent of 136 mpg in combined city/highway driving, will cost an owner $500 a year to run for 15,000 miles, based on average power rates. The EPA estimates an Ioniq Electric owner will spend $4,250 less in fuel costs over a five-year period than will owner of a gas powered car. By not having to make weekly trips to the gas station, an EV owner can further save cash by avoiding impulse purchases for things like drinks, snacks, and lottery tickets.

6. PUBLIC CHARGING STATIONS ARE BECOMING MORE COMMON.

According to the latest Department of Energy estimates, nearly 21,000 public EV charging stations are up and running across the U.S. While that figure has doubled over the last couple of years, they’re still relatively rare compared to gas stations. Still, depending on where you live you’ll find them in public parking garages at airports, office buildings and hospitals and in many retailers’ and shopping mall parking lots.

Most prevalent are the 240-volt Level 2 chargers that can fully restore an EV battery in about four hours, depending on the model. A rarer, but quicker alternative is the Level 3 DC Fast Charger that can replenish a vehicle’s battery to 80% capacity in as little as 30 minutes.

7. MAINTENANCE COSTS ARE LOWER THAN A CONVENTIONALLY POWERED VEHICLE.

Owning an electric car means never taking the vehicle in for oil changes and tune-ups, plus there are far fewer moving parts that would eventually fail and need replacing. EVs use a simple one-speed transmission and do not need wear-and-tear items like spark plugs, valves, muffler/tailpipe, distributor, starter, clutch, drive belts, hoses, and a catalytic converter. Typically, regular service visits only involve rotating the tires and checking brake pads and other components.

8. EVS CREATE ZERO TAILPIPE EMISSIONS.

Unlike an internal combustion engine, an electric motor does not spew smog-forming pollutants and greenhouse gases into the atmosphere. However, as critics are quick to point out, an EV’s overall effect on the environment depends on the local source of electricity. Their net environmental impact tends to be lowest in California, New York, and the Pacific Northwest, where renewable energy resources are prevalent, but less so in central U.S. states like Colorado, Kansas and Missouri where fossil-fueled electric plants are more common. Still, a recent study conducted by the Union of Concerned Scientists concluded that EVs are generally responsible for less pollution than conventional vehicles in all 50 states.

9. YOU CAN GO SOLAR AND GENERATE YOUR OWN POWER.

Arguably, the greenest way to keep an EV charged is to generate the electricity at home via solar panels mounted on the garage roof. Unfortunately, a solar system can cost upwards of $7,000 per installation, not including a storage battery to capture power during daylight hours for overnight charging. This could double the cost. It’s more cost-effective to take the financial plunge and convert both your house and garage to solar power. While this could set you back $20,000 or more, a federal tax credit will cover 30% of the cost. Plus, some states offer additional incentives to go solar. Unfortunately, the federal credit is scheduled to drop to 26 percent in 2020, 22 percent in 2021, and will discontinue altogether in 2022.

10. USED EVS ARE CHEAP.

Although resale values are on the rise for some of the latest longer-range models, used versions of many EVs remain bargain priced. A quick search of the Cars for Sale section of MYEV.com produced no fewer than 65 listings going for $10,000 or less. We spotted a 2011 Nissan Leaf with 57,670 miles on the odometer and a 73-mile range listed for just $5,500, while a 2012
Mitsubishi i-MiEV with 42,186 miles on the clock and a 62-mile range was listed at $5,900.

While those distances on a charge have been far eclipsed by the new EVs, at those prices a used EV makes a great second or third car in a family’s fleet for emissions- and gasoline-free around town use, or for teen drivers whose limited range can keep them close to home. An older EV can provide an affordable commuter car.

Not only is MYEV.com a great online marketplace for those shopping for a used electric car, it’s also a top destination for sellers with its comprehensive information and multiple images for each model, and its 100% free listings.

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