

**AMERICAN** *How-to:* Select the Right Generator

# SURVIVAL

## GUIDE

Vol. 9 Issue 3



# BUG OUT ABOVE THE CHAOS

WING YOUR WAY TO SAFETY

### SIMPLE AND THRIFTY PREPS

Dealing with Disasters  
On a Budget

### BATTLE OF THE BUGS!

How to Defend Against  
Nature's Mini Munchers

### TIMING IS EVERYTHING

Using Your Time Wisely  
May Save Your Life

### SIG SAUER'S MCX RATTLER

The Ultimate All-Purpose  
Survival Gun

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*Some articles in this issue might include stock images that are the property of Getty Images.*

# WORDS

## FIRST

## ONE STEP BACK, TWO STEPS FORWARD

**S**ometimes, the best path ahead begins with a step back from the situation. While we might be reluctant to give up that step, we have to believe that it's not the first step in a retreat and recognize that it's the initial move to a better outcome.

When you're too close to a problem, it often helps to take a step back and look at it from a broader, or at least a different, perspective. We've all heard the saying "can't see the forest for the trees," and this is a great example of how we face many challenges as we work to make ourselves more self-reliant and less susceptible to threats to our way of life. If we get too focused on the minutiae or the individual aspects of a plan or goal, we can undermine our own efforts by missing other opportunities that may be more effective and efficient.

With this in mind, a half-dozen of this issue's articles look at opportunities for reflection on alternatives to a variety of aspects of preparedness planning. From bugging out to cooking dinner to ways to save money, there are options to consider that can enhance our plans and improve our outcomes. As you read them, you may see ideas that you considered in the past and rejected for reasons that made sense at the time. Keeping in mind that the core purpose of prepping is to be ready for change, look at those suggestions again, as your situation may have evolved since you ruled those options out and they might make sense for you now.

Will Dabbs' cover article on bugging out in a small plane is an interesting take on the subject of escaping trouble, and while it's not practical for all, it provides some excellent upsides for those who can take advantage of this mode of travel. You might also learn that this option isn't as costly as you thought.

Suzy Jeffries took a multi-fuel cooktop into the field to evaluate its performance and dependability with two types of bottled fuel. Depending on the situation, this light, portable unit could prove as useful an alter-

native to cooking over a fire for you as it did for her.

Michael D'Angona's Gear Guide is all about gear and tools with at least two (and often many more) uses built into one silhouette. While I'm often wary of jamming a bunch of gratuitous functions into a tool or piece of gear because the kid with the MBA said it would sell better, Michael found some options that work and ultimately reduce the space, cost and weight needed to get a variety of tasks accomplished.

Dana Benner's article about "re-wilding" ourselves is definitely food for thought and hits the bull's-eye for long-term success in austere situations. If you haven't already, his piece may motivate you to begin reducing your dependence on modern conveniences without giving up their benefits.

Christopher Nyerges, the paragon of self-reliance, gives us a number of low-cost and simple ways to deal with many of the basics of day-to-day post-grid life. It's easy to overlook some of these options but that doesn't undermine their viability.

When the lights go out, there's nothing like the steady, confident hum of the right generator keeping you connected to the benefits of electricity, especially if you depend on it for oxygen, home dialysis, insulin storage and other medical essentials. Jim Jeffries' article about selecting and running home generators demystifies the subject and provides useful guidance we can all benefit from.

Remember to visit [ASGMAG.com](http://ASGMAG.com) between issues to access hundreds of articles on the widest variety of topics important to your self-reliance efforts, whether you've been at this for decades or you're just getting started. While you're online, be sure to sign up for our free weekly Newsletter, and "like" and share ASG's Facebook page: [facebook.com/pg/AmericanSurvivalGuidemagazine](https://facebook.com/pg/AmericanSurvivalGuidemagazine) and Instagram page: [instagram.com/ASGmagazine](https://instagram.com/ASGmagazine).

—Mike McCourt  
Brand Manager

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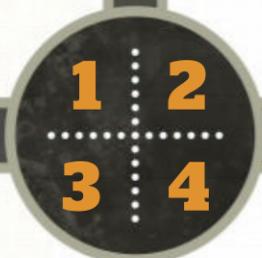


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# PRODUCTS

NEW



## 1 Expedition Watchband Compass Kit

It starts with an oil-filled compass that is water-resistant down to 100 meters. It has a black face with glow-in-the-dark markings. The compass rests in an aluminum bezel casing with a glow-in-the-dark gasket. This casing is made to slide right onto most NATO-style watch bands. Don't have a watch like that? No problem, as it also comes with a silicone carrier that slips easily on to a pack strap or belt loop. Of course, you could just drop it into a pants pocket, too.

**MSRP: \$69**

[PrometheusDesignWerx.com](http://PrometheusDesignWerx.com)

## 2 CRKT CEO

Tuck the CEO into a shirt pocket and most people will assume it is a pen. That's by design. This is a low-profile option that is well-suited for environments that might be less than friendly when it comes to knives. The blade is just a hair over 3 inches long. Fully open, the knife stretches to 7.625 inches. Its handsome appearance is nonthreatening to any co-workers who see you using it to break down boxes or open mail. At just a couple of ounces, the lightweight CEO might make you forget you have it, until you need it.

**MSRP: \$39.99**

[CRKT.com](http://CRKT.com)

## 3 PDW Ti-SST Survival Stash Tube

The name means Titanium Survival Stash Tube. It has a built-in oil-filled compass and a milled striking channel for strike-anywhere matches. The main attraction, though, is that you can fill this tube with matches, tinder, a small ferrocerium rod, and more (not included), then twist on the cap and toss it into your pocket. It is only about 4 inches long, so it'll fit just about anywhere in your pack or on your person. A silicone O-ring seal keeps water out. Some users wrap the tube with the included Type 1 survival cordage.

**MSRP: \$119**

[PrometheusDesignWerx.com](http://PrometheusDesignWerx.com)

## 4 Pro Trek PRT-B50 Watch

If you're on the hunt for a watch that can do just about anything and look great doing it, whether you're in the field or the office, the PRT-B50 series might be the perfect fit. Available in several color schemes, this watch is loaded with features. The quad sensor detects compass bearing, barometric pressure/altitude, temperature and counts your steps. The watch is equipped with a link function, so you can pair it with an app using Bluetooth so you can track your data. The watch tells time, too.

**MSRP: \$200**

[ProTrek.com](http://ProTrek.com)

# M

ost of the country didn't have much of an autumn, so here's hoping winter exits quickly and spring approaches fast. Snow camping can be fun, of course, and there is something to be said for crisp winter air filling the lungs. But not much compares to the sight of spring wildflowers blooming. Mother Nature waking up is a glorious thing and something that is best experienced on the trail. Before you head out the door, make sure you have what you'll need in case something goes awry.

Let's face it, for all of her beauty, Mother Nature can be fickle. **ASG**



## 5 TOPS Knives Poker Fixed Blade

It started as a project to make a knife suited for working with leather. The design was inspired by the Japanese kiridashi, with a sort of chisel ground edge. After attending a couple of Martial Blade Concepts' classes, designer and TOPS Knives General Manager Craig Powell tweaked the design a touch, adding the ring at the base. Thus was born the Poker. Suitable for everything from leather and woodworking to self-defense, the Poker comes with a Kydex sheath that can be set up for a wide range of carry options.

**MSRP: \$120**

[TOPSKnives.com](http://TOPSKnives.com)

## 6 TOPS Viking Norseman Fixed Blade

Sometimes, you really need a big blade. The Norseman, one of several knives designed by Kyle Lamb, owner of Viking Tactics, is just the ticket. It is almost a foot long, with the 1095 blade taking up 5.88 inches of that length. The canvas Micarta handle scales are virtually indestructible and the handle is contoured for great grip retention, even under hard use. The included Kydex sheath holds the knife securely. The blade has been finished with the well-known TOPS Acid Rain finish, too.

**MSRP: \$225**

[TOPSKnives.com](http://TOPSKnives.com)

## 7 PDW Ti-FS MK2 Lighter

With an appearance inspired by the classic pineapple grenade, this lighter is easy to grasp, hold and use, even in wet or cold conditions. At just under 2 inches high, the lighter will hardly be noticed in your pocket. It uses standard lighter fluid and flints (extra flints are included). An O-ring seal keeps the lighter dry and ready to use. Milled from titanium, the MK2 lighter is made to last and endure real-world use and abuse.

**MSRP: \$57**

[PrometheusDesignWerx.com](http://PrometheusDesignWerx.com)

## 8 Streamlight Enduro Pro USB

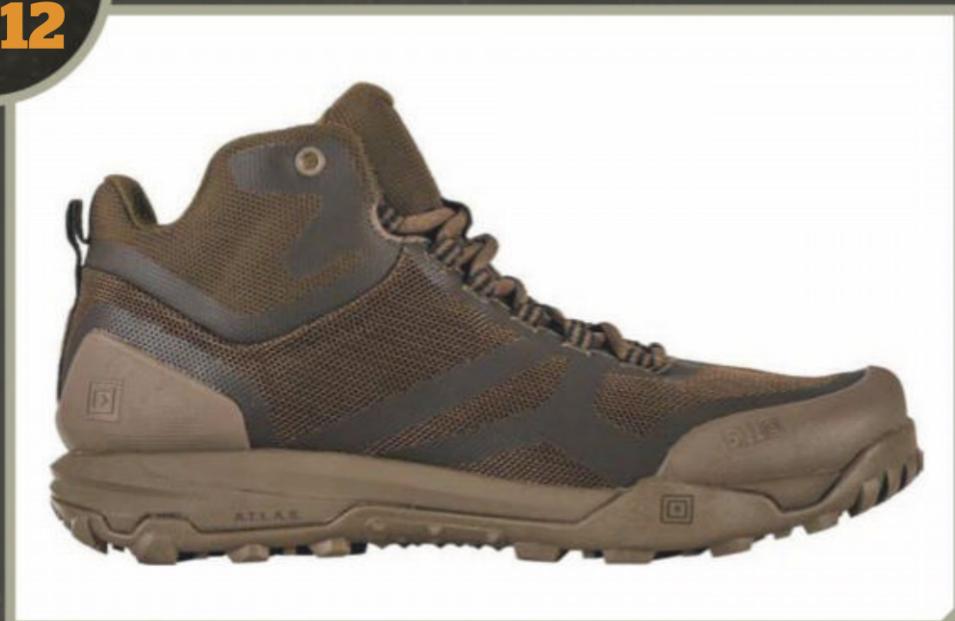
Headlamps have come a long way since the days of heavy, hot spotlights that were more trouble than they were sometimes worth. Streamlight's Enduro Pro USB model has two modes, each with three power settings. The spot is for distance and provides 200 lumens on the highest setting. The flood mode puts out 145 lumens on high and extends to about 30 meters. As the name would imply, the light's internal lithium polymer battery is charged via USB.

**MSRP: \$26**

[Streamlight.com](http://Streamlight.com)

# PRODUCTS

NEW



9

## 5.11 Tactical Surplus Jacket

With classic military styling coupled with pockets galore, the Surplus Jacket is ready for action, even if the only thing on your plate is a run to town to meet the guys for drinks. It is available in green, black or brown. Its hood rolls up and zips into the collar when it isn't needed. The jacket is equipped with the 5.11 RAPIDDraw system, which provides access to your weapon without opening the coat. The Teflon treatment repels stains and keeps you looking great.

**MSRP: \$129.99**

[511Tactical.com](http://511Tactical.com)

10

## Vanquest IBEX-35 Backpack

The IBEX-35 is a great multiday pack that has tremendous gray-man appeal. It has a clamshell opening design, giving you fast access to everything you might want or need inside. The sleeve in the main compartment is perfect for hydration bladders or a laptop. It also has one of several loop-faced MOLLE-Air panels for expansion. This pack has an upgraded suspension system, so you can carry heavy loads with ease. The elastic sternum strap and padded pull-forward waist belt also help in this regard.

**MSRP: \$229.99**

[Vanquest.com](http://Vanquest.com)

11

## Maxpedition Entity 16 Sling Pack

The Entity 16 is an ambidextrous sling pack. The main compartment has an internal sleeve for tablets. There are several pockets inside and out, allowing for excellent organization of your gear and equipment. It has a dual-access CCW compartment at the rear of the pack, giving you easy access to your weapon no matter how you're carrying the pack. The front opens fully so you can see what you have and find what you need, while the padded shoulder strap provides great comfort for the long haul.

**MSRP: \$159.99**

[Maxpedition.com](http://Maxpedition.com)

12

## 5.11 Tactical A.T.L.A.S. Mid

This is a mid-height boot that will help mitigate the stress of working with heavy loads all day long. The All-Terrain Load Assistance System that is built into the A.T.L.A.S boot, hence the name, will keep you going with enhanced support and stability. The boot also features foam cushioning and toe and heel protection. The Ortholite footbed provides long-term comfort, even if you're on your feet all day, every day. The A.T.L.A.S. boot is also a great option for hiking and backpacking, given its high-traction outsole.

**MSRP: \$139.99**

[511Tactical.com](http://511Tactical.com)



13 14  
15 16



## 13

### Topo Lucky 7 Fixed Blade

Dan Topo has been carving a name for himself in the knifemaker community for the last few years. His Lucky 7 model is an excellent option for someone looking for a fixed blade for everyday carry (EDC). The CPM 3V steel will take an edge and keep it throughout hard use. The blade runs 3.47 inches long and the knife is 7.0 inches long in total. Available handles include black G10 and brown canvas Micarta. Those with large hands will find it has a hair over a three-finger grip. A high-quality leather sheath rounds out the package.

**MSRP: Starting at \$269.95**

[DLTTrading.com](http://DLTTrading.com)

## 14

### CanCooker Companion

The CanCooker lets you combine all your meal's ingredients into one cooking vessel and make a complete dinner with minimal fuss. Simply load vegetables and meat into the cooker, add 12 ounces of virtually any potable liquid, seal the lid and add heat from any common cooking source. In less than an hour, your food will be steamed to perfection and the Companion's nonstick coating means cleanup will be a breeze.

**MSRP: \$44.99**

[CanCooker.com](http://CanCooker.com)

## 15

### Streamlight Cyclone Work Light

The Cyclone is a USB-rechargeable work light. It has a magnetic base and a stowable hook, both of which are great for when you're working under the hood of the truck. The spotlight setting produces bright white light for normal use, while the flood setting uses Streamlight's proprietary Color-Rite Technology for use in paint matching, wire identification, and other tasks where color detail is important. Both types of light have three levels of illumination. The head swivels 360 degrees and is adjustable with one hand.

**MSRP: \$90**

[Streamlight.com](http://Streamlight.com)

## 16

### 360 M9 Adventure Kit

The 360 M9 Adventure Kit combines a single-walled stainless steel 30-ounce bottle with a durable purifier and straw, giving you all you need to stay hydrated no matter where you go. The purifier has a lifespan of 40 gallons. Water will simply stop flowing through it when it hits that point. It will filter out up to 99.999 percent of harmful biological and other contaminants. If need be, the purifier and straw can be removed and water can be boiled right in the bottle.

**MSRP: \$55.95**

[MizuLife.com](http://MizuLife.com)

# **BUG OUT ABOVE THE CHAOS**

**WING YOUR WAY  
TO SAFETY**

BY WILL DABBS, MD





It all hangs by the flimsiest of threads. We believe ourselves to be a civilized, urbane lot. We go about our lives interacting socially and commercially, all working collectively to keep the hive thriving. Money moves, goods flow and information ties everything together. Right up until it doesn't.

Our tidy little world is awfully crowded, and we're never more than a headline away from pure unfiltered chaos. Social unrest, currency collapse, the disintegration of our unstable power grid, natural disasters, terrorism or one of myriad other possible end-game scenarios can move large numbers of Americans en masse.

When the balloon goes up, it really doesn't matter how awesome your gear might be. If you are sharing the roads with a zillion other terrified families, it is still going to suck.

Unless, of course, it doesn't.

There is one way to bypass all that pandemonium. If you have the means you can comfortably flee independent of terrestrial mayhem. To do so requires some effort and a not insubstantial amount of cash, but the end result makes you immune to traffic. It also massively expands your options for a quick weekend getaway when the world is not actually on fire. Such unfettered freedom requires that you own your own airplane.

### TECHNICAL CAPABILITIES

So long as you can get off the ground, you can cover vast distances in a modest period of time. I live in Mississippi. In my small plane, I can get up early on a Saturday and have lunch in Chicago.

A privately owned airplane will be as capable as your budget allows. A moderately fast two-seat machine like mine can be surprisingly affordable. However, if your mission is to fly six people quickly and comfortably across the Atlantic you will pay out the nose for it.

Unlike an automobile, an airplane has volume and weight considerations. Your minivan will tote most anything you can cram into it. By contrast, an airplane can be fairly sensitive to the amount of mass it is expected to manage. Payload considerations include passengers, personal kit and fuel.

### TECHNICAL STUFF

Flying an airplane is not necessarily hard. However, it is an acquired and perishable skill. It is also undeniably expensive.

The Army taught me to fly. If you are learning on your own nickel, expect to shell out around 10 grand for a private pilot's license. Many brick and mortar flight schools charge markedly more than that. This includes airplane rental, gas, instruction and incidentals. If you own your own airplane that number obviously gets way smaller. Finding a partner and



◀ Above: Escaping a disaster area via an airplane means you won't have to contend with crowded roads. Here's a view of what you would be missing.

**“WHEN THE BALLOON GOES UP IT REALLY DOESN'T MATTER HOW AWESOME YOUR GEAR MIGHT BE. IF YOU ARE SHARING THE ROADS WITH A ZILLION OTHER TERRIFIED FAMILIES IT IS STILL GOING TO SUCK. UNLESS, OF COURSE, IT DOESN'T.”**



◀ *Left:* My Vans RV-6A is a small, fast, relatively inexpensive homebuilt airplane. The design is tough and reliable. With thousands flying, the RV is the most popular home-built airplane in the world.

▶ *Near and far right:* Traffic gridlock can paralyze a population in a crisis, especially if vehicular accidents compound the problem. Owning your own airplane makes you immune to such chaos. Photos by Unsplash.



buying a plane together sweetens the deal considerably.

Flying demands that you meet certain requisite physical standards. Significant sight, hearing or dexterity deficits are simply incompatible with piloting an airplane. A private pilot's license requires a Class 3 medical certificate. The minimum standards are easy to find online. (See [HELPFUL LINKS](#))

The FAA requirements for a private pilot's

certificate are 40 flight hours. However, most student pilots don't meet proficiency at that point. Some folks take a little more.

A private pilot can fly day or night under visual conditions most anywhere in the country and can carry passengers so long as they aren't paying for the privilege. A private pilot can legally split flying expenses with passengers, however.

The FAA also offers two other types of airplane pilot ratings. A sport pilot can fly light sport aircraft but only in daylight and in good weather. This type of license requires at least 20 flight hours and will cost about \$4,400.

A recreational pilot can fly one passenger but must stay within 50 miles of home base. This license requires at least 30 hours of flight time. A recreational pilot license costs about \$7,700.



### IS IT SAFE?

According to the Dutch aviation consulting firm To70, there were no commercial airline fatalities anywhere on the planet in 2017. In 2018 a woman died on a Southwest Airlines airliner when an engine exploded and sent shrapnel into the cabin. This was the first fatality on an American carrier in nine years.

General aviation in America remains markedly safer than driving. One in 9,821 Americans will die in an aviation-related accident. By contrast, 1 in 114 will perish in a car crash. You are three times more likely to die choking on your food than from flying. The most dangerous part of flying is always driving to the airport.

◀ *Left:* At first blush, most airplane instrument panels seem a little daunting. Live in the thing for a while and it starts to feel like home.

***“SO LONG AS YOU CAN GET OFF THE GROUND, YOU CAN COVER VAST DISTANCES IN A MODEST PERIOD OF TIME. I LIVE IN MISSISSIPPI. IN MY SMALL PLANE, I CAN GET UP EARLY ON A SATURDAY AND HAVE LUNCH IN CHICAGO.”***

◀ *Below:* Having your own plane undeniably amps up the cool points.



## PHYSICAL CONSIDERATIONS

Flying will never be cheaper than driving. However, it is always faster. Slow general aviation airplanes will cut a car trip in half. Faster airplanes will cut a car trip by two-thirds. You can find planes that fly yet faster, but the cash outlay becomes prohibitive.

You will always be a slave to the weather. Earning an instrument rating lets you fly through clouds, but wander into a tornado, hurricane or thunderstorm and you're going to die. However, in many to most crisis scenarios you'll have plenty of time to bug out before things get sideways.

Weather moves relatively slowly. In the Information Age it is also generally predictable. Stay sharp and you can easily outrun the nastiest hurricane so long as you don't linger unduly.

Modern inflight data management systems let you keep track of weather in real time from your cockpit. I first flew in 1990. That might as well have been the Pliocene epoch. Today's inflight data would have been unimaginable when I earned my wings.

## DIY AIRBORNE SURVIVAL

My first plane was a Piper Tomahawk trainer. These planes are old and slow, but they are also surprisingly affordable – less than most decent cars. However, this sort of machine doesn't carry a whole lot.

Our litigious society has significantly curtailed the production of factory-built private airplanes. You can still find new factory aircraft out there, but they might cost as much as your house. The answer to this quandary is experimental-class homebuilts.

So long as the owner completes 51 percent of the build then he or she shoulders the legal responsibility for the machine. This keeps homebuilt aircraft affordable. Like most human endeavors, building airplanes can be done well or it can be done poorly. In the case of amateur-built airplanes it behooves you to do your homework.

Modern manufacturing techniques mean that, in many cases, the original kit producer still does most of the heavy lifting. Essential stuff such as wings and fuselage components can come preassembled. The build process is undeniably challenging yet remains within the technical capabilities of most folks reasonably handy with tools. If you are trying to build an airplane and still



◀ The worse the situation gets, the quicker you'll want to exit the area. A plane can be a great asset at these times.

› *Near right:* Natural disasters come in all flavors. An airplane leaves you unaffected by such catastrophes.



**“UNLIKE AN AUTOMOBILE, AN AIRPLANE HAS BOTH VOLUME AND WEIGHT CONSIDERATIONS. YOUR MINIVAN WILL TOTE MOST ANYTHING YOU CAN CRAM INTO IT. BY CONTRAST, AN AIRPLANE CAN BE FAIRLY SENSITIVE TO THE AMOUNT OF MASS IT IS EXPECTED TO MANAGE.”**

have a job and a life, however, this will take a while. Most homebuilt airplanes require years to complete if you are working only in the evenings and on weekends.

I bought my current plane from the original builder. You can generally poke around a machine and tell if the person who built it was serious or not. You want your builder to be diagnosably OCD.

You will want to have a mechanic you trust go over every inch of it. Worn belts or loose fittings that might be annoying in your car can be catastrophic in an airplane. However, once you get comfortable behind the controls the world is your oyster.

An older four-seat airplane is also not terribly expensive to own or operate, and airplanes age much better than cars. Your family situation obviously drives the details. However, flying might be more practical than you think.

### PRACTICALITIES

Owning your own plane also entails insurance, maintenance and hangar fees. I budget up to a grand a year for my annual inspection by a licensed mechanic. Many to most small airports will let you tie down your plane outside for free. However, the weather can take a toll over time.

Even if you cannot afford your own aircraft being able to fly a plane can be a lifesaving skill in a crisis. I'm obviously not encouraging illegal behavior, but it is markedly easier to hotwire a plane than a car. Airports are technically secure areas, but I have climbed over a fence before when I forgot to ask about a gate code before heading off for dinner.

My plane has small tires and performs best on a hard surface. However, slap a set of tundra tires on a Super Cub and that thing becomes an airborne mountain goat. Plan your contingencies in advance and you can potentially land in all manner of unexpected places. The surface has to be fairly smooth, and wires are not your friends, however, with a little skill and experience it is amazing where you can go.

A secluded rural road free of obstructions or a closely mowed field are both potential improvised airstrips. Recon such spaces carefully in advance. A single unforeseen ditch will ruin your day.

### DENOUEMENT

A decent used airplane is not necessarily the overwhelming financial burden you might think. Chip away at the project over time as you might any investment and approach the undertaking methodically, and it might surprise you. If used responsibly a personally owned airplane can become your fast ticket to safety.

◀ *Above:* With proper planning you can launch an airplane in a surprisingly short period of time. As is the case with most things, preparation is key.

### THE ULTIMATE 3-DIMENSIONAL SPORTS CAR

My Vans RV-6A will carry two normal-size people and up to about 100 pounds of gear about 170 mph. Be meticulous and you can get up to 700 miles out of a full fuel load. However, bugging out in an airplane demands serious planning.

◀ *Below:* A properly configured iPad feeds an absolute wealth of crucial information into the cockpit in real time.





◀ *Left:* Flying an airplane is not necessarily hard but it is expensive. A pilot's license costs thousands of dollars, and plane ownership costs are high.

My airplane is aerobatic and more fun than a barrel of monkeys. Now that my kids are grown and gone this fast little airplane helps keep us connected. Unlike a long car trip, getting there really is half the fun.

My RV-6A burns seven to eight gallons per hour at around \$5 per gallon.

There is plenty of space behind the seats for gear so long as you are mindful of the weight. The canopy on my plane slides back like that of a P-51 Mustang, and the design is simple and rugged. The small wheels prefer a hard-surface runway, but this plane will get me and a loved one miles from calamity before normal folk can get to the interstate.

➤ *Above left:* Owning your own plane opens up all manner of exciting weekend trip opportunities during times of peace.

➤ *Right:* Weapons intended for use while bugging out in a plane need to be compact and lightweight. The SIG Sauer MCX Rattler is the smallest production AR-based pistol on the market.



◀ *Left:* The cargo compartment in the author's RV-6A is plenty adequate for basic survival gear. Weight typically becomes an issue before lack of space.

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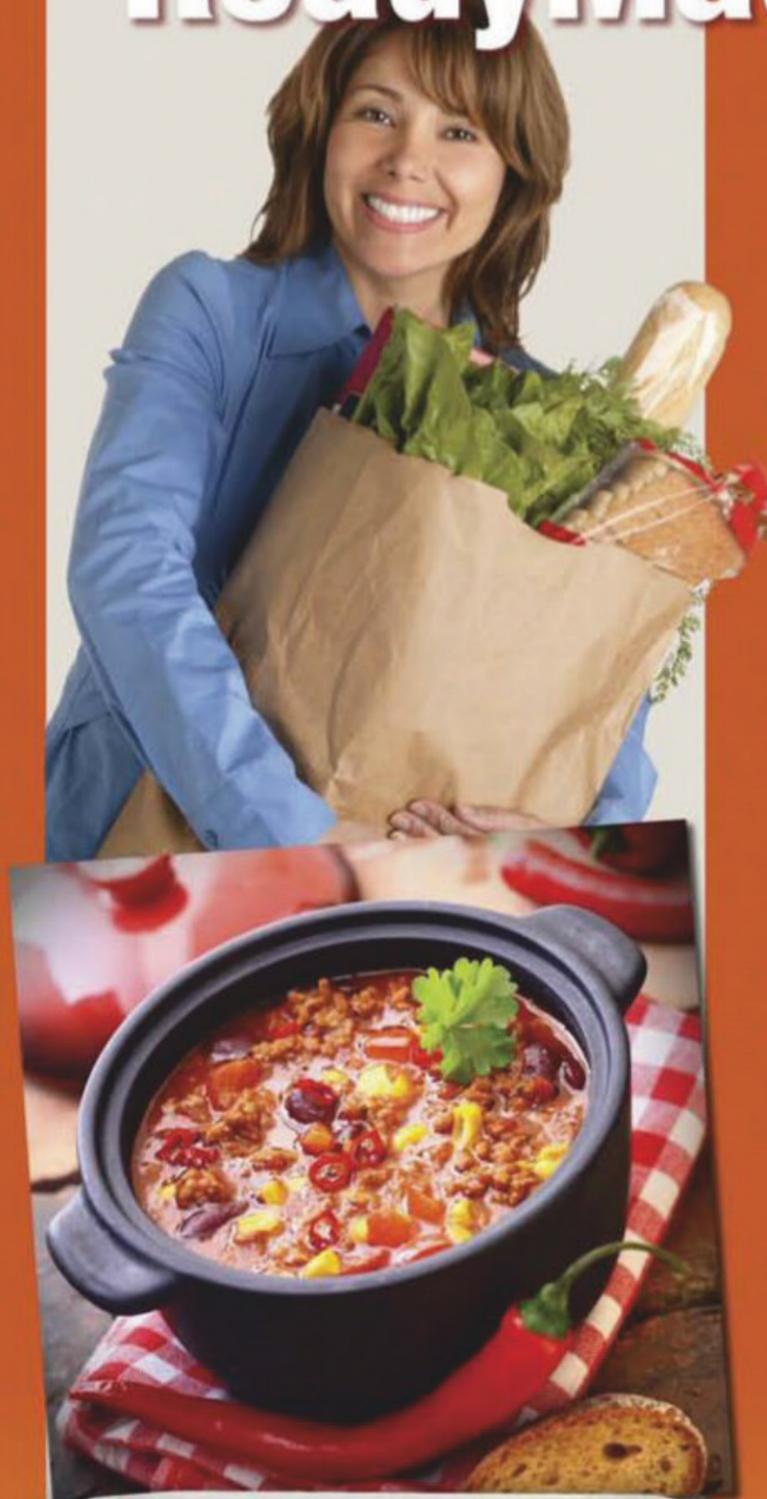


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◀ The capacity to fly lets you vault over all the congestion, headaches, and danger associated with the mass migration of humanity in a disaster.



The plane is nimble and responsive though still fairly forgiving. Stall speed is a mere 49 mph. I needed some time in a slower plane before I graduated to the RV, but now I can wear that thing like a second skin. However, like any addictive drug, once you get started flying it can be mighty tough to stop.

### **AIRBORNE ORDNANCE**

You don't have to clear security when you fly a general aviation airplane out of a small airport. Flying with a gun is therefore no more onerous than driving. However, weapons and ammunition get heavy fast.

Half a dozen 30-round P-Mags stuffed with 5.56mm ammunition weigh 6.5 pounds. That same load packed with .300 BLK weighs 8 pounds. A comparable 7.62x39mm AK ammo loadout weighs about 10 pounds.

By contrast, six loaded 30-round 9mm MP5 magazines weigh 7 pounds. That means a typical AR and half a dozen magazines will weigh about 14 pounds. Add a suppressor

and a few well-reasoned accessories with a little carry gear and you can push 18. A loaded Glock 17 handgun with three 33-round mags runs about 5.5 pounds.

I always fly with two reliable means of conjuring fire along with a couple of space blankets, a good knife, some paracord and whatever mission-specific kit you might need. I keep a charged power bar for my cell phone, a Lifestraw water filter, and a signal mirror handy as well.

Pack it all into a bag you can just grab and go in case you need to egress the machine in a hurry. **ASG**

### **HELPFUL LINKS**

**Federal Aviation Administration (FAA)**  
FAA.gov

**To70 Aviation Consultants**  
To70.com

**Van's Aircraft**  
VansAircraft.com/rv-6/



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# MULTI-FUEL MEALMAKER

CANCOOKER'S VERSATILE COOKTOP BRINGS THE HEAT!

BY SUZY JEFFRIES



◀ *Left:* Even with a light wind and without a wind guard, frying the day's catch on the Cooktop was flawless.

**A** quality portable cooktop is a must-have for anyone who routinely goes on hunting, camping or fishing trips. I also believe everyone should have a reliable, and safe, portable cooktop for emergency preparedness. Emergency preparedness is a continuous what-if and may be called to action at any time and for a wide variety of reasons. What if your electricity or gas service goes out? You may have a gas grill but that's not especially portable if the emergency requires bugging out. For less than a \$100 investment, a portable cooktop could mean the difference between drinking safe water and eating well or not eating at all.

When considering the purchase of a cookstove (or any equipment), it is important not only to evaluate if it meets statements or advertising claims made by the company, but to also research the company's reputation, the warranty and the return policy.

If you are new to cooktops/camp stoves, you should understand that those which use gas fuel are not intended for indoor use as they are considered a carbon monoxide hazard, and most are not intended to be used in windy conditions, as the wind can extinguish the flames and fuel will continue to flow. Some cooktops/camp stoves include a wind guard, or they can be purchased separately. This information will not typically be stated or advertised but is generally addressed in the product's instruction manual.

› *Near right:* The plastic storage/carry case is flimsy and offers little protection for the Cooktop.



◀ *Near left:* The warning label is hard to miss, being placed in a position that may catch fire and must be removed prior to using the Cooktop.

◀ *Far left:* Weighing in at 5 pounds, the Cooktop is light enough to carry with one finger.

› *Far right:* The Cooktop's small footprint makes it a perfect addition to a daylong or overnight kayaking trip. It easily stores in a standard gear hatch. The author recommends that the Cooktop be packed in a dry bag since its storage/carry case is not waterproof.

## CONSIDERATIONS

Equipment purchases are generally made with a particular purpose in mind. Therefore, being mindful of that purpose is important when making the decision of which model or brand of equipment to buy. When evaluating portable cooktops/camp stoves, a few questions to ask yourself include:

Is it for hunting, camping or fishing trips; tailgating, parties or emergency preparedness?

Will it be used as the primary or backup stove?

What is the weather typically like where or when it will be used (is it cold, windy, rainy)?





## CanCooker Multi-Fuel Portable Cooktop

### Specifications

- Dimensions: 13.5x11.125x4.5 inches
- Stove weight: 3 pounds
- Carry weight: 5 pounds (with propane hose and regulator)
- Propane consumption: 160 grams/hour (7.9 megajoules/7,488 BTU/hour)
- Propane input rating: 7,650 BTU/hour maximum
- Butane consumption: 175 grams/hour (8.7 megajoules/8,246 BTU/hour)
- Butane input rating: 8,367 BTU/hour maximum
- Propane hose: Model SMDF 1401 350 PSIG (maximum)
- Propane regulator: Model SMDF 1401 15 PSIG

**MSRP:** \$59.99  
CanCooker.com

◀ *Left:* Preparing to set up the CanCooker Multi-Fuel Portable Cooktop for its first use.

Will you need to carry it for a long distance (how much does it weigh, how big is it)?  
How much does the fuel weigh?  
How much does the fuel cost and is it readily available where you're likely to be?  
How is it constructed?  
How easy is it to set up and use?  
Each of these questions should be answered before you start shopping.

### REPUTATION

Seth McGinn's CanCooker, headquartered in Fremont, Nebraska, was founded in 2009, and information online indicates the Multi-Fuel Cooktop has been on the market at least five years.

Seth McGinn's CanCooker has a Better Business Bureau (BBB) rating of A-plus. While the company is not accredited, the BBB tracks complaints it receives against companies

◀ *Below left:* Removing the warning label was quite a task.

◀ *Below:* Adhesive remover helped remove the label.

◀ *Below right:* After applying adhesive remover, it was necessary to scrape the warning label off. In an effort not to damage the enamel coating, a stick sharpened with a knife was used.

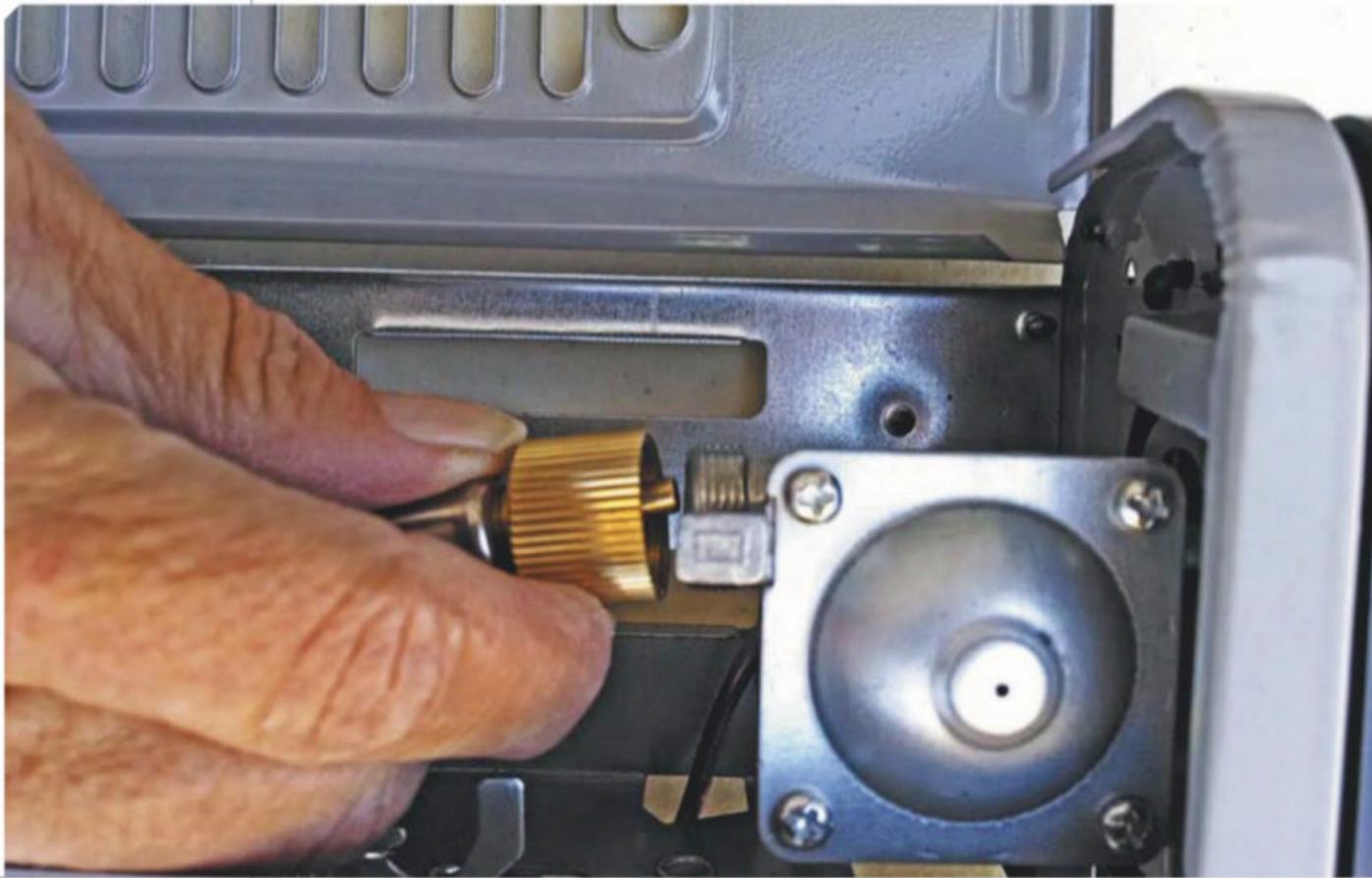
(accredited or not) and shows only one complaint filed against Seth McGinn's CanCooker in the past 10 years.

### STATEMENTS AND ADVERTISING

The Multi-Fuel Portable Cooktop is advertised as:

- Operating ultra-quietly in a compact design;
- Perfect for outdoor use – including camping, hunting, fishing and tailgating – and a



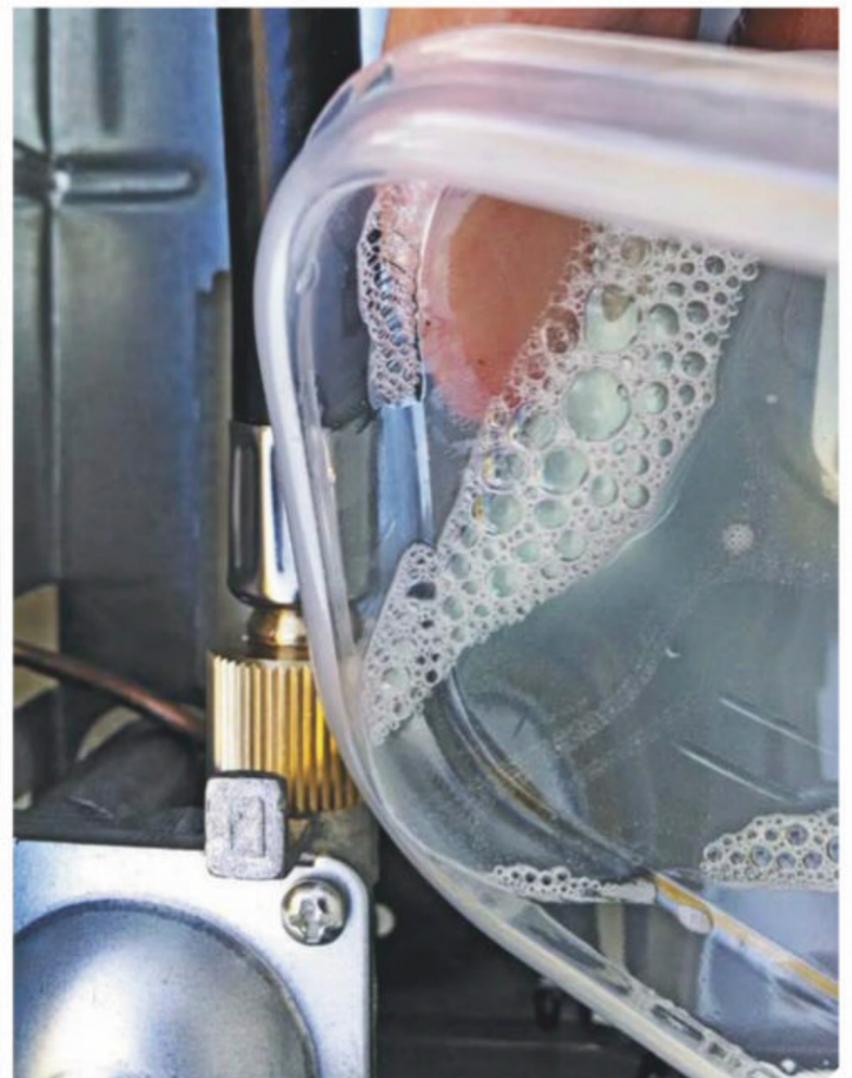


› Above: Instructions to attach the propane hose's brass fitting to the Cooktop were straightforward.

› Near right: It was necessary to use two hands to attach the brass fitting to the Cooktop: one to hold the hose straight and the other to tighten the fitting.

› Far right: Testing for leaks with soapy water.

***“EQUIPMENT PURCHASES ARE GENERALLY MADE WITH A PARTICULAR PURPOSE IN MIND; THEREFORE, BEING MINDFUL OF THAT PURPOSE IS IMPORTANT WHEN MAKING THE DECISION OF WHICH MODEL OR BRAND OF EQUIPMENT TO BUY.”***



- great complement to your backyard grill;
- Easy to use, with its electronic ignition system, so you don't need matches or batteries to light it;
  - Always ready to go because of its convenient carry/storage case;
  - Multi-Fuel uses standard 8-ounce butane and 16.4-ounce propane canisters that are sold separately.
  - Includes propane hose and regulator (\$25 value)

### **COOKTOP CONSTRUCTION**

There was no information found on the company's website or found through an online search describing the materials used for construction of the Cooktop. The body appears to be constructed of a light-gauge stamped steel; the burner was lighter than I would expect if it were stainless steel, leading me to believe it is made of aluminum; and the drip pan appears to be have some type of enamel coating.

### **FIELD TEST**

We took the Cooktop on a three-day fishing/camping trip to see how it performed. It is compact and light enough to carry with an index finger. While the



◀ Far left: The body of the Cooktop appears to be constructed of a light-gauge steel.

◀ Near left: The drip pan appears to have an enamel coating.

Cooktop's small footprint and weight make it extremely portable, the storage/carry case is flimsy and offers little protection for the stove, so great care must be used to protect it when packing for a trip.

Setting up the Cooktop was simple and the instruction manual easy to follow. The only issue encountered was a warning label instructing the user to ensure the drip pan is in the correct position prior to use, and instructions to remove that label before use. The label is placed in a position that it could possibly catch fire, and removing that

▶ Right: The adjustable flame was reliable and worked flawlessly (when the wind wasn't blowing).



◀ Above: The burner appears to be made of aluminum.

◀ Left: When adding home-cut fries at an ambient temperature of 62 degrees (F), the oil's temperature immediately dropped from 300 to 225 degrees (F) but quickly climbed back to 300 degrees (F).

› *Right:* When installing the butane canister, the regulator guide is aligned with a notch in the canister rim.

› *Below:* When installing the butane canister, make sure to push down on the fuel lock lever to secure the canister in place.

label was not an easy task. Fortunately, there was adhesive remover in the truck (I have no idea why) and a sharpened stick was used to scrape off the label.

Instructions to hook up the propane cylinder were very clear. No tools were required; however, it was necessary to use both hands to connect the brass propane fitting to the stove, one to keep the hose straight and the other to tighten the fitting. The hose and regulator appear to be well-made and durable. Instructions to install the butane cylinder were equally easy. I was delighted to see the “soapy water bubbles” test for leaks included in the manual for



both butane and propane installations.

## PROPANE VS. BUTANE



As one of the features of this cooktop is the ability to burn different fuels, it is important to understand a few basic differences between propane and butane.

### AVAILABILITY

While this may not be the case in your area, in my area propane is readily available but butane is not. After looking online and calling retailers, I made a 90-minute roundtrip drive to purchase an 8-ounce canister of butane.

### TEMPERATURE

Butane and propane are liquid fuels and must turn into gas in order to burn. During my research, I learned that the point where fuel ceases to turn into gas (remains liquid) is referred to as the boiling point. Propane's boiling point is around -44 degrees (F), whereas butane's boiling point is around 30 degrees (F). There are other technical factors included in the boiling point, such as atmospheric pressure, but suffice to say that once the temperature reaches freezing, butane may not work.

### COST

In my area, the standard 8-ounce butane canister averages \$3 and the standard 16-ounce propane canister averages \$3.50. In this comparison, it is more economical to purchase a 16-ounce canister of propane rather than an 8-ounce canister of butane. However, according to Texas-Propane.com, butane can provide 12 percent more energy than propane when using the same volume, providing it is burned above freezing.

### DAY ONE

When dinnertime came around, it was cool, hovering at 62 degrees (F), and there was a light breeze of 5 to 10 mph. I had some concern about the Cooktop's ability to light and maintain its temperature without a wind guard; however, the Cooktop lit on the first try and performed well. Fish and home-cut fries were prepared in an 8-inch cast-iron skillet (cast iron most certainly helped maintain the heat). It took 16 minutes for the oil to rise to the desired temperature of 300 degrees (F). Immediately upon adding the fries, the oil's temperature dropped to 225 degrees but quickly climbed back to 300 and maintained its temperature. The adjustable flame was reliable and worked perfectly. Dinner was a success and tasty.

### DAY TWO

I was eager to try Seth McGinn's CanCooker, Jr. in conjunction with the Cooktop, and stew was on the menu; however, the weather was not cooperating. It was 48 degrees (F) with





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**“A QUALITY PORTABLE COOKTOP IS A MUST-HAVE FOR ANYONE WHO ROUTINELY GOES ON HUNTING, CAMPING OR FISHING TRIPS. I ALSO BELIEVE EVERYONE SHOULD HAVE A RELIABLE, AND SAFE, PORTABLE COOKTOP FOR EMERGENCY PREPAREDNESS.”**

◀ Below: Ingredients for a nourishing stew are ready to be put into the CanCooker Jr., another popular product from the maker of the Cooktop.



gusts of wind up to 30 mph. It is nearly impossible to cook on any gas-fueled camp stove in high wind without a wind guard or other wind break. Due to the weather conditions, our stew was cooked over an open fire.

### DAY THREE

This was our last day and it was a brisk 28 degrees (F) on this morning; fortunately, there was no wind. To determine the energy difference in the fuel, I added one quart of water in a triple-ply stainless steel pan and turned the Cooktop to high. When heated with propane, the water began to boil in 8 minutes and in 13 minutes it began to rapidly boil. After allowing the pan to cool to ambient temperature, I repeated the process using butane (which had been stored overnight at a temperature well

above freezing); it took a full 17 minutes for the water to begin to boil.

At lunchtime, the temperature had just reached 30 degrees (F). The Cooktop was already set up with propane and the stove lit on the first try. I set the Cooktop on high, put the stew in the CanCooker, Jr. and in 15 minutes it was warm enough to eat.

Packing up to head home, I again noticed the lightweight construction of the Cooktop's storage/carry case. Upon returning the Cooktop to the case for transport home, the case did not close properly.

### CONCLUSION

Pros: The company appears to have a good reputation and the Cooktop performed as advertised. It is truly lightweight, compact, and easy to set up. The user's manual was well-written, easy to follow and included well-thought-out safety precautions.

Cons: The storage/carry case is of substandard quality and durability.

The Cooktop is suited for occasional outdoor use such as tailgating and cookouts. It would be a great addition to your emergency preparedness supplies to serve as a backup or to have on hand for short-term use in the event of a power outage.

If you need a cooktop for occasional use that is compact, lightweight and burns propane or butane, Seth McGinn's Multi-Fuel Portable Cooktop fits the bill. The Cooktop is available on the company's website for \$59.99, as well as at other retailers for about the same price. **ASG**

### SOURCES

#### Budget Propane

[BudgetPropaneOntario.com/blog/lpg-gas-what-is-the-difference-between-propane-and-butane](http://BudgetPropaneOntario.com/blog/lpg-gas-what-is-the-difference-between-propane-and-butane)

#### Elgas

[Elgas.com.au/blog/1948-how-lpg-propane-liquid-changes-to-gas-lpg-vaporisation](http://Elgas.com.au/blog/1948-how-lpg-propane-liquid-changes-to-gas-lpg-vaporisation)

#### Texas Propane

[blog.texaspropane.com/propane-vs-butane/](http://blog.texaspropane.com/propane-vs-butane/)



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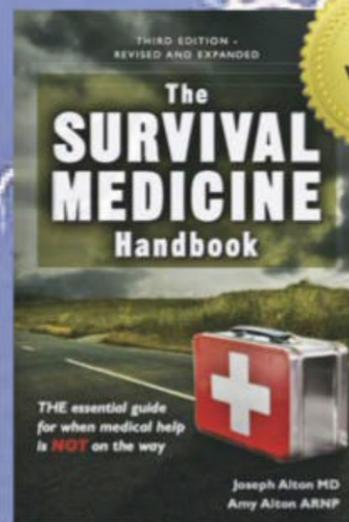
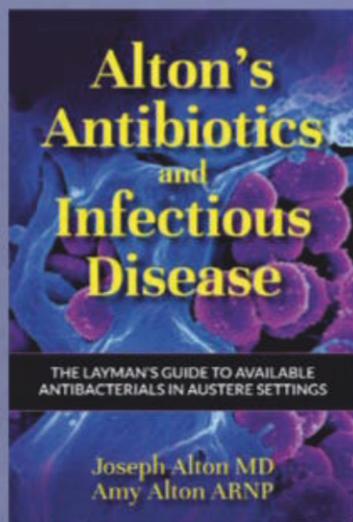


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# TIMING

# IS

USING YOUR TIME WISELY MAY  
SAVE YOUR LIFE SOMEDAY

BY DANA BENNER

# EVERYTHING





**T**ime management is a term that is very popular in today's fast-paced world of getting ahead. How many times have you heard, "There is just not enough time in a day"? Perhaps you have used it yourself. I know I have on more than one occasion.

In this article I will discuss how time management, or better yet, the proper use of time, can save your life. While many of my examples mention snow and blizzards, the actions described here apply to any severe occurrence that may happen, no matter when or where it happens.

In the big picture of survival we have no shortage of stuff. Our problem is taking the time to not only put that stuff together, but also learning how that stuff works. All of that stuff is no good if it has never been taken out of the package since the day it was purchased. Make the time now to learn about your gear, because go time is not the time to start reading the directions.

By far, the greatest threats to our survival, both long and short term, come from nature. It doesn't matter where you live; every area is prone to some sort of adverse natural occurrence. I'm talking about hurricanes, earthquakes, blizzards and the like. Over the years, I have experienced most of them and I can tell you none of them are pleasant, but they are all survivable. You just need to take the time to make sure you are prepared.

When I was growing up in New England some 50-odd years ago, weather predictions were pretty much hit or miss and seemed archaic compared to today's methods. Predicting long-term weather events was sketchy at best. The only thing we knew was that it snowed in the winter, rained in the spring, got hot in the summer and was windy in the fall. We almost never knew when a severe blizzard was coming our way until it was almost upon us. That meant that we needed to stay prepared for almost anything all of the time. My parents used to say, "If you want to know what the weather is like just look out the window". We have come a long way over the years.

Today, meteorologists can often predict severe weather a week or so out with reasonable accuracy, though storms can, and do, blow up anytime and anywhere all of the time. This ability to predict weather so far out is both good and bad. It's good

**“WHEN I LEARN OF A POSSIBLE BIG ONE, THAT IS MY CUE TO TAKE ACTION. I WANT TO TAKE ADVANTAGE OF THE TIME I HAVE TO BE PROACTIVE AS OPPOSED TO REACTIVE AFTER IT’S TOO LATE TO DO ANYTHING ABOUT IT.”**



› Left: Emergency evacuations can be prepared for in advance - with multiple contingencies - to limit the amount of anxiety you face in an already-stressful situation.

in the fact that we can use the time wisely and prepare but bad because many people don't heed the warnings and then do nothing until it is sometimes too late.

### ONE WEEK OUT

Here in the Northeast, we are prone to Nor'easters, which are storms that travel in a northeastern direction and are full of energy from the Atlantic or the Gulf of Mexico. When the storms happen during the warmer months, they usually bring strong winds and rain, and in the winter it means snow and lots of it. By itself, a Nor'easter, while it can be damaging, is not normally a major event. It is when the storm from the south connects with a storm moving in from the midwest that we have an issue. In the winter it is very common that a third element is mixed in, a cold front coming south out of Canada. When this happens, we will have a major problem, one that you need to be ready for.

I constantly watch the local news, The

Weather Channel and listen to NOAA on the radio. When I learn of a possible Big One, that is my cue to take action. I want to take advantage of the time I have to be proactive as opposed to reactive after it's too late to do anything about it.

My first order of business is to run down my list of supplies. While I always have a supply of food and water on hand, this is a good time to make note of what I am missing or low on and restock. I make sure that my generators fire up and are ready to go and have extra fuel. I make sure that there are plenty of batteries and that they have not expired.

This is also a good time to make sure that my first-aid kit is up to the job. If not, then I get what I need to make it so. Make sure that if you take medications that you have an ample supply. When these storms hit, it is a sure bet power will be lost and most places

› Below left: Before the really rough weather moves in, the author makes sure his generator is ready to go, including having plenty of fresh fuel on hand.

› Below: These Lifesaver and Reliance water containers each hold 5 gallons of water ready to be transported.



will be closed. A week ahead of a forecast storm is a long time and anything could change, but start the preparations now. When the storm arrives, there will be a mad dash to gas stations and stores. Don't get caught up in that mess. It is a waste of valuable time.

### FIVE DAYS OUT

It's five days out and nothing has changed except that the forecast is more likely to be accurate, you have less time to make preparations and supply and fuel shortages may be popping up. The storm, which is now three fronts joined together, promises to bring heavy, wet snow, cold temperatures and strong winds.

### TIME TO RAMP UP PREPARATIONS

Trees are sure to come down, many taking power lines with them, adding to the dangers of the snow-covered streets. Now is the time to decide whether you are going to head to safer climes or you are going to hunker down and ride it out. If you are going to go, the next 24 hours are crucial. Without warning, the storm could speed up and reduce your five remaining days to something less. The last thing you want to do is to hit the road with thousands of others just ahead of or during the storm and get mixed up with the other people who waited until the last minute.

If you are going, then you need to make a detailed plan, and you need to let others know

***“BY FAR, THE GREATEST THREATS TO OUR SURVIVAL, BOTH LONG AND SHORT TERM, COME FROM NATURE. IT DOESN'T MATTER WHERE YOU LIVE; EVERY AREA IS PRONE TO SOME SORT OF ADVERSE NATURAL OCCURRENCE.”***



◀ Top: The author always keeps his Midland radios fully charged and ready to go. (Left to right: Base Camp, GXT and E-Ready)

◀ Above: Having a first-aid kit is a good idea no matter what the situation.



◀ Left: Many people may try to leave the area by air. If you wait too long, your options may be limited or nonexistent.



◀ *Left:* When the water is this close, it may be too late to get out. Pay attention to weather forecasts and use the time you have to prepare for this or bug-out before it's too late.

▶ *Right:* Pay attention to the signs before the time to use them is upon you. Taking them into consideration in advance is part of the smart use of your prep time.



where you are going and the route(s) you plan on using. Pack all valuable paperwork (passports, insurance papers, licenses, birth certificates, etc.) into a watertight container and take them with you. Make sure that you have plenty of cash, as credit cards are no good if the power is out and that ATM will be down as well.

Pack enough food and water to last you up to a week, as you never know what you will find elsewhere. If you are traveling with the family pet, be sure to bring enough food for them as well. Fill your gas tank and make sure your vehicle is properly equipped to handle the trip. Don't rely

◀ *Above:* These people are moving out with a storm coming in on top of them. Don't wait this long because you don't want to be in this mess. Decide early if you are going to stay or go.

◀ *Left:* In some cases, it is not enough to stock up on supplies. You need to protect yourself and your home from impending doom.



◀ Above: If you are heading out, make sure your vehicle is ready to go before you need it.

solely upon GPS to get you where you are going. A good set of maps is in my truck at all times.

### THREE DAYS OUT

You have decided to stay. Well then, you need to prepare for the worst. Power outages, deep snow, possible tree damage to your home all could be in store. You may be



◀ Above: An example of some of the equipment you should have on hand. No way is it enough, but it is a good start. Use your time to build up the supplies you will need.



## BASIC ITEMS

Whether your plan is to stay or go, there are some basic supplies you will need.

### WATER

Bottled water is good, but there are other ways to store drinkable water. I like to use water containers sold by Reliance and Lifesaver. Both hold about 5 gallons of water and are made from food-grade plastic. Clean water may be an issue, so make sure you have enough stored to last at least a week. Filtration devices should be available in case you need to supplement your water supply with questionable water.

### FOOD

Avoid storing foods that need refrigeration. Freeze-dried foods like those made by Wild Zora, Mountain House and Honeyville are ideal for these situations. Canned cooked meats, tuna and prepared meals like stews and soups are easy to store, last a long time and are simple to prepare. Dried food like pasta and cereal are always good to have on hand. Methods for cooking and preparing food are also important to consider, so be sure your food reserves are compatible with your ability to make them ready to eat.

### COMMUNICATION

Your ability to know what is going on and communicate with others is very important. Cell phones are great as long as they work so keep them fully charged. I also have a few Midland radios: the E-Ready receiver that operates by crank, solar and battery; the Base Camp XT511 which operates as a transmitter/receiver, AM/FM and weather radio and runs on battery or by external power and GXT rechargeable GMRS/FRS two-way radios. All are capable of picking up the NOAA broadcasts and the last two are able to transmit.

### FIRST-AID

Accidents will happen, but medical help may not be readily available. You need to have a very good first-aid kit on hand and know how to use it. The Weekender First-Aid Kit sold by Orion Safety Products is a very good place to start.

### POWER

Yes, traditional power may be out, but all is not lost. Generators are very popular but will operate only as long as you have fuel. I also have a few portable solar panels, which allow me to keep electronics charged.



› *Above:* Portable stoves, like this Solo Stove bio-fuel stove, will allow you to prepare food and process water even when the power is down. Part of your preparations should include ways to prepare meals.

› *Far right:* You've done all that you can. Now you just sit it out and wait.

snowbound for many days and power could be out for weeks. Bear in mind that first responders will likely be stretched beyond their capacity as well, so help is probably not going to be just a phone call away.

While there is time, add to your supplies. It is much better to have too much than not enough. Secure as much food and water for your animals as well.

Be prepared to fix any damage that may occur, at least with basic repairs. Hand tools must be available, especially if the power is out.

At the very least you should have a hand saw, hammer and multiple screwdrivers in both slotted and Phillips heads. Wood, screws, nails, cordage and a roll of duct



◀ *Left:* This is a common sight after a Nor'easter and, sadly, a sure sign that someone waited too late to make their move.



tape should be handy to make hasty repairs.

This is the time to confirm that your vehicles have full fuel tanks, as you never know what will happen. All electronics and battery backups should be charged while you have the opportunity, and they should be kept that way. Cell phones, laptops and portable radios may be the only ways to communicate with the outside. Have some good battery-, solar- or hand-powered radios that are capable of picking up the NOAA radio station.

I have a few Midland radios, both for emergency communication and for listening to the

## ELECTRONIC INFORMATION RESOURCES

More than likely you will have to rely upon your electronics to keep you in touch with the outside world. Monitor news sources and weather alerts with your radios and laptop. Here are few sources to tap into:

**National Oceanic and Atmospheric Administration (NOAA)**

NOAA.gov

**U.S. Weather Service**

Weather.gov

**The Weather Channel**

Weather.com



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References: 1. Levi K, et al. Mechanics of Wound Closure: Emerging Tape-Based Wound Closure Technology vs. Traditional Methods. Cureus 8(10); e827. DOI 10.7759/cureus.827.  
2. Tanaka, Y. et al. Randomized Study of a New Noninvasive Skin Closure Device for Use After Congenital Heart Operations. Ann Thorac Surg 2016.



◀ *Left:* Fallen trees are a common cause for power outages that can last several days or longer. Be prepared for the loss of electricity with backup options that will cover at least your basic needs for keeping crucial devices operational.

***“PACK ENOUGH FOOD AND WATER TO LAST YOU UP TO A WEEK, AS YOU NEVER KNOW WHAT YOU WILL FIND ELSEWHERE. IF YOU ARE TRAVELING WITH THE FAMILY PET, BE SURE TO BRING ENOUGH FOOD FOR THEM AS WELL.”***

NOAA reports. These radios run on batteries, solar and can be cranked to generate power so I am all set with communications.

While there is still time, inspect your area. Make sure that the shelter for your livestock is sturdy and, if not, repair it.

Check the area for debris that can fly around and secure it. If it is winter and there is snow on your roof, remove it, as more is on its way and you don't need a roof collapse to complicate matters.

### **TWO DAYS OUT**

You've done all that you can. The skies are darkening and the wind is picking up. The storm is bearing down and could hit in full force at any time. All you can do now is monitor the weather reports, check your preps, make sure everyone understands the plan and ride it out.

### **ONE DAY AFTER**

The worst of the storm is over, but you are not out of the woods yet. Power is out and could be for days. Without power, gas stations and stores will not be open and others who were unprepared may be getting anxious. You stored enough fuel to keep your generators running for a few more days, but unless you conserve, you'll be cutting it close. Food and water are OK for now, but they too need to be conserved.

It's time to inspect your property for damage and address any problems as soon as possi-

ble. Check to make sure your neighbors are OK. If they are compromised, take them in and pool whatever resources you may have.

It is hard to predict just how long it will be before things are back to normal. That said, keep the possibility of troublesome actions by your neighbors and others in mind, especially if the situation doesn't improve soon or if it worsens.

### **SUMMARY**

Time is finite and there never seems to be enough of it. In a survival situation, your proper management of the time you have can be crucial. You may have days, or maybe only a few hours of advance warning.

Don't be one of those people who wait until the last minute to prepare. Prepare while the going is good so you will be ready when things do go bad. **ASG**

### **SOURCE**

**Honeyville**  
(888) 810-3212  
Honeyville.com

**Lifesaver**  
+44 (0) 1206 580 999  
IconLifesaver.com

**Midland Radio**  
(816) 241-8500  
MidlandUSA.com

**Mountain House**  
(800) 547-0244  
MountainHouse.com

**Orion Safety Products**  
(800) 637-7807  
OrionSignals.com

**Reliance**  
(800) 665-4403  
RelianceOutdoors.com

**Wild Zora**  
(970) 541-9672  
WildZora.com



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# SIG SAUER'S

THE ULTIMATE ALL-PURPOSE  
SURVIVAL GUN

BY WILL DABBS, M.D.

# MCMX

# RATTLER



**W**hat are the physical attributes of the ideal survival arm? Bugging out is a dynamic event defined by mobility, uncertainty, danger and chaos. A gun to pack for such an eventuality therefore needs

◀ *Above:* The SIG SAUER Rattler is the smallest production rifle-caliber pistol in the world. It is also the ideal bug-out gun.

to be compact, light, dependable and portable. Whether the weapon is tucked in a vehicle or slung across your chest, it needs to be sufficiently tidy as to not become an encumbrance.

The gun needs to be an effective social tool that can do double duty as a hunting arm. The best survival weapon is the one you never have to shoot. If life really goes sideways you want to look scarier than the next guy.

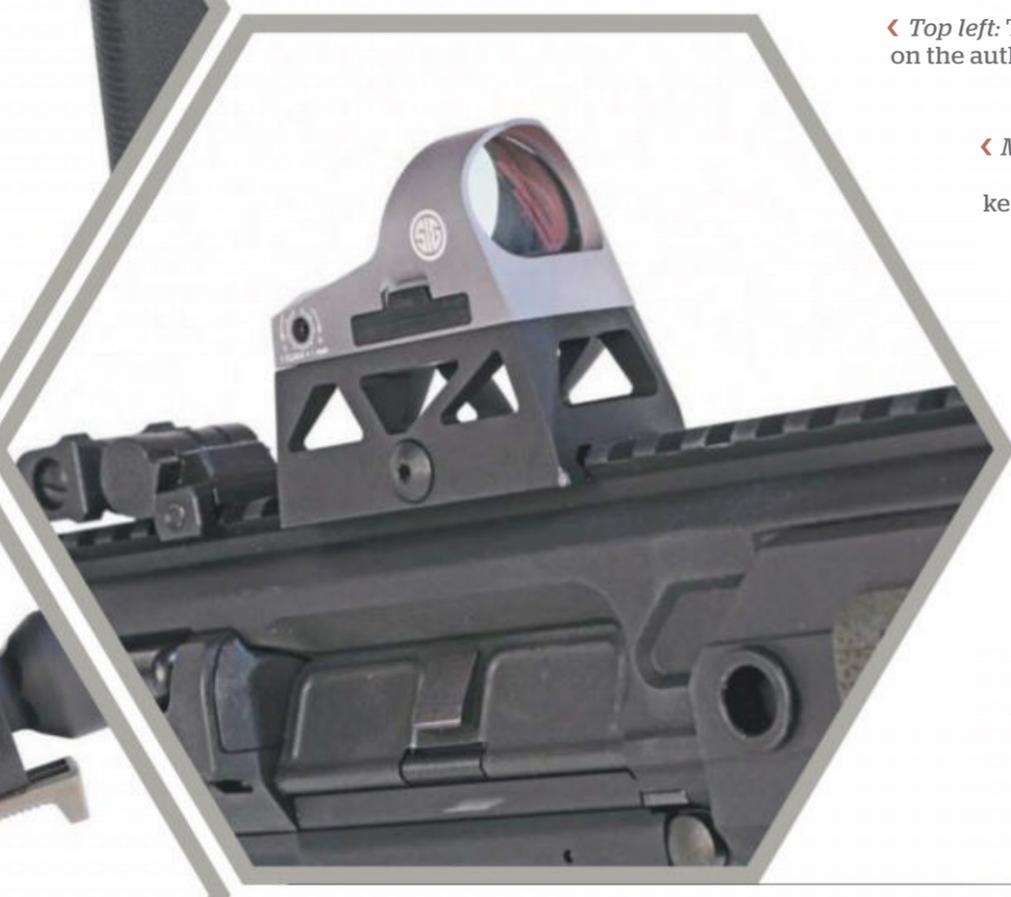
Whether it is dissuading feral animals or dropping the errant whitetail, a proper survival gun also needs to pack enough downrange horsepower to reliably do the deed. Ammo doesn't need to be unduly heavy or bulky, and the gun must be dead nuts reliable. In a perfect world this optimized survival tool would also be quiet so as to preserve your capacity to communicate and not unnecessarily telegraph your position. It seems that SIG SAUER has inadvertently contrived the perfect general-purpose survival weapon. They call it the MCX Rattler.

### VITAL STATISTICS

The MCX Rattler is an absolutely tiny modular AR pistol featuring a piston-driven action. The gun is chambered for .300 BLK and sports Eugene Stoner's apparently perfect ergonomics. If you have ever run an AR the Rattler's manual of arms will be



◀ *Top left:* The collapsible pistol stabilizing brace on the author's Rattler is what makes this gun so versatile.



◀ *Middle left:* The SIG Romeo3 electronic optic takes up very little space yet keeps the gun running fast and shooting straight.



◀ *Bottom left:* The Rattler's stubby forearm is amply supplied with M-LOK slots.

› *Top right:* The SIG SRD762 suppressor is tank-tough and maintenance-free.

› *Bottom right:* The Rattler's important controls are handy from each side of the gun.

## SIG SAUER MCX Rattler

### Specifications

- Caliber: .300 BLK
- Weight: 6 pounds, 1 ounce
- Length collapsed: 19.2 inches
- Length extended: 23.6 inches
- Barrel length: 5.5 inches with a 1:5 twist
- Action: Adjustable gas piston
- Handguard: 5-inch M-LOK

**MSRP:** \$2,719

### foundational dogma.

The Rattler's beating heart is the extraordinary SIG MCX action. The SIG MCX Virtus is a modular Information Age rendition of the original AR-15. Sporting easily interchangeable barrels, custom controls, and more than 500 potential configurations, the MCX Virtus can be optimized to be all things for all users. In its Rattler guise this is the smallest production rifle-caliber handgun on the planet.

From muzzle to butt, the open-tipped flash suppressor is rugged and effective. The 5.5-inch barrel is mated to a clean piston-driven action that is easily adjustable for subsonic and supersonic loads. Adjustment requires either a cartridge or a standard set of human fingers. The squat little aluminum handguard includes plenty of M-LOK slots for accessories, while the full-length top rail has ample space for optics. The Rattler dispenses with the traditional forward assist device.

◀ *Above:* Even with the SIG SRD762 suppressor installed, the Rattler remains unnaturally short.

The pistol grip is a proprietary stubby sort that is easy to grab yet unobtrusive. The charging handle is in the expected place and works equally well from either side. The magazine release is replicated on both sides of the gun, and the bolt catch has a bottom pad to make it easy to lock the bolt back for inspection or servicing. The safety is mirrored on both sides of the receiver as well.

The whole gun sprouts sling sockets most everywhere. The lower is forged and includes an integral trigger guard. The real magic, however, happens in the back.

The MCX Rattler is available in a raw pis-



◀ *Top left:* The SIG Rattler will feed from any STANAG magazine of any accepted capacity. The magazine release is replicated on both sides of the gun.



◀ *Middle left:* One of the many manifest appeals of the .300 BLK cartridge is that it runs through any standard 5.56mm M-4 feeding device, such as that of the SIG Rattler.

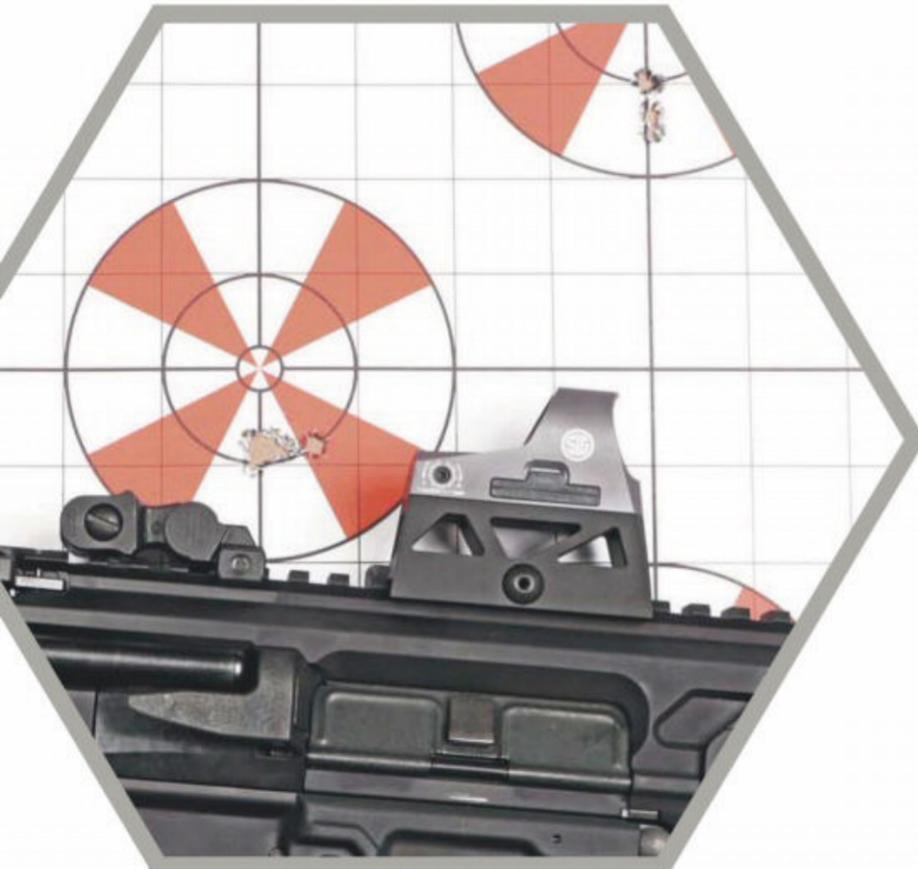


◀ *Lower middle left:* The .300 BLK is a strange hybrid round that brings bold new capabilities to Gene Stoner's proven AR chassis. From left to right are the 5.56x45mm, the .300 BLK, and the 9mm Parabellum.

## SIG SAUER .300 BLK MCX Rattler Performance Results

AMMUNITION	VELOCITY (fps)	GROUP SIZE (inches)
SIG SAUER 220-gr FMJ Subsonic	890	2.0
Gorilla Ammo 125-gr MatchKing	1,776	0.8
HPR 220-gr HPBT	902	0.8
Hornady 125-gr JHP	1,719	0.6

*Group size is best four of five shots measured center to center fired from a simple rest at 50 meters using the SIG SAUER Romeo3 red dot sight. Velocity is the average of three shots across a Caldwell Ballistic Chronograph oriented 10 feet from the muzzle. FMJ=Full Metal Jacket FPS=Feet Per Second HPBT=Hollow Point Boat Tail JHP=Jacketed Hollow Point*



◀ *Above:* These typical 15-meter groups fired from a simple rest demonstrate the SIG Rattler pistol is rifle-accurate.

tol form without a stock, as an SBR with a side-folding buttstock requiring NFA registration, and as a handgun equipped with a PCB (pivoting contour brace). I mounted mine with a sliding pistol stabilizing brace that rides on rails not conceptually unlike the buttstock of an M-3 Grease Gun. Regardless of the configuration you choose, the Rattler remains just crazy tiny. Opt for a brace and the gun doesn't require NFA registration.

### ACCESSORIZING

SIG SAUER calls itself the complete systems provider, and they aren't kidding. These guys sell guns, suppressors, ammunition, optics, accessories and clothing. Bring your own food and you can thrive on nothing more than what's in their catalog. Their line of tactical glass reflects top-flight quality at competitive prices.

The SIG Romeo3 micro red dot is sufficiently small to ride atop a handgun slide. An included riser mount brings the dot up to where it should be on a full-figured AR handgun like the Rattler. The SIG Romeo3 weighs about nothing, is intuitive and easy to use even under stress, and offers a basic red dot both-eyes-open sighting solution that makes a great gun awesome.



The sight has a variety of light intensities to accommodate everything from bright sunshine to al-Baghdadi's cave. The whole mechanism is nice and rugged. The Romeo3 runs off standard CR2032 batteries available most anyplace. Waterproof, fogproof and sporting a 3MOA dot, the Romeo3 is everything you need in a basic lightweight combat optic.

The SIG Rattler will feed from any STANAG magazine of any accepted capacity. One of the many manifest appeals of the .300 BLK cartridge is that it runs through any standard 5.56mm M-4 feeding device. However, if you want to peg the awesometer, slap a skeletonized 50-round aluminum drum from X-Products into the well.

The X-Products 50-round drum is cut from anodized aluminum and is simple to use. Turn the big wheel in front to drop the follower and slip your rounds in one at a time. The X-Products drum is at least as easy to load as a standard P-Mag while remaining just a little bit shorter.

The skeletonized version

› The SIG Rattler once nicely accessorized is the finest bug-out gun money can buy. Compact, accurate, hard-hitting and controllable, the Rattler is **one mean snake**.

**“WOW, JUST WOW. THE SIG MCX RATTLER IS UNNATURALLY ACCURATE. SIG'S PROFESSIONAL SHOOTERS HAVE LOGGED 3-INCH GROUPS AT 300 METERS USING SUPERSONIC AMMO.”**

◀ The SIG Rattler is the smallest production rifle-caliber pistol in the world. It is also the ideal bug-out gun.



**SPORTING EASILY INTERCHANGEABLE BARRELS, CUSTOM CONTROLS, AND MORE THAN 500 POTENTIAL CONFIGURATIONS, THE MCX VIRTUS [ACTION] CAN BE OPTIMIZED TO BE ALL THINGS FOR ALL USERS.”**

looks cool and lets you keep track of ammo remaining. The solid sort is incrementally heavier but more resistant to the elements. The fastest magazine change is the one you don't have to make. For survival applications a 50-round drum from X-Products keeps you plenty prickly no matter the circumstances.

Magpul makes the cool-guy stuff. They invented M-LOK. You can mount up a Magpul angled foregrip on a pistol, and Uncle Sam won't care. Orient that same grip at a right angle, and it becomes a felony. I have tried to understand it, I really have, but ultimately just gave up. When was the last time anything the government did make sense?

#### HOW DOES SHE RUN?

Wow, just wow. The SIG MCX Rattler is unnaturally accurate. SIG's professional shooters have logged 3-inch groups at 300 meters using supersonic ammo. While there is no imaginable circumstance under which one might ever take a real shot at ranges such as those it is nice to have the capability.

The .300 BLK round offers trivial recoil as well as hearing-safe acoustics in its subsonic form through a SIG suppressor. Supersonic rounds are not awful on the ears, but the gun is really in its element with the slow stuff. The Rattler slithers around corners and maneuvers within an automobile like the souped-up handgun that it is. The PSB offers a firing platform that is more stable than any conventional pistol. Thread off the can and collapse the brace, and the gun will hide in the center console of your pickup truck.

The lack of noise and recoil combined with Eugene Stoner's inimitable ergonomics means that I could double-tap targets out to 50 meters without trying hard. When firing from a rest and taking my time I could produce single ragged holes all day long at 15 meters. Out to 100 meters and beyond the velocity discrepancies between supersonic and subsonic rounds do become significant. However, when I plan my ammo and sight settings for my intended application the gun shoots better than do I.

With the can in place, the gun is sufficiently front-heavy to eliminate any noteworthy recoil or muzzle climb. The suppressor also keeps your fingers healthy, vibrant and right where God put them in the first place. Without the suppressor you do need to mind your digits when moving quickly. The angled foregrip helps a lot, but this gun is tiny. It wouldn't do to let that support hand wander.

#### DENOUEMENT

Truth be known, if you have to bug out in a crisis you'd likely be fine with a used \$100 pawn shop Hi-Point and a couple of spare mags. Like life insurance, none of us buys guns really expecting to use them for real. However, you might be That Guy who finds his minivan surrounded by insensate Antifa protesters determined to eat his kids for dinner. In that case nothing screams, "Pick a different car, dude!" like a tricked-out SIG Rattler sporting a sound suppressor and a 50-round drum.

Even if you don't have to shoot your way out of Zombieland, the SIG Rattler is more fun than a barrel of monkeys on the range. Ammo is not as common as 5.56mm, but if you can dump this kind of coin on a top-end survival gun, pony up for a thousand rounds of .300 BLK and half a dozen spare magazines and await the apocalypse secure in the knowledge that you're the apex predator.

#### THE .300BLK FOR HUNTING AND SURVIVAL

For genuine survival applications you will probably never take a shot against any two-legged threat at anything more than bad breath range. Pack that heavy long-range precision rifle if you want, but if you shoot somebody a kilometer distant and

◀ *Far left:* A nicely-accessorized SIG Rattler and a decent supply of .300BLK ammo makes you immune to the coming zombie apocalypse.

◀ *Right:* The SIG Rattler sports a smaller-than-normal proprietary pistol grip that helps keep the overall chassis unusually compact.

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**“WHEN FITTED WITH A SIG SRD762 SOUND SUPPRESSOR AND RUNNING SUBSONIC AMMO, THE RATTLER IS LYRICALLY QUIET. THESE CANS ARE BUILT LIKE ARMORED FIGHTING VEHICLES YET ARE STILL NOT UNDULY HEAVY.”**



civilization doesn't actually end you'll spend the rest of your natural days turning big rocks into little ones in the state pen. Hunting applications might reach out a bit, but the argument can be made that the perfect survival round is the .300 BLK.

The .300 BLK cartridge has gone from oddity to reliably mainstream in a few short years. There are even a few spooky high-end military organizations that purportedly use the round operationally. Jason Imhoff is the guy who thought up the .300 BLK in the first place, and he is SIG's director of ammunition engineering. The true strength of the .300 BLK cartridge rests in the fact that it uses a standard 5.56mm bolt carrier group while offering both subsonic and supersonic velocities dependent upon bullet weight.

Supersonic loads are plenty spunky for hunting whitetail deer down here in the Deep South where I live. Subsonic rounds through a

proper sound suppressor are just stupid quiet. The Rattler lets you pick your poison.

### KEEPING IT QUIET

Rumor has it that the MCX Rattler was originally contrived to fill a tactical need for some of America's most high-speed special operators. These guys needed rifle-caliber firepower that would hide unobtrusively inside a gym bag. The Rattler's compact dimensions, inimitable cool factor, and .300 BLK chambering just beg for a sound suppressor.

You've got to be careful when running a weapon this small that you don't allow your support hand to slip forward and inadvertently de-finger yourself. My angled foregrip from Magpul helps keep my fingers attached and in good working order. However, thread a SIG SRD762 can on the snout and that's no longer a concern.

When fitted with a SIG SRD762 sound suppressor and running subsonic ammo, the Rattler is lyrically quiet. These cans are built like armored fighting vehicles yet are still not unduly heavy. SIG cans are made from Inconel 718, a nickel alloy stainless steel that is also liberally used in core components of nuclear reactors. The SRD762 is a sealed tubeless design that is radically effective, maintenance-free and unimaginably rugged. There is even a series of spiky bits on the snout should you need to prod some recalcitrant zombie.

Mounting up the SRD762 involves removing the original flash suppressor and threading on the can. There's nothing to take apart, and the can is rated for both short .300 BLK barrels and heavy .300 Win Mag cartridges. Anything smaller that will fit through the bore is fair game as well with an appropriate mounting solution. **ASG**

◀ Above: The SIG Rattler is both powerful and easily controllable throughout its performance envelope.

### SOURCES

**SIG SAUER**  
(603) 610-3000  
SigSauer.com

**X Products, LLC**  
(928) 852-0078  
XProducts.com

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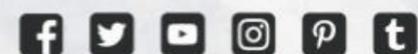
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# GEAR **GUIDE**

## HIDDEN HELPERS

**GEAR WITH BONUS FEATURES THAT HELP GET THE JOB DONE!**

BY MICHAEL D'ANGONA

**S**pace is a valuable commodity to a prepper or survival enthusiast – there always seems to be not enough.

To combat this dilemma when stocking your bug-out bag, hidden cache or home emergency kit, it's wise to make use of the plethora of tools on the market today that include a special benefit: extra gear hidden within!

Unnoticed at first glance, many survival products incorporate added utilities and equipment in discreet locations within the item. From knives hidden in handles of

shovels or axes, to tinder compartments integrated into the frame of a tool, to saw blades that fold out from seemingly nowhere, this hidden gear is valuable and space-saving. Additionally, there are numerous hats, belts and other items that feature secret compartments to store your valuables or micro survival kits.

Take advantage of these multiuse items to expand your capabilities while reducing your load's weight and volume, freeing your hands of excess gear and utilizing the concept that less can be, without a doubt, more! **ASG**



## Survive Outdoors Longer Phoenix

### Overview

At first glance, you'll notice the retractable flint that folds out from the odd-shaped handle so you may think firestarter. True, but upon further examination you will find a multi-tool knife that acts as a striker, an integrated signal whistle, a bright LED light and a secret compartment that holds dry tinder. Clip this little wonder to your belt or pack or drop it in a pocket and you're good to tackle multiple survival tasks.

### Specifications

- Retractable flint folds easily when not in use
- Hidden fixed-blade knife with multiple-use features
- Watertight compartment holds valuable tinder
- Size: 9.2x7.5x1.46 inches

### MSRP:

\$24.99

### URL

[SurviveOutdoorsLonger.com](http://SurviveOutdoorsLonger.com)



## Survive Outdoors Longer Mag Striker

### Overview

With a hearty handle for a solid grip and plenty of magnesium, you'll be starting fire after fire with relative ease. The included lanyard holds a striker with a mini ruler engraved on it, and the odd-shaped cutout is actually a bottle opener, so when the work is done, you're able to crack open a cold one.

### Specifications

- Creates enough sparks for over 100 fires
- Large, oversized handle offers a firm hold
- Burns hot, over 5,400 degrees (F)
- Size: 2.75x1.125x6.5 inches

### MSRP:

\$11.99

### URL

[SurviveOutdoorsLonger.com](http://SurviveOutdoorsLonger.com)



## Camillus Carnivore Inject Machete

### Overview

What can this multi-role machete do? It can gut, cut, dig, saw and chisel through most material with ease. Its titanium-bonded blade treatment ensures durability and performance, while its sure-grip handle allows you to maintain control as you apply the blade's razor-sharp cutting power. Need some fine trimming too? The Carnivore has you covered with a mini knife conveniently nested next to the tang within its big brother's handle.

### Specifications

- Overall length: 18 inches
- Main blade length: 12 inches
- Mini knife length: 5 inches
- Blade steel: 420 stainless

### MSRP:

\$39.99

### URL

[CamillusKnives.com](http://CamillusKnives.com)



## Camillus CAMTRAX 3-in-1 Hatchet

### Overview

Sometimes you need the precision of a saw, while other times, hacking a small log or sapling is the way to go. With the CAMTRAX, you have both. Sporting a 2.75-inch blade, this hatchet is a lifesaver in the backwoods for chopping wood fast. With a quick-flip opening, a 7-inch locking saw blade is ready to pick up where the hatchet leaves off. The third valuable feature is a solid hammer head, ideal for pounding tent stakes or breaking through nearly any hard material.

### Specifications

- Overall length: 12 inches
- Saw blade: 7 inches
- 2.75-inch titanium-bonded treated blade
- Handle and sheath material: Glass-filled nylon
- Sheath has a reversible belt clip and bonus bottle opener

**MSRP:**  
\$47.98

**URL**  
CamillusKnives.com



## Camillus Catapult Slingshot

### Overview

A slingshot makes a great hunting weapon when under survival conditions. The Camillus slingshot takes that to the next level and then some. The Catapult features heavy-duty power bands, collapsible arms and an ergonomic handle to provide a firm grip. However, when you need more, it has more! A compass within the handle keeps you on track, a hidden compartment inside holds your steel ball ammo and a firestarter is ready when you need a spark. Even a signal whistle is included. Truly a Jack-of-all-trades.

### Specifications

- Integrated survival tools throughout slingshot body
- Folding arms for easy storage and carry
- Stainless steel and rubber construction handle
- Perfect for right- and left-handed people

**MSRP:**  
\$36.98

**URL**  
CamillusKnives.com



## Schrade Extreme Survival Hollow Handle Knife

### Overview

This knife is a workhorse! From its solid steel construction, to its long cutting edge to its textured handle, this survival knife will be your best friend when an emergency strikes. But it's not only a valuable knife...it's a storage center for small life-saving gear. The knife's hollow and watertight handle can hold matches, a small first aid or fishing kit, water purification tablets or other small items you need to keep handy.

### Specifications

- Overall length: 10.3 inches
- Blade length: 5.6 inches
- One-piece SAE-1070 high carbon steel construction
- 7-piece magnetic hex bit kit included
- Includes ballistic nylon sheath

**MSRP:**  
\$104.99

**URL**  
BitBrands.com



## Gerber Gear E-Tool

### Overview

When you need to get down 'n' dirty, you need a tough tool by your side. That is exactly the place for Gerber's military-grade E-Tool. With a carbon steel shovel head and a durable glass-filled nylon handle, this shovel extracts earth at a rapid pace. But, it's more than a simple scooper. When the shovel head is folded back a hard-core pick is exposed for tough terrain or compacted dirt that needs extra effort. A serrated edge on the shovel is also a handy integrated feature, useful to cut small branches and pesky roots.

### Specifications

- Overall length: 23.75 inches
- Carbon steel shovel head
- Anodized aluminum shaft
- Durable, glass-filled nylon handle
- Weight: 2 pounds, 5.30 ounces
- Compact, tri-fold design

### MSRP:

\$108

### URL

GerberGear.com



## Gerber Gear Gator Combo Axe

### Overview

With a shortened handle and a powerful, sharp head, this axe cleaves its way through any pile of wood in its path. Its textured handle and lanyard hole combine to ensure this axe will stay put in your grip. Stored inside the handle is an added bonus, a fixed-blade knife that comes in handy when precision or more detailed cutting and other camp chores need attention. The ultimate slice 'n' dice duo!

### Specifications

- Overall length: 8.75 inches
- Overall knife length: 7 inches
- Forged steel ax head
- Durable Gator-grip textured handle
- Weight: 1 pound, 7.60 ounces

### MSRP:

\$45

### URL

GerberGear.com



## Junio Portable Trowel Shovel

### Overview

Part shovel, part trowel and definitely full of surprises. What appears to be a simple digging tool is far more than it seems. Incorporated within its stainless-steel design are a saw, ruler, hex wrench and a nail extractor and 110 inches of super-strong paracord wrapped around the handle. The tool can be used as a substitute tent spike or a tie-down for your tarp shelter. The belt-friendly carrying pouch ensures this valuable tool will always be nearby.

### Specifications

- Dimensions: 10.43x2.87 inches
- Constructed of high-strength stainless steel
- Ideal for camping, foraging and gardening
- Includes carry pouch with belt loop
- Weight: 6.8 ounces

### MSRP:

\$26.99

### URL

juniores.com



## Cold Steel Survival Edge Knife

### Overview

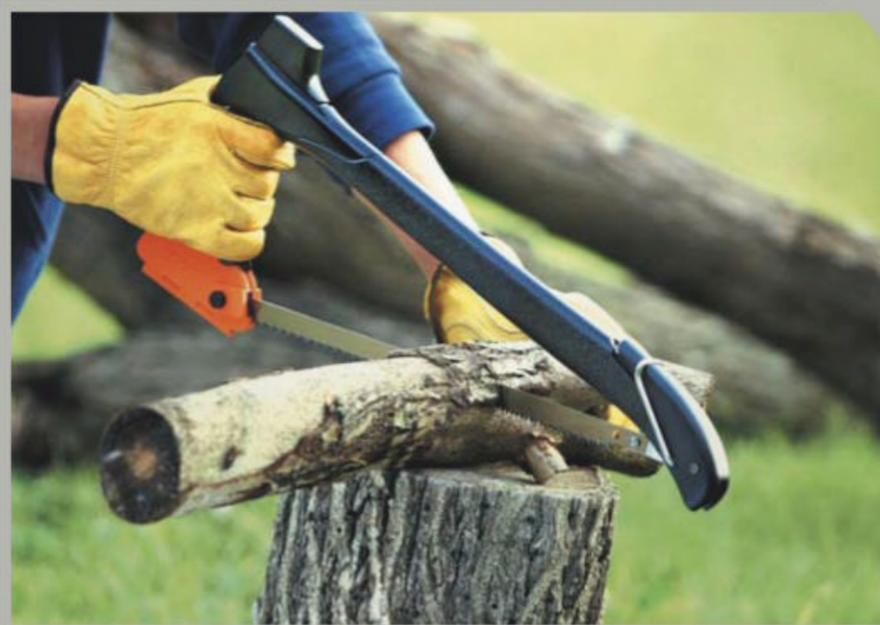
This knife is tough! From its stainless steel blade to its polypropylene handle, durability is the name of the game here. However, a sharp blade is only the tip of the iceberg. Inside the hollow handle, there is a mini survival kit that includes a ceramic sharpening rod, fish hooks and sinkers, wire, fishing line, a compass, a sewing kit and safety pins. Need to add more? No problem, there is room to spare. A weatherproof, super-light sheath rounds out this abundant package.

### Specifications

- Overall length: 9.25 inches
- Blade length: 5 inches
- Blade steel: German 4116 stainless cryo quenched
- Includes mini survival kit
- Weatherproof hard sheath with ferro rod
- Weight: 2.8 ounces (empty)

**MSRP:**  
\$39.99

**URL**  
ColdSteel.com



## Zippo AxeSaw

### Overview

As its name implies, the Axesaw comprises a wood saw and durable axe. Equipped with a mallet head, this three-in-one tool carries obvious benefits. The 15-inch steel saw blade rides inside the axe handle until it's needed. This tool is truly a triple threat when tackling the outdoors. Removable head cover protects user when the saw is deployed.

### Specifications

- Overall length: 20.3 inches
- 420 stainless steel axe head with 5-inch blade
- Rust and corrosion protected for long-time use
- Weight: 2.6 pounds

**MSRP:**  
\$79.95

**URL**  
Zippo.com



## SlideBelts Survival Belt 2.0

### Overview

Nowhere else has classic style and high functionality merged to create the perfect accessory for any outing or adventure. This belt looks good and does the job a belt should, while concealing some practical secrets. From its buckle that features a bottle opener, knife, flashlight and fire-striker to its high-tensile strength strap that is designed and built to be tough as nails in nearly any environment, this belt will serve you well.

### Specifications

- Internal webbing provides nearly 1,500 PSI of tensile strength
- Continuous-adjustment notches provide the perfect fit
- Heat-resistant up to 214 degrees (F) before softening
- Fits up to 48-inch waist
- Available in multiple colors

**MSRP:**  
\$150

**URL**  
SlideBelts.com



## Victorinox SwissCard Lite

### Overview

Need a pocket magnifying glass? This little unit has it, and it also holds much more. Contained within its credit-card-size shell are over a dozen useful tools for everyday tasks. From tweezers to scissors, screwdrivers, a small blade and a pen, this little toolkit will probably get the job done, just when you think you don't have something on you. It even includes a small LED light for emergencies.

### Specifications

- Size: 3.2x2.1x0.2 inches
- Integrated LED flashlight
- 13 useful tools
- Fits easily in most wallets
- Weight: 0.9 ounce

### MSRP:

\$38

### URL

SwissArmy.com



## Wazoo Survival Gear Cache Belt

### Overview

Whether you're hiking through the great outdoors, exploring an urban warehouse or having dinner with a friend, the Cache belt is there when you need it. Featuring a hook-and-loop closure system and plenty of room for goodies, it will store whatever suits your needs, including cash, knives, bandages, matches, cordage and more. Built tough to withstand the elements and heavy repeated use, this belt will hold up longer than you will!

### Specifications

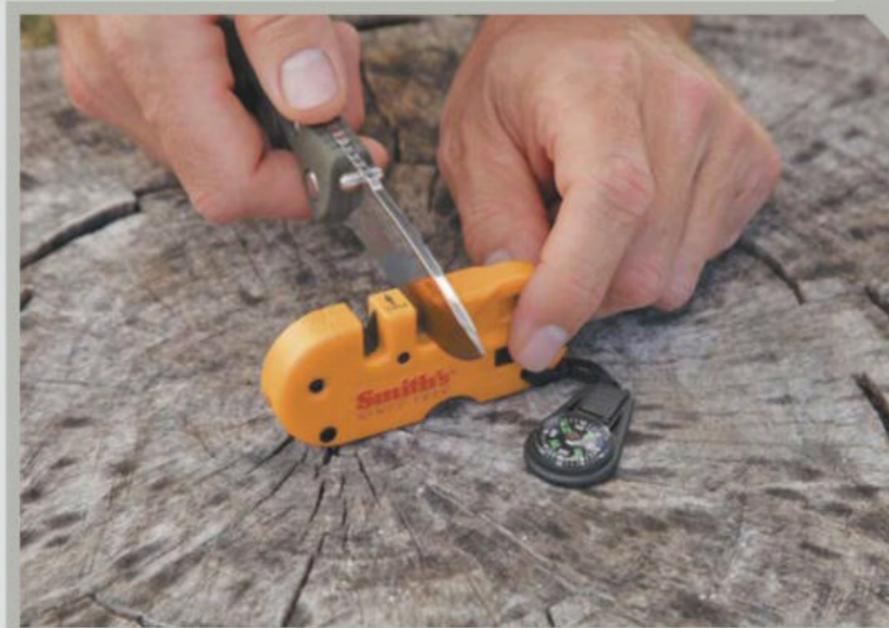
- Top-loading Velcro closure
- Holds everyday items and/or survival gear
- Ranger band tail keeper resists cracking
- Mil-Spec webbing exceeds 2,700-pound break test
- Fit up to 52-inch waist

### MSRP:

Starting at \$45

### URL

WazooSurvivalGear.com



## Smith's Pocket Pal X2 Sharpener & Outdoor Tool

### Overview

This compact sharpener by itself is a great tool for an outdoorsman. However, contained within its durable case are nearly a half-dozen additional tools. From a flashlight, to a firestarter, to a compass, signal whistle and more, you'll use this unit to hone your survival skills as well as your blades.

### Specifications

- Coarse, medium and fine abrasives
- Includes 2 pull-through slots and a sharpening rod
- Integrated high-pitch signal whistle
- Multi-use firestarter
- Lightweight, compact and portable for outdoor travels

### MSRP:

\$17.99

### URL

SmithsProducts.com



## CRKT Guppie

### Overview

Is it a knife or a multi-tool? Look carefully and you'll see it's both. The compact utility blade is useful for everyday tasks, but when you need something more, the Guppie delivers. Its handle holds flat and Phillips screwdriver bits, an adjustable wrench, a bottle opener and a bright LED light to cast some light on your job. Includes a handy belt clip for easy carrying.

### Specifications

- Compact tool fits easily in your pocket or gear bag
- Blade length: 2 inches
- Stainless steel handle
- Integrated bright LED light
- Available in black or gray

### MSRP:

\$39.99

### URL

CRKT.com



## Wazoo Survival Gear Cache Beanie

### Overview

When cold weather hits, reach for the Cache Beanie. Featuring a snug fit, fine Merino wool and warm polyester fleece, this piece of headgear is a necessity when Mother Nature turns cold. However, there is one more feature that will go unnoticed by anyone but yourself: a card-size hidden pocket to hold cash, credit cards, ID and more. No one will suspect your beanie is a home away from home for your valuables and necessities ... and that's the whole idea!

### Specifications

- 100 percent fine Italian Merino wool
- 100 percent polyester fleece liner
- Classic chunky 3-inch cuff
- No-snag hook-and-loop pocket closure

### MSRP:

\$89

### URL

WazooSurvivalGear.com



## CRKT ExiTool

### Overview

Having this seat belt cutter directly clipped to your seat belt is a very smart idea. However, the ExiTool has other, more discreet functions as well. A carbide side window breaker is incorporated into the unit to shatter glass and aid escape, while an LED light illuminates your way through murky conditions with just a squeeze from your finger. Improve your chances when driving with this handy lifesaver.

### Specifications

- Attaches easily to most seat belts
- Blade length: 0.5 inch
- Stainless steel blade
- Glass-reinforced nylon body
- 3V CR2032 lithium battery included

### MSRP:

\$26.99

### URL

CRKT.com

It's important to be ready for any emergencies and disasters, right? But sometimes it's easy to forget that the average person is on a budget and is very busy with all the other very important parts of life, such as holding a job, getting the children through school, maintaining the house, and all the other normal activities of a family life. We want to be prepared, but it seems as if all the gear and products of self-reliance require us to be a wealthy person to obtain them.

Is there a way for the person of modest income to also be ready for emergencies?

Absolutely! Preparedness is a state of mind. And just having lots of gear – even really good and expensive gear – doesn't necessarily make one fare better in emergencies. It's all about lifestyle, how you know how to use your gear and how you interact with other people.

### **KNOWING YOUR NEIGHBORS**

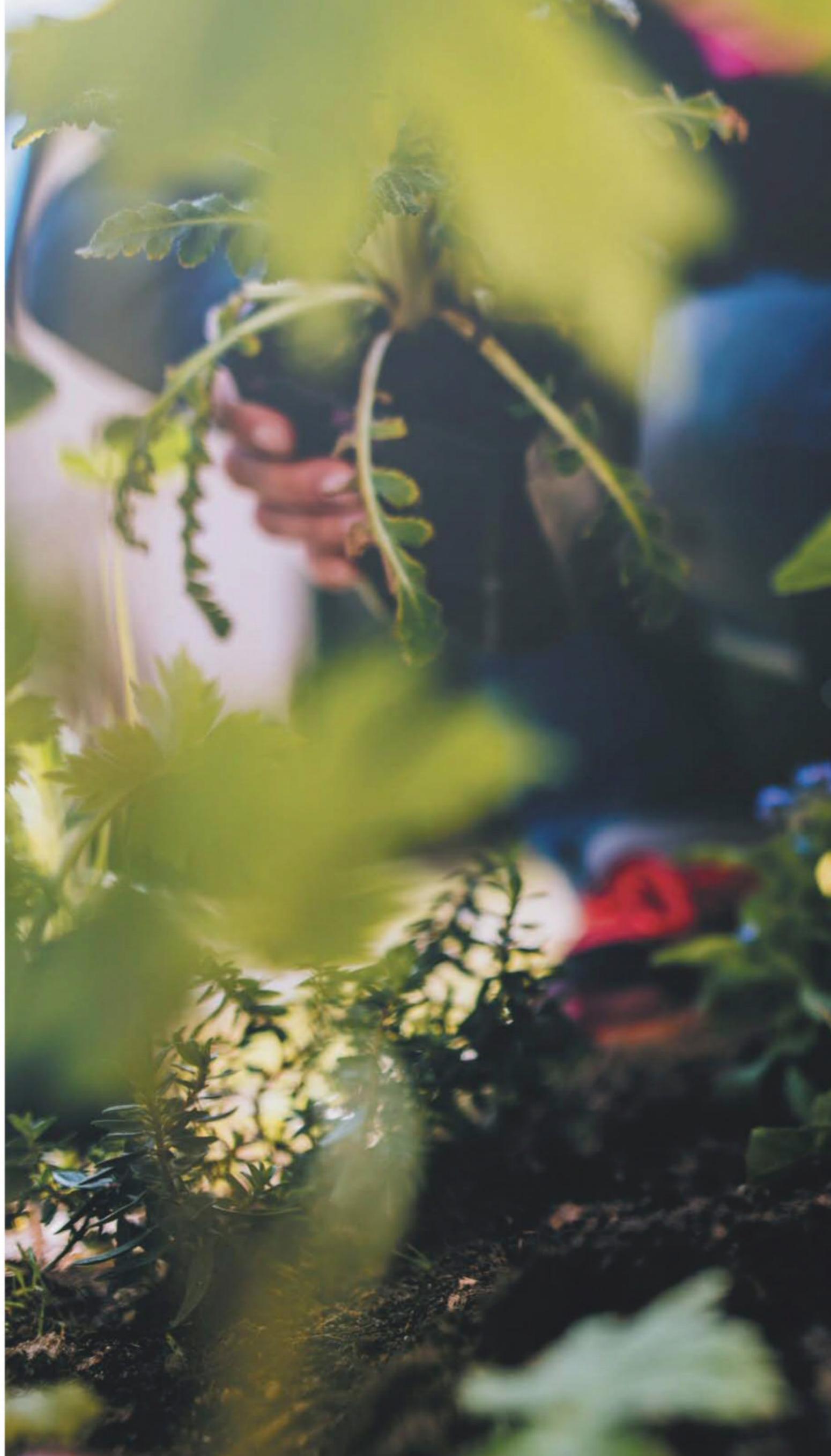
According to Julie Balaa, a board member of the nonprofit WTI, which has been conducting survival preparedness classes in Los Angeles for almost 50 years, Neighborhood Watch meetings are one of the best ways to be prepared for earthquakes. "Neighborhood Watch meetings give you the chance to get to know your neighbors and to explore ways to work together, especially in the aftermath of an earthquake," she explains. The same benefits apply regardless of what types of challenges you are preparing for.

"Getting to know your neighbors, and working with your neighbors, is perhaps one of the most important ways to be ready for an earthquake," says Balaa. She quickly adds that there are many economical ways to be ready for a quake, methods that have been taught in her nonprofit's seminars since the mid-1970s.

While no one disputes that money can help you be more prepared, it's important to realize that one's survival quotient is about much more than just how much money you earn. It's about how much you know, how you use that knowledge, and how you work with others for everyone's mutual benefit.

### **WATER**

According to Balaa, "You never know





**DEALING WITH DISASTERS ON A BUDGET**

BY CHRISTOPHER NYERGES

# SIMPLE AND THRIFTY PREPS

# SEASONS FOR DISASTERS



## EARTHQUAKES

Earthquakes have no season and strike with little to no warning.

## FLOODS

Though there is no season for floods, though most occur in relation to exceptional snow melts and high rainfall, and after wildfires where the groundcover has been burned.

## HURRICANES

The official Atlantic, Caribbean and Gulf of Mexico hurricane season is from June through the end of November. The eastern Pacific hurricane season runs from mid-May through the end of November.

## MAN-MADE DISASTERS AND EMERGENCIES

These threats have no seasons, so you need to stay alert to the news and be aware of potential social and political friction points in your area, such as court cases and elections.

## TORNADOES

Tornadoes can occur at any time but the peak tornado season for the Southern Plains is from May into early June. On the Gulf Coast, it is earlier during the spring. In the Northern Plains and Upper Midwest, tornado season is in June and July.

## TSUNAMIS

These may occur after an earthquake, near the shorelines up to thousands of miles from the quake.

## WILDFIRES

These can occur anytime when conditions of low humidity, low precipitation and high availability of combustible brush are present and are most common in the western part of the U.S. Typically, they peak in the late summer and fall.

precisely what might happen in an earthquake or other disasters, but there are some things you can always expect. For example, you can expect electricity to go out and for water supplies to be sporadic.”

It's imperative to store water in your home if you don't have a well on your property. Most people these days are getting piped water from somewhere afar. If you live in the northeastern U.S., in general, you're water-rich. But if you live in the Plains, the Southwest, or California, you should always

➤ *Right: Water is essential to life, so keep several gallons on reserve in case utilities stop working during a disaster.*



**“PREPAREDNESS IS A STATE OF MIND. AND JUST HAVING LOTS OF GEAR – EVEN REALLY GOOD AND EXPENSIVE GEAR – DOESN'T NECESSARILY MAKE ONE FARE BETTER IN EMERGENCIES.”**

be concerned about water.

Balaa suggests that every household store as much water as possible, even in areas where it doesn't seem like water will be an issue. In the case of Los Angeles, about 75 percent of their water comes from about 300 or more miles away. “With only about a quarter of our water coming from local water, it makes sense to store water,” she explains. In the seminars conducted by her nonprofit corporation, they instruct how low-income people can store water without having to buy expensive water containers.

Plastic and glass beverage containers can be cleaned out and filled with tap water or filtered rainwater and stored for future use. This includes food-grade 3- to 5-gallon buckets, which the food industry (such as bakeries) routinely discards. These buckets are easily cleaned and filled with water. This also includes all glass and plastic liter-size juice and



➤ *Near right:* Julie Balaa (left) shows student Michael McKenna some of the wild foods that occur naturally on the non-profit's property. Learning to identify wild foods wherever you live helps to increase your survival quotient.



water containers, which can be easily cleaned, and filled with tap water. A little bleach can be added to each jar – just a few drops – in order to retard the growth of algae in storage. The Centers for Disease Control and Prevention (CDC) published a guide that describes options for providing safe drinking water at home. (See SOURCES section for link)

Since government response time in emergencies can be two weeks or more, they advise people to store as much as two weeks' worth of water in whatever appropriate containers you have.

How much water should you store? Though FEMA likes to say that you should store 1 gallon per person per day, that is really wholly inadequate for all daily needs, and after

◀ *Above:* The loquat tree is easily grown and drought-tolerant. It is often grown as an "ornamental" that provides food. The fruits are delicious and are often made into jam.

an emergency, there will be cleaning to be done and you may also have first-aid water needs. A U.N. study once reported that the average human actually needs, for all uses, slightly over 11 gallons of water a day. If you do the math, that means that for a family of four, you need 308 gallons of water for one week! While that might sound like a lot, that is way below what an average American family of four uses in normal times. Yes, you can always get by on a lot less than you can when times are normal, but the message is that you should store as much water as you possibly can.

Did you ever notice how all the bottled water from the stores is gone quickly as a storm advances? If you plan ahead, you won't have to be a part of the panicked mob.

## FOOD

Food storage is also a part of their earthquake seminars, such as storing canned goods and dry goods (beans and pasta, for example) that do not require electricity for storage.

Perhaps the best principle of food storage is summed up in "store what you eat, and eat what you store."

A family on a budget is not likely to be able to go out and buy a year's supply of food, but they can constantly buy a little extra each week so that a significant supply is gradually built up. By using coupons and buying in bulk, you can save money on canned goods and dry goods – foods that do not need refrigeration.

It is also recommended that everyone grows at least some of their food, so fresh food is always available. This includes vegetables and greens, which can be grown in most backyard gardens. Also, the food supply is increased by regularly replacing

◀ *Left:* By continuously growing some type of food, they will always have food available, emergencies or not.



◀ *Left:* To prepare for an emergency, stock up on canned goods, and dry goods (beans and pasta, for example), that do not require electricity for storage.



◀ *Left:* Julie Balaa shows a pot she's been cooking in a solar oven. If electric and gas service goes out, solar ovens are a viable way to cook meals on sunny days.

➤ *Above:* Julie Balaa cooks in a Sun Oven brand solar oven.

ornamental hedges and trees with those that produce food, such as citrus trees, avocados, loquats, edible cacti, figs, grapes, apples and even roses.

"Did you know that the rose petals and rose fruits are edible?" asks Balaa.

And you can never have too much food. Keep in mind that in the aftermath of an earthquake, you could also



◀ *Above:* An old wood stove in the yard is the backup stove for cooking.

## SOURCES



### American Red Cross

Find out where you can take an emergency first-aid course in your community.  
RedCross.org

### Centers for Disease Control and Prevention (CDC)

Learn different ways to make water safe with "A Guide to Drinking Water Treatment Technologies for Household Use"  
[https://www.CDC.gov/healthywater/drinking/home-water-treatment/household\\_water\\_treatment.html](https://www.CDC.gov/healthywater/drinking/home-water-treatment/household_water_treatment.html)

### Community Emergency Response Team (CERT)

CERT builds essential skills and capabilities among volunteers to prepare for and respond to any disaster. There are CERT programs in all 50 states and many tribal nations and U.S. territories.  
Ready.gov/cert

### FEMA

The Federal Emergency Management Institute offers information and training for individuals and communities.  
Training.fema.gov

### Lehman's for a Simpler Life

(800) 438-5346  
Lehmans.com

### National Severe Storms Laboratory

NSSL.noaa.gov

### Neighborhood Watch

Learn how to participate in the program that began in 1972 with funding in part by the National Sheriffs' Association.  
NNW.org

### WTI

This Los Angeles-based nonprofit has been teaching survival education since 1971. Earthquake-preparedness seminars and other seminars are scheduled throughout the year.  
(323) 620-4720  
WTinc.info



◀ *Above:* A circle of rocks, a rack and a pot makes for an impromptu backyard cooking area.

**“YOU NEVER KNOW PRECISELY WHAT MIGHT HAPPEN IN AN EARTHQUAKE OR OTHER DISASTER,” SHE EXPLAINS, “BUT THERE ARE SOME THINGS YOU CAN ALWAYS EXPECT.”**

trade and barter some of your excess food for other supplies. Balaa took a moment to show how some of the wild and cultivated plants on the nonprofit’s property were also medicinal and edible. These were all extremely easy to grow, and would be useful as articles of trade such as aloe plants, Peruvian mint and green onions.

### COOKING

Day in and day out, everyone is cooking meals all day long. One thing you can be sure of: if there is a natural disaster, you’re still going to make the time to have meals. And quickie meals and MREs are going to get old in a hurry. Plan ahead so you can always eat well. That will go a long way toward giving you a good state of mind.

Obviously, you’ll need to have stored water, food, pots and alternatives to your kitchen stove.

An alternative to your gas or electric stove needn’t be complicated nor expensive. You can get an old barbecue grill for next to nothing. In fact, I have one that cost me nothing! A neighbor put theirs in their trash, not because anything was wrong with it but because they upgraded to a better one. That barbecue still serves me well. I cook on it sometimes with charcoal and most often with little pieces of twigs and scrap wood that I’ve accumulated from the yard.



◀ Above: Food dehydrators allow you to dry your own food for future use, whether that’s for regular consumption or in preparation for emergencies.

Other low-cost stoves include a hibachi or just a circle of blocks on a concrete surface, with a grill over the rocks for cooking.

I also have a few Coleman stoves that I’ve obtained for camping. These do require the purchase of fuel, but the fuel lasts a long time and is not expensive.

I suggest that you practice cooking in your backyard at least once a month just to get used to the idea of trying something different.



◀ Far left: Wild-food outings conducted by the author provide students an opportunity to learn about wild foods and how to prepare them into meals.

◀ Near left: A Coleman stove is a good investment for camping or as a backup when power goes out.

› *Near left:* A simple toilet seat that fits over a 5-gallon bucket is perhaps the easiest low-tech toilet alternative. Contents are then bagged and discarded or buried.



› *Far left:* This sink was set up outdoors for washing. Its wastewater is recycled into the yard.



## ELECTRICITY

A family on a budget is not likely to be able to invest in solar panels, batteries and an inverter for a backup power system. But that doesn't mean that no action can be taken.

"We encourage everyone to have as many manual appliances as possible," suggests Balaa, referring to manual kitchen appliances (such as coffee grinders, orange squeezers, cheese graters and other tools), manual yard equipment (do you really need a blower and weed whacker? What about using the old-fashioned broom?), and gather as many battery-operated appliances as possible, particularly if you can acquire a solar battery charger.

Even in urban areas, there are many tasks that simply do not need to be done with electricity. In other words, if you don't buy an electric can opener, an electric orange juicer, an electric coffee grinder or an electric blower, you won't be hooked on those devices and will just carry on fine with your manual devices when the power goes out.

Although it may seem initially more expensive, it pays to purchase rechargeable batteries for appliances (such as lanterns, flashlights, drills, kitchen tools), and at least one solar battery recharger so you can always recharge your batteries from the sun.

## TOILET

The toilet is often the area that is most sensitive to the attendees of the WTI seminars and should not be ignored. According to Balaa, if your sewer line is not broken, you could still use your toilet by pouring

wastewater into the toilet to cause it to flush. Otherwise, there are a variety of toilet alternatives, such as hospital porta-toilets, and compost toilets.

Though there are many possible alternatives to the standard indoor flush toilet, the practicality may depend on how much yard space you have.

A simple solution is to get a hospital portable toilet and use it if your flush toilet isn't working. The contents can then be bagged or buried in the yard. To save money, there's no need to buy a new one at a medical supply store. Simply shop around at yard sales or thrift stores. Most people buy these only if they have an elderly family member, and once that individual



› *Far right:* This Dietz oil lantern cooker provides light and a way to heat your food when the grid goes down. Any time you can combine multiple functions, especially where the expenditure of energy is concerned, is a big bonus.



**“BALAA SUGGESTS THAT EVERY HOUSEHOLD STORE AS MUCH WATER AS POSSIBLE, EVEN IN AREAS WHERE IT DOESN'T SEEM LIKE WATER WILL BE AN ISSUE.”**



dies, they just give the toilet to a thrift store. I have purchased these for as little as \$5 to \$15.

### MEDICAL ISSUES

“Medical emergencies could be common,” warns Balaa, so she suggests that everyone maintain a simple first-aid kit to deal with cuts, burns and abrasions. Most of the contents could be purchased at a dollar store, and Balaa highly recommends that everyone take an emergency first-aid course with the Red Cross.

Don't get your medical information from YouTube. Take the Red Cross course and take a renewal class every few years.

### WASHING CLOTHES

Everyone these days washes clothes with an electric washing machine and electric or gas dryer. Well, just about everyone. Have you ever driven through rural Ohio or Pennsylvania

where the Amish live? Clothes are washed by hand, often with the help of various tools that you can find in a Lehman's catalog. And they dry their clothes – even in winter – on “solar clothes dryers” – clothes lines! You can do the same.

### SUMMARY

“We should never be complacent here in L.A.,” says Balaa, “because an earthquake and other disasters could strike at any moment. But if we get to know our neighbors and all work together, we might all be able to survive such an emergency with strength.” If prepping becomes part of your daily routine, it becomes easier to integrate preparedness into your budget and lifestyle. **ASG**

◀ Far left top and bottom: Every now and then, practice washing and drying your clothes the old-fashioned way.

◀ Below: Army veteran Mark Tsunokai shows part of the survival kit that he carries in his vehicle to ensure he'll be ready if he is caught in an emergency.

◀ Bottom: Dolores Nyerges shows a solar shower, an excellent option for heating water during camping or home emergencies.



**P**ower outages can happen anytime, and the duration may be minutes, days or much longer. As it is their business to supply power to consumers, utility companies are quick to respond in most cases – but as millions of customers in California’s more rural areas have discovered, power companies will intentionally shut off the flow of electricity for days at a time in the name of public safety.

Utility companies recommend personal power generation as a critical part of a preparedness plan, and this is especially crucial for families that include someone with medical issues that depend on devices reliant on electrical energy – be it an electrically powered oxygen concentrator or a refrigerator for insulin.

### SIZE MATTERS

Large standby generators are employed by hospitals, municipal buildings, public safety departments, as well as many businesses and homes to cope with power outages. These permanently installed generators are driven by internal combustion engines that run on diesel fuel, natural gas or liquefied propane (LP/LPG), and the power generator system is sized to meet the demand of the facility which it powers.

On the other hand, most portable generators on the consumer market run on gasoline; but just like the big standby

***“PUTTING BUDGET ASIDE, THE FIRST CONSIDERATION IS WHAT YOU INTEND TO POWER. THE MORE DEVICES, OR THE HIGHER THE CURRENT REQUIREMENT FOR THE MOST POWER-HUNGRY APPLIANCE YOU NEED TO RUN, THE HIGHER THE OUTPUT CAPACITY OF THE GENERATOR MUST BE.”***



# MORE POWER!

HOW TO SELECT THE RIGHT GENERATOR  
FOR YOUR NEEDS

BY JIM JEFFRIES



© GETTY IMAGES

generators that automatically start up and kick in when grid power is lost, portable generators must be sized to meet the load they are intended to power – be it just an essential appliance plus a few lights, or an entire home including the HVAC system, electric range, water heater and dishwasher. There is no one-size-fits-all solution, and the price range for portable generators runs from a few hundred dollars to several thousand. Choosing the right portable generator for your needs requires a good deal of consideration, some calculation, and a bit of speculation.

Putting budget aside, the first consideration is what you intend to power. The more devices, or the higher the current requirement for the most power-hungry appliance you need to run, the higher the output capacity of the generator must be. Also, appliances such as electric clothes

› *Right:* During a widespread power outage caused by hurricane Sandy in 2012, residents lined up at New York National Guard Armories to wait for fuel, provided by FEMA, to run their generators. U.S. Army Photo by Sgt. 1st Class Jon Soucy (DVIDS)

› *Below right:* Public safety facilities and many businesses use diesel standby generators to maintain operations when utility power is lost.



dryers and central air conditioning compressors (the part outside of your house) usually require 220-240 volts alternating current (AC) to operate, so the generator must be able to supply the proper voltage in order to run those devices; not all portable generators have this capability.

### PORTABILITY

Another issue to consider is your portability requirement. If the generator will be moved from place to place around the home or property, wheels make that process easy; trans-

# TYPICAL POWER REQUIREMENTS



Device or Appliance	Running Watts (approximate)	Starting Watts
60-watt incandescent bulb	60	60
Kitchen toaster	1,200	1,200
1,600-watt radiant heater	1,600	1,600
Refrigerator or freezer	200	1,200
10,000-BTU air conditioner	1,500	2,200
1,000-watt microwave oven	1,000	1,000
¼-horsepower furnace motor	600	1,000
Electric clothes dryer (240 volt)	5,400	6,800
Well pump (1/3 HP)	800	1,300
Laptop computer	200	200
Water heater	4,500	4,500
Cellphone charger	15	15



› *Above:* Massive diesel engines power emergency generators like this to provide power to hospitals during power failures.



◀ *Far left:* Portable generators are a convenient AC power source when camping or for keeping critical appliances going during power outages. Even a small 2,000 watt generator can power a refrigerator to prevent food and lifesaving medications from spoiling.

◀ *Near left:* Standby generators fueled by diesel, natural gas or liquid propane (LP) and installed by homeowners to cope with power outages are increasingly popular.

◀ *Below:* Utilities advise customers to include emergency generators as part of their preparedness plan.

porting a generator over longer distances means lifting it into the back of a truck or onto a trailer. High-output generators (10,000 watts and up) can weigh in excess of 200 pounds, making them difficult to load even if an extra set of hands is available. These heavy generators often have lifting eyes on top allowing them to be loaded with the help of a winch and an overhead support such as a stout tree branch.

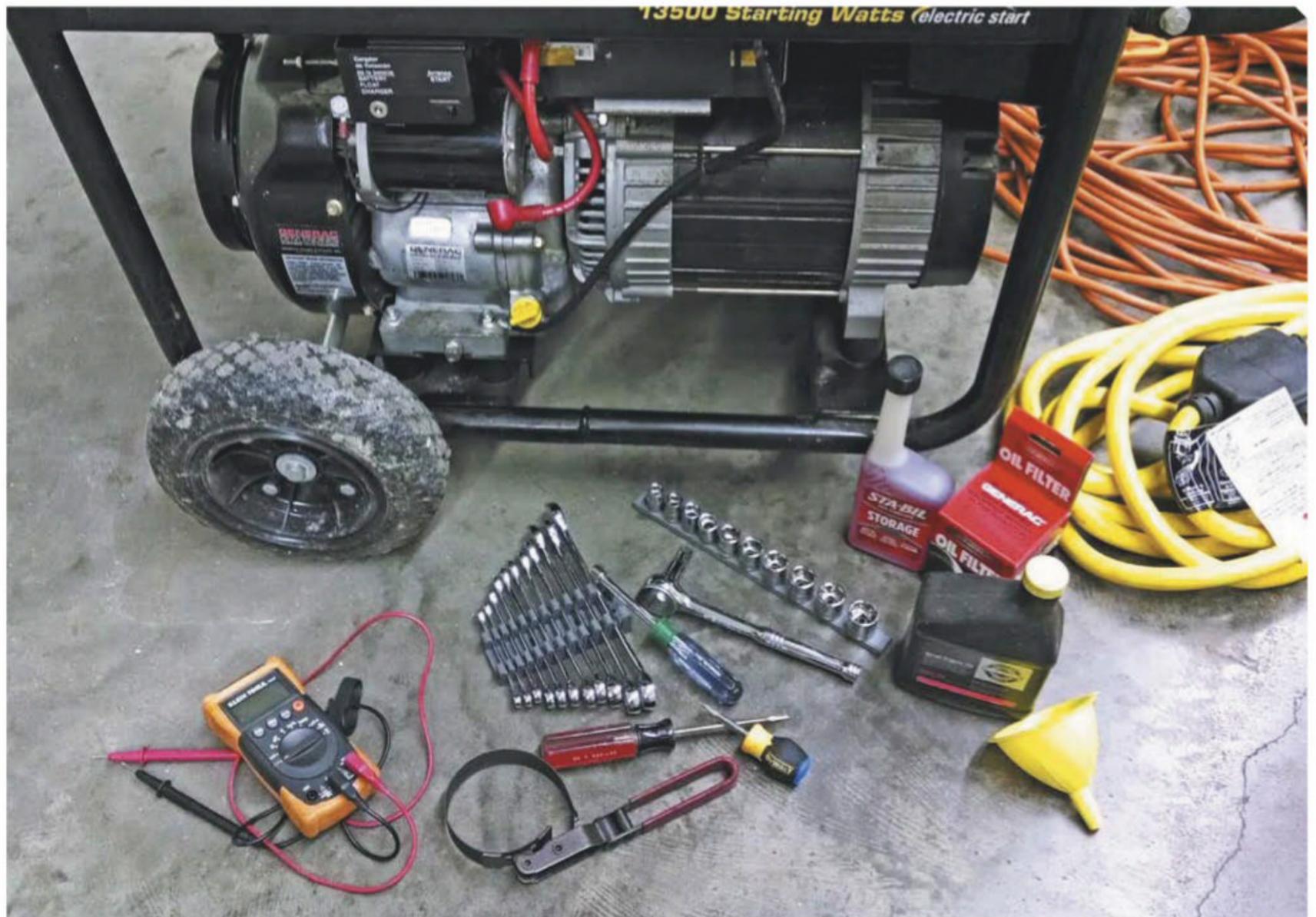
### FUEL CONCERNS

Fuel storage is another consideration. In a long-lasting power outage, fuel may become scarce, so you could find your power production capability limited by what fuel you have on hand. Gasoline, if stored improperly, will start going bad in as little as a few weeks but could last six months or more under the right circumstances. However, if it is prop-

erly stored and treated with a stabilizing additive, it can be good for a year or longer. Rotating fuel out of storage and into your vehicle's gas tank will ensure fresher gasoline is available for your generator when needed. Unless you are expecting to need to run the generator within the next few days, or you test it regularly, it is best not to fill the tank; fuel remaining in the tank, fuel lines and the carburetor will go stale and gum up the components, which can



› *Right:* It takes more than gas, oil and some cords to get dependable power from a portable generator. These are some of the tools and accessories you'll need to keep your generator operating and efficient when the grid lets you down.



put your generator out of service.

### MORE POWER?

To figure out how much load you plan to power, go through your home and add up all the devices you wish to use: water heater, central heating and cooling, electric stove, microwave, light bulbs, security

system, etc. Write down what their current draw is (in amps), or specified wattage, according to the labeling on them. While this may seem rather straightforward, it can get a bit complicated.

Generator output is normally stated in watts, and many electrically powered devices have their wattage specification clearly marked on their packaging or label, but some only display amperage; to determine how many watts an appliance or other device uses, multiply the amps by the voltage, as listed on the label. For example, if a product uses 5 amps at 120 volts, you multiply 5 by 120 to find it consumes 600 watts. Powering three

› *Right:* Wheels make the task of moving the heavy generator from storage to the deployment location easy. Wheels are typically included from the factory, but sometimes they are optional add-ons.



› *Far right:* Larger high-output generators can easily exceed 200 pounds, and often have a lift-point for safely hoisting them up into a vehicle or trailer.



**“UTILITY COMPANIES RECOMMEND PERSONAL POWER GENERATION AS A CRITICAL PART OF A PREPAREDNESS PLAN, AND THIS IS ESPECIALLY CRUCIAL FOR FAMILIES THAT INCLUDE SOMEONE WITH MEDICAL ISSUES THAT DEPEND ON DEVICES RELIANT ON ELECTRICAL ENERGY...”**

such devices at the same time would consume 1,800 watts, or 1.8 kilowatts (kW) – a relatively inexpensive 2,000-watt (2kW) generator would handle such a load with ease – but it isn't always that simple. The type of load connected to the generator must also be taken into account. Purely resistive loads, like the elements in an electric water heater, are a constant load that is either on or off, whereas the compressor motor in your central air conditioner and the blower motor that moves the air through your vents are inductive loads. They may draw 10 amps when running but require two or three times that to start up; they require this extra surge of power for only a few seconds as they come up to speed, but the generator must be able to meet this demand in addition to the normal running watt load.

If you don't enjoy math, you can always use one of the many online calculators or tables that list the average power requirements of typical appliances. Just be sure to add a little extra overhead for things you may have forgotten to include ... such as your neighbor's electric lawn mower.

Now that the power requirement in watts is known, you can find a suitable generator to meet that demand. The watt rating on any particular generator will be stated in two different numbers: 1, the running watt rating – the maximum power output it can sustain indefinitely; and 2, the starting (or surge) watts rating – the amount it can supply for short periods of time without stalling or suffering damage.

Powering your whole house with a portable generator is possible and practical.



◀ Above: Untreated gasoline left in the tank can gum up the fuel system. It may be possible to drain the tank by disconnecting the fuel line at the shutoff valve.



◀ Above: Operate your portable generator away from any inhabited structures, and refuel a gasoline generator only after it has been shut down and cooled off.



◀ Near and far left: The 15-horsepower engine on the author's portable generator has proven extremely reliable. With regular maintenance and only using clean, quality gasoline, generators can last almost indefinitely. Follow the instructions in the owner's manual for safe, reliable operation.





**“DEPENDING ON THE SIZE AND LOCATION OF YOUR HOME AND THE LEVEL OF COMFORT YOU WISH TO MAINTAIN, A GENERATOR OF 10,000 TO 15,000 WATTS WILL PROBABLY BE ADEQUATE.”**

Depending on the size and location of your home and the level of comfort you wish to maintain, a generator of 10,000 to 15,000 running watts will probably be adequate.

### **SAFETY FIRST**

Connecting a generator to the home's wiring comes with an added concern – keeping your generator from back-feeding into the utility lines. Any electricity you may inadvertently put back into the lines poses an extreme hazard to linemen who may be working to restore power. Installation of a transfer switch between your power meter and your breaker box allows you to safely switch from utility power to generator while preventing electricity from flowing back out through the lines. It also keeps utility power from coming straight into your generator when grid power is restored.

If you are powering only essential devices, quality extension cords are certainly an option. Portable generators typically have multiple 120-volt outlets, and those that provide 240 volts will sometimes come with a heavy extension cord that splits into multiple 120-volt outlets, allowing you to power several 120-volt devices from the single 240-volt outlet.

Never, under any circumstances, run a portable generator inside your home or in any enclosed space. The exhaust from the engine contains carbon monoxide – a deadly byproduct from the combustion of fuel. When you're running one outdoors, be sure the exhaust cannot enter the dwelling through any windows, doors or fresh-air intakes.

◀ *Left:* Having a generator and adequate fuel on hand before bad weather or an emergency strikes can provide peace of mind. Photo by Rob Foldy/Getty Images

# SOURCES GENERATORS

## BRIGGS & STRATTON

**Briggs & Stratton Corporation**

(800) 444-7774

BriggsAndStratton.com

## CHAMPION PORTABLE GENERATORS

**Champion Power Equipment**

(877) 338-0999

ChampionPowerEquipment.com

## GENERAC PORTABLE GENERATORS

**Generac Power Systems, Inc.**

(888) 436-3722

Generac.com

## HONDA GENERATORS

**American Honda Power Equipment Division**

(770) 497-6400

PowerEquipment.Honda.com

## WESTINGHOUSE GENERATORS

**Westinghouse Outdoor Power**

Telephone: 855-944-3571

WestinghouseOutdoorPower.com

## PROPANE AND NATURAL GAS ADAPTER KITS

**U.S. Carburetion**

(800) 553-5608

USCarburetion.com



## INVERTER GENERATORS

Until fairly recently, portable generators were notoriously noisy contraptions, but advances in inverter generators have changed that characteristic drastically. While the larger, higher output-capable traditional portable generators have to run at a constant speed to produce a clean alternating current at the desired frequency (60 hertz in the United States), inverter generators produce a pure AC sine wave through electronics. The principal of generating the electricity in an inverter generator is the same – spinning an alternator – but the AC is first converted to direct current, or DC, and then transformed back into alternating current at precisely 60 hertz. The engine has to run only as fast as necessary to meet the power

› When power demands exceed the capacity of an inverter generator, a second compatible unit can be connected in parallel to double the power output. This feature is becoming common across the major brands.



› Above: Small in size but big on power, inverter generators are perfect companions when camping, and their low noise level won't disturb others. They are also quite capable of powering essential appliances at home when utility power is out.

requirement of the attached load; when the load is light, such as when running a few light bulbs, the engine runs at a low rpm. As the load increases, such as when higher current is demanded for starting the compressor on a refrigerator or air conditioner, the engine revs up to provide more power, and then slows back down to match the lower running load of the appliance. Not only are inverter generators much quieter, they can be significantly more fuel-efficient.

Physically smaller and lighter in weight than traditional generators, inverter generators are usually rated toward the lower end of the power spectrum. At the time of writing, the largest commonly available inverter generator maxes out at 7,000 watts surge capacity, 5,500 watts continuous. However, many inverter generators can do something their larger



**“UNTIL FAIRLY RECENTLY, PORTABLE GENERATORS WERE NOTORIOUSLY NOISY CONTRAPTIONS, BUT ADVANCES IN INVERTER GENERATORS HAVE CHANGED THAT CHARACTERISTIC DRASTICALLY.”**



cousins cannot do – run in parallel. Since the output is controlled electronically, the output of one is synchronized with that of the other, making it possible to connect two compatible inverter generators together to produce twice the power. Of course it costs twice as much plus the cost of the optional parallel kit, but it is a feature that puts miniature powerhouses back in the big league. While the cost of an inverter generator is considerably higher than that of a traditional generator of the same output capacity, the benefits of being super compact, quieter running, offering higher fuel efficiency and superbly stable power output justifies the price for many.

### **FUEL OPTIONS**

A growing trend in portable generators is

multi-fuel capability. While adapter kits have long been available to run gasoline engines on propane, many manufacturers make generators that have the capability to run on gasoline or propane with no modification required. Propane is not only safer to store, as there is less chance of spilling the sealed, pressurized bottle, it also has a much longer shelf life, possibly 30 years or more. While the power produced by a gallon of propane is a bit less compared to a gallon of gasoline, the lower cost of propane in most areas can make it more economical; but even if the costs were the same, having the ability to run your generator on fuel that will likely be readily available even during widespread power outages is very much a good idea.

Diesel engines are the predominant choice for large standby emergency generators, but their use in portable generators is rather limited. Few manufacturers make diesel engines small enough to be used in portable applications. Diesel does have some significant advantages over gasoline – it can last longer in storage untreated, and it is much safer in the event of a spill, as it lacks the volatility and explosive vapors of gasoline.

Portable generators do have a place in a preparedness plan, and like anything else your safety and security may rely on, it is not a place to skimp on quality. Before investing in a generator, consider how you plan to use it and where you will store it and the fuel it requires, calculate the minimum electrical demand it must meet, and speculate on how changes in your situation might affect the choice you make. **ASG**

◀ Above: Portable generators are great on the go for providing power for fifth-wheel RV trailers.



A person wearing a large, multi-pocketed camouflage backpack is seen from the side, looking out over a vast, open field of dry, golden-brown grass. In the background, there are rolling hills and some evergreen trees under a clear sky. The overall scene conveys a sense of wilderness and survival.

# RECONCILED TO REWILD

## STEPPING BACK FROM CIVILIZATION TO SURVIVE IT

BY DANA BENNER

**R**ewilding is a term that describes the idea that if given a chance, over time everything will revert to its natural, wild state. We see examples of this in nature every day.

Many parts of the country are overrun with feral hogs, the wild descendants of domestic pigs that escaped from their pens or were turned loose. We all have seen feral dogs and cats. The wild horses of the American West are the result of domesticated horses being turned loose, beginning with colonial Spanish horses.

We see rewilding in areas that were settled then abandoned by humans and

later reclaimed by vegetation and trees. While total rewilding, especially among humans, will probably never happen, this article will look at the benefit of learning and using skills from our past that can serve us again, if the modern world goes into decline. I will demonstrate the importance of combining those skills with modern technology to ensure long-term survival.

## IN THE PAST

In the not-so-distant past, most people lived in close contact with the land. They hunted, foraged, fished, gardened and raised livestock. Each of those tasks required an intense understanding of the natural world around them and how whatever they did would have ramifications, both good and bad, on this world. To those living in the “civilized” urban end of the spectrum, the people in the rural realm were often viewed as “wild.” What the “civilized” people failed to realize was those who understood the patterns of life and learned to work within them were at a better position to survive whatever nature would throw at them.

Anyone who believes that early humans did not alter the world that they lived in to suit their needs would be dead wrong. For as long as humans have walked the Earth, they have made changes. It is the magnitude and the methods used for these alterations that have changed over time. Forests were cleared for gardens and pastures. Fire was used to manipulate hunting areas, and waterways were harnessed to suit humans’ needs. Because alternations were made on a small scale and over a long period of time, those areas soon rebounded, or rewilded,

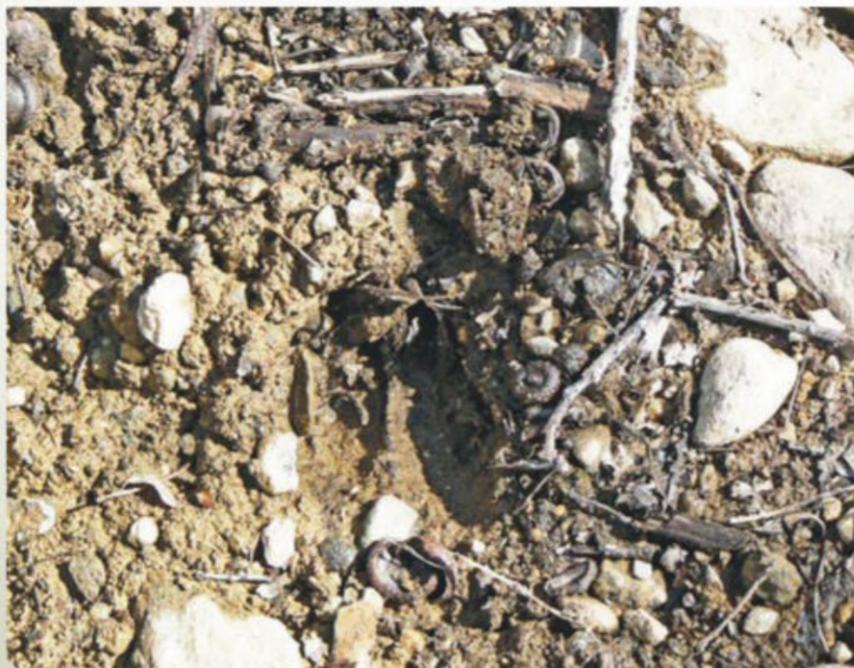
➤ *Right: Assuring food for the future: A banana tree is being planted in Hawaii. Photo courtesy of Steve Sakala*



➤ *Right: Growing your own food is a skill that many avoid. It is starting to become more common as concerns about food safety and quality increase.*



➤ *Bottom left: If you saw this deer track in the mud, could you tell how big the deer is and which way it went? This is one of the lessons from the old days that you should make a point to learn.*



◀ *Near left: What do these tracks tell you? A class on animal tracking and experience in the field will tell you this was a rabbit being followed by a bobcat.*

after they were left to do so. The often-hard-to-find remains of old farmsteads established in the 1800s and early 1900s and then abandoned are evidence of this rewilding.

The skills needed to survive in those earlier times seem to have taken on the characteristics of those long-abandoned farms. Not used, the skills faded to the deep recesses of a shrinking number of minds and to the pages of books. Skills such as woods lore, hunting,

fishing (for food) and gardening (food, herbs, medicines) have all greatly diminished from their height of more than a century ago.

## TODAY

We live in a privileged part of the world. We get our food from a grocery store, having no idea where it came from or how it got there. If we do hunt and fish, it is often for sport. Growing our own food is, for many, a thing of the past. The fruit, vegetables and meat we eat are produced on large factory farms that overwork the land and use chemical fertilizers, herbicides and steroids to meet their production goals. We have become victims of corporate farming because our hands stay clean and our food is cheap this way.

Thankfully, there are still people out there who not only remember the old ways, but practice them as well. Better yet, many of them are willing to share what they know with those who are willing to listen and learn and do the work. Many of these teachers are people whose work fills the pages of this publication and others; people such as Kevin Estela and Christopher Nyerges.

It can be reasonably said that those who are willing to learn the skills and lessons of the past are going through a rewilding experience. But are they taking a step backward or ensuring that they can move forward as they acquire these skills? Yes, times have changed, but humans have always learned to adapt and overcome. At one time that meant creating modern methods to achieve our desires but rewilding means melding current and past methods to meet our needs. We will incorporate the new with the old to come up with something better to ensure our survival.

***“THANKFULLY, THERE ARE STILL PEOPLE OUT THERE WHO NOT ONLY REMEMBER THE OLD WAYS, BUT PRACTICE THEM AS WELL. BETTER YET, MANY OF THEM ARE WILLING TO SHARE WHAT THEY KNOW WITH THOSE WHO ARE WILLING TO LISTEN AND LEARN AND DO THE WORK.”***



# SCHOOLS

Survival schools are found throughout the country. Make sure you pick the right one. What follows are three that the author recommends.

### ***New Hampshire Outdoor Learning Center***

The New Hampshire Outdoor Learning Center specializes in all aspects of the outdoors and survival.

(603) 608-8673

***NHOutdoorLearning.com***

### ***Kevin Estela's Wilderness Education***

Kevin offers a variety of survival-based courses. Check out his website for courses and availability.

(860) 214-3629

***KevinEstela.com***

### ***School of Self-Reliance***

Based in Southern California, the School of Self-Reliance is run by outdoor expert and writer Christopher Nyerges.

The school offers a variety of courses, ranging from basic outdoor survival to advanced plant identification. Visit the school's website to find out more.

(626) 791-3217

***ChristopherNyerges.com***



◀ *Left:* Wild raspberries are a real treat. Knowing when and where to forage and what to look for are lessons passed on from the past.

› *Right:* Kevin Estela concentrates on consistency and quality as he teaches a lesson on how to make a net. Photo courtesy of Kevin Estela



**“IN THE NOT-SO-DISTANT PAST, MOST PEOPLE LIVED IN CLOSE CONTACT WITH THE LAND. THEY HUNTED, FORAGED, FISHED, GARDENED AND RAISED LIVESTOCK. EACH OF THOSE TASKS REQUIRED AN INTENSE UNDERSTANDING OF THE NATURAL WORLD AROUND THEM...”**

### RELEARNING THOSE SKILLS

Imagine yourself suddenly faced with a situation where there were no grocery stores. We talk about this all the time. Where would you get your food if this became the new status quo? Say there was no working power grid and no municipal water supply. How would you secure and cook your food and obtain clean drinking water? How about no more smart-phones or internet or any of the million other things that we take for granted? Would you make it? Would you survive or would you walk around like one of those zombies on television?

Do you know how to start a fire without the use of a lighter? Do you know how to set the

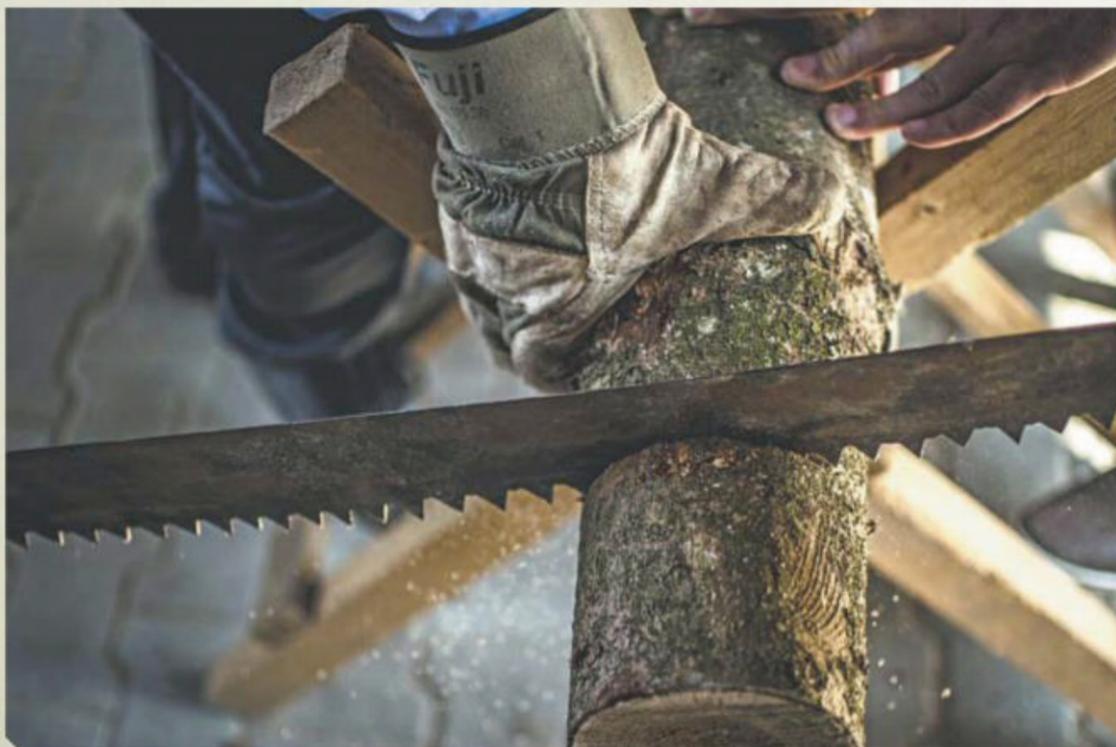
wood in your fire to get the best, most efficient burn? Do you know how to navigate without a GPS by using a map and compass or the stars? These and many more skills were commonplace in the not-so-distant past. Even in our world of handy devices, these skills, and knowing how to perform them, could mean the difference between life and death.

### WHERE AND HOW TO LEARN

I hope to point you in the right direction and give you some basics, but nothing replaces hands-on trial and error and practice. A good book such as "101 Skills You Need to Survive in the Woods," written by Kevin Estela, is a great place to start. With book in hand, actually try to do the tasks. Yes, you will make mistakes. We all do, but it is through those mistakes that we learn. It is better to make the mistakes now than to make them when the SHTF. Keep doing the task until you don't make any mistakes and then try the task in less than ideal conditions, such as in the rain or snow, under stress or in the dark.

Some people learn better in a structured environment and that is fine. There are

◀ *Above:* Kevin Estela demonstrates how to start a fire using a bow drill. You could reclaim this ancient skill with proper instruction and some practice. Photo courtesy of Kevin Estela



◀ *Left:* With the power out you may have to go back to the old ways.



to teach you how to protect yourself from a personal attack. Survival courses are geared more toward teaching you the skills that you will need to survive, such as putting food on the table and a roof over your head.

Under the survival category are those courses that offer plant identification, animal tracking and identification, bush-crafting, foraging and basic first-aid skills, and such. These are especially helpful and important abilities to acquire.

In a survival situation, it is essential to know the plants you can eat or use for medicinal purposes and which ones to stay away from. Christopher Nyerges is considered by many to be the best in this area. If you have a chance to take some of his courses, you will realize the value and practicality of rewilding. If you can't take his courses, he has put out a host of books on these and other subjects. Many of his books are part of my library, and I turn to them often.

Building and starting fires are always skills people want to learn about. I'm a big fan

◀ *Far left:* Food is always a priority. This class on building a simple animal trap enables students to improve their chances of protein procurement during austere times. Photo courtesy of Christopher Nyerges

some very good wilderness/survival schools all across the country, and chances are, there is a good one near you. That said, there are also some hacks out there, professing to know skills that they don't. Don't be fooled. Don't spend your money until you do your homework. Make sure to speak with people who have attended the school first and get references. You can often find comments and recommendations in online blogs or social media pages relating to the topic, instructor or school itself.

Don't confuse self-defense courses with survival courses. They are two different things. While some self-defense courses do include elements of survival skills, most are designed

◀ *Below:* Get your kids involved and pass your knowledge and skills to them.



# BOOKS



There is no such thing as knowing too much, and a good first step and supplement to school attendance is reading about a given topic. The author believes these five books are must-haves in your library and recommends them to get you started in your rewilding efforts.

## **Call of the American Wild**

by Guy Grieve

This is a true adventure of one man's journey into the wilds of Alaska. He knew nothing and had to learn very quickly how to survive.

408 pages

Skyhorse Publishing (2015)

**MSRP:** \$17.99

## **Foraging Wild Edible Plants of North America**

by Christopher Nyerges

This book is full of color photos and detailed descriptions that will help you identify edible plants. Many poisonous plants look similar to edible ones, so this book is a must.

224 pages

Falcon Guides (2016)

**MSRP:** \$22.95

## **Braving It**

by James Campbell

This book, which is about a man and his daughter traveling through Alaska, has valuable lessons.

384 pages

Broadway Books (2017)

**MSRP:** \$16

## **Feral**

by George Monbiot

While this book doesn't come out and discuss survival tactics, it does open your eyes to the concept of rewilding.

336 pages

The University of Chicago Press (2014)

**MSRP:** \$15

## **101 Skills You Need to Survive in the Woods**

by Kevin Estela

Kevin Estela is well known in the survival world and his book teaches you the skills you need. With Kevin's background in teaching, the key word here is "teach."

208 pages

Page Street Publishing (2019)

**MSRP:** \$21.99



› Above: As you wander through the woods, a road appears out of nowhere. It can speed your travel, but which way do you go, if at all? Learning how to use a map and compass and observing clues in the natural world will give you the answer you are looking for.

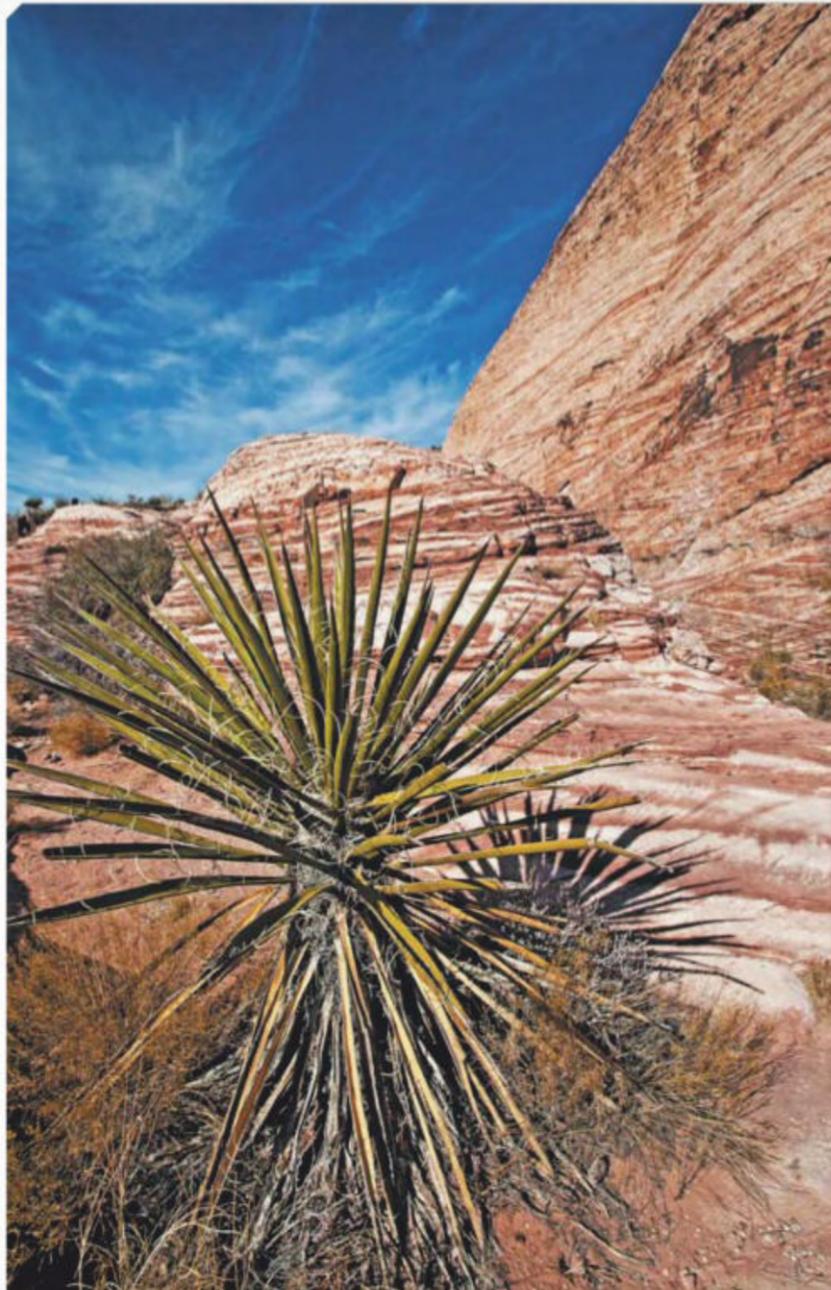
**“THOSE WHO ARE ABLE TO ROLL WITH THE PUNCHES AND CAN INCORPORATE THE LESSONS FROM THE PAST ARE GOING TO SURVIVE.”**

of the K.I.S.S. (Keep It Simple, Stupid) principle and would much rather start a fire using a lighter (or matches), but what happens if you don't have either of these? Could you step back a few thousand years in human history and get a fire going using flint and steel or by using a friction method? These methods were used long before we had lighters, and learning how to start a fire is a vital skill not only to learn, but to perfect.

Books and articles will tell you how to do it, but a class will actually give hands-on experience. The more you do it, the better you'll be and the more confidence you will have. Confidence in your skills and ability go a long way when times get bad. Classes from credible trainers will give you that confidence.



› Right: Prickly pear fruit is edible. You may not know this and ignore this opportunity, unless you took a course taught by a skilled person passing their knowledge on.



› Above: The yucca plant will yield valuable fibers used for making cordage and its fruit is also edible. Know your options before going into the field and, if in doubt, don't eat it.

### OUR FUTURE

So, in the big scheme of things, do I believe that humankind will rewild, that is, go feral? Probably not. There will always be some sort of technology available, and our social development and emphasis on living in groups will probably always remain important for our survival. On the other hand, do I believe that things will change to the point where we have to forsake some of the things that we rely upon today? Yes, I do, at least for some people. In fact, things are changing as I write this. One example is the rise in popularity of so-called tiny houses. These small shelters reduce our commitment of resources, time and space to our dwelling, greatly simplifying our lifestyle. They still provide many modern conveniences but they bring their occupants a couple steps closer to our ancestors' simpler way of life. Many also provide the option of mobility, which can be important for survival in some situations.

Those who are able to roll with the punches and can incorporate the lessons from the past are going to survive. While I would much rather start a fire with modern technology, it is good to know that I have the skills needed to do it in ways used in the past. You are not going to be able to learn everything at one time. You are better off doing one skill well than doing six halfway. Take your time, seek help when you need it, never give up and learn from your mistakes. **ASG**

**PHANTOM<sup>GS</sup>**

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# PLANT

## PREPPER PLANT ADVISOR

# GREAT IN SALADS, STIR-FRY AND AS A COFFEE SUBSTITUTE

BY CHRISTOPHER NYERGES

### Name: Burdock

(*Arctium minus*) Also known as **gobo root**

Burdock is a member of the sunflower family, one of the largest plant families in the world. There are at least 10 species of genus *Arctium* throughout Europe; *Arctium minus* is very common throughout North America.

### Description

Burdock is a common wild plant in fields, farmlands and along trails. Someone seeing it for the first time may think they are looking at rhubarb.

Burdock is a biennial, meaning that it takes two years to produce seed. In the first year, it produces a rosette of rhubarb-shaped leaves. If you've never seen a rhubarb, the leaves are heart-shaped, or broadly ovate. The stem, however, is not red, as with rhubarb, but pale green.

In the second year, the plant sends up a stalk with purple to white flowers, followed by the round burrs which contain the seeds. If you closely examine a single spine on a burr, you will see that the end is hooked, reminding you of Velcro.

### Where Found

Burdock is often found in old orchards, fields, farmlands, and disturbed soils around trails. The first burdock I ever found was in my grandfather's abandoned fruit orchard in Ohio.

### When To Harvest/Availability

Spring and summer are the best times, though the root could be collected at any time.

### Uses

The roots are most commonly used for food. They can be eaten raw when roots are young and tender. They are more commonly cooked and added to stir-fries, soups and stews. The roots are sometimes dried, roasted, and ground and used as a coffee substitute, often mixed with chicory and other ingredients.

The leaves can also be cooked and eaten.

Leaves also have some medicinal and utilitarian uses.

**PROCESSING:** Earlier roots are more tender, although I've collected older

roots too. They should be washed well, diced and boiled before eating. Add them to stews and soups. They add a potato-like starch to dishes, and a unique flavor. If young and tender, they are good diced and added to salads.

Try cooking some of the leaves for greens also. If you find them a bit strong with one boiling, change the water and give them one more boil. Season them simply with some spices, or try adding them to vegetable dishes.

To process the roots for a coffee substitute, you wash, dry, grind to a powder, roast and then percolate like regular coffee.

**MEDICINE/NUTRITION:** Analysis of the root (100 grams or ½ cup) shows 50 mg of calcium, 58 mg of phosphorus and 180 mg of potassium. A tea from the root is said to be useful in treating rheumatism.

Herbalists use burdock root and seeds as a soothing demulcent, tonic and alterative (restorative to normal health).

**OTHER USES:** Because the leaves of the first year burdock are large, they can be used to wrap fish, potatoes, or other foods that you plan to cook in a pit.

### Advice For Growing

Burdock is very easy to grow from seed or from root transplant. It likes some sunlight, and soil that is not too hard and clay-like, with good drainage.

Seeds are easy to obtain from seed and garden supply stores. Look for it under the name "gobo," since gobo is a Chinese vegetable. "Burdock" means "weed" to many, so you may not find it under that name. I also look for roots to grow at Chinese markets. If you try this, make sure there is a little green at the top of the root or it might be too old or dry to grow.

### Cautions

Burdock roots must be thoroughly cleaned so you're not eating dirt. Sometimes it's easier to just peel the outer layer off the root.

### Recipes

#### STIR-FRIED BURDOCK

This is a simple recipe and a good introduction to eating burdock. Clean the tender first-year roots and slice them into strips or into short slices (your preference).

Soak the roots in a mixture of quality soy sauce (I prefer Bragg's Liquid Aminos all-purpose seasoning made from soy protein). Avoid the soy sauces that are heavily



salted. Add a tablespoon of honey. Let this soak for about a half-hour.

Stir-fry and serve with rice.

### PICKLED BURDOCK

The tender first-year burdock is often pickled and eaten as a vegetable. The cleaned root should be parboiled first, for about two minutes. Then make a pickling brine, and add to the jar. You can use your favorite brine recipe or try this one.

### PICKLING BRINE

- 3 Tbsp mirin, a sweet rice wine
- 1 Tbsp wine vinegar
- 3 Tbsp komezu (rice wine vinegar)
- 2 Tbsp honey
- 1 tsp kelp powder

Store in the refrigerator for about two weeks before eating.

### STIR-FRY GOBO AND CARROTS

- 3 cups (approx.) of burdock roots, sliced into 2-inch pieces
- ½ cup of sliced carrot
- 2 Tbsp oil
- 2 Tbsp honey
- ¼ tsp cayenne pepper
- ¼ cup (approx.) quality soy sauce, or Bragg's Liquid Aminos
- Toasted sesame seeds

Cut the carrots and burdock roots, and soak in cold water for about a half hour. Then drain.

Stir-fry in a wok for 5 to 7 minutes. Add the honey and cayenne and mix well. Add the soy sauce. Add the sesame seeds as a topping when you're about to serve.

## About ASG's Plant Advisor

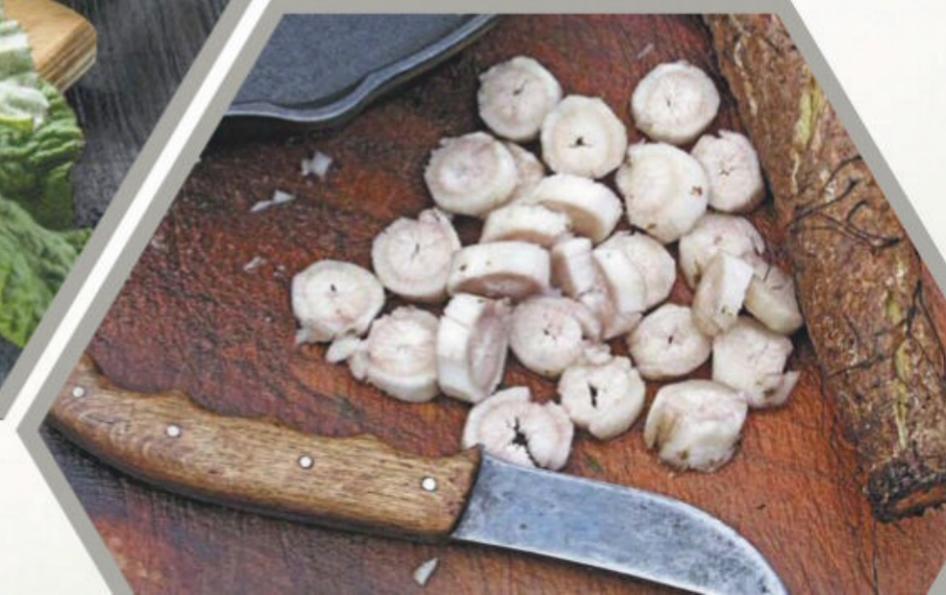
Christopher Nyerges has been teaching ethnobotany since 1974. He is the author of "Guide to Wild Foods and Useful Plants" and other books on the uses of wild plants. Nyerges has contributed many articles to American Survival Guide on a wide range of topics. He can be reached at [SCHOOLOFSELF-RELIANCE.COM](http://SCHOOLOFSELF-RELIANCE.COM).

› *Far right:* Fried burdock can be found in restaurants and on kitchen tables in Asia.

› *Near right:* Burdock leaves can be used for medicinal treatments and utilitarian purposes, such as hair care.

› *Bottom right:* The burdock root is white on the inside. Some of these diced roots were eaten raw in a marinated salad, and the rest were cooked in soup.

◀ *Below:* The burdock plant prefers fields and disturbed soils along roads and trails.



# BATTLE OF THE BUGS!

EFFECTIVE MEASURES FOR REPELLING  
NATURE'S MINI MUNCHERS

BY MICHAEL D'ANGONA



**F**or every pound of human on the planet there are nearly 300 pounds of insects – that’s a lot of bugs!

Insects are just about everywhere, and they can truly bug you when you’re deep in the backwoods or having a picnic in your backyard. From mildly annoying to stress-inducing and irritating, the buzzing and biting of flies, mosquitoes and the stinging from bees can make any situation, survival or otherwise, much worse.

Insects can also bring to you more than just an uncomfortable time outside. They can carry and transmit serious diseases, cause respiratory and other medical issues to those allergic and in many areas throughout the world, be the number one cause of death.

The key to battling these tiny attackers of your tender skin is to be prepared far before you find yourself under their nonstop barrage. From spray repellents and lotions to help you taste bad, to physical means of blocking them from entering your working or sleeping space, to electronic means to allow science to lend a hand, knowing how to stop these creepy crawlies will bring you some much-needed peace to your outdoor life.

### **DANGERS TO BE HAD**

Insect bites, aside from the obvious irritating itching, can do far more damage medically than you may think. Their harmful effects fall into two general categories, one being the effects caused by the bite itself, and the second would be the symptoms caused by the disease transmitted to a person by the insect. Both can be serious, severe and even life-threatening.

Basic symptoms from a bite include redness, blistering, swelling around the area and, of course, constant itching. If a person scratches persistently, they can bleed and the site can possibly become infected. A simple topical antibiotic usually clears up the infection within a few days.

More extreme medical conditions resulting from the bite from an insect or a venomous spider include abdominal pain, nausea, vomiting and respiratory problems. If a person is allergic to bees or the venom from ants, anaphylaxis could occur. The formation of hives, shortness of breath or wheezing is a harbinger of worse symptoms to the allergic victim. These are often followed by unconsciousness and death, which can occur rapidly, sometimes within a half-hour.

Mosquitoes, which on their own rarely cause severe symptoms or medical conditions, are the number one carrier of death through the transmission of diseases. Ticks and lice are also notorious for spreading illness and death. From West Nile virus to malaria, mosquitoes spread diseases through blood transmissions, while lice can transmit relapsing fever caused



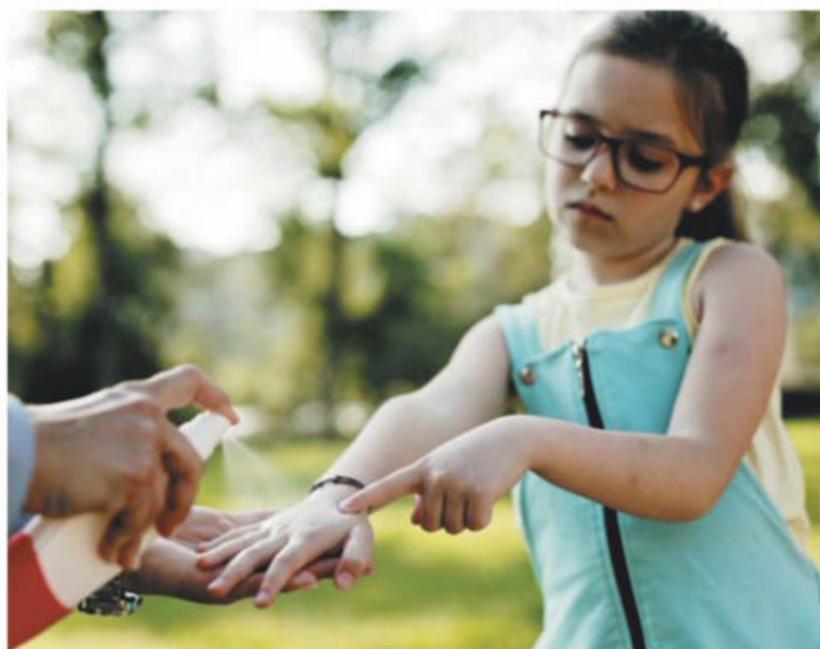
◀ Above: If the weather requires wearing shorts, be sure to spray your bare skin regularly to repel biting insects.

**“IF YOU KNOW YOUR AREA OF TRAVEL, THEN YOU CAN CHOOSE THE APPROPRIATE COLORS AND PATTERNS TO AVOID THE INTEREST OF THE LOCAL INSECTS.”**



◀ *Left:* Traveling without insect repellent can lead to a miserable outing. Always be prepared.

› *Near right:* Children playing during the summer months should be protected regularly from biting bugs with child-safe repellents.



by spirochetes, a harmful bacterium, and ticks are well-known for the transmission of Lyme disease typically found in deep woodland areas. These diseases vary in symptoms and recovery, but severe medical issues and death are common.

### **BEST CHOICES IN WARDROBE**

The clothing you choose to wear outdoors can make a huge difference between

whether you enjoy your day out or become a snack to the insects nearby.

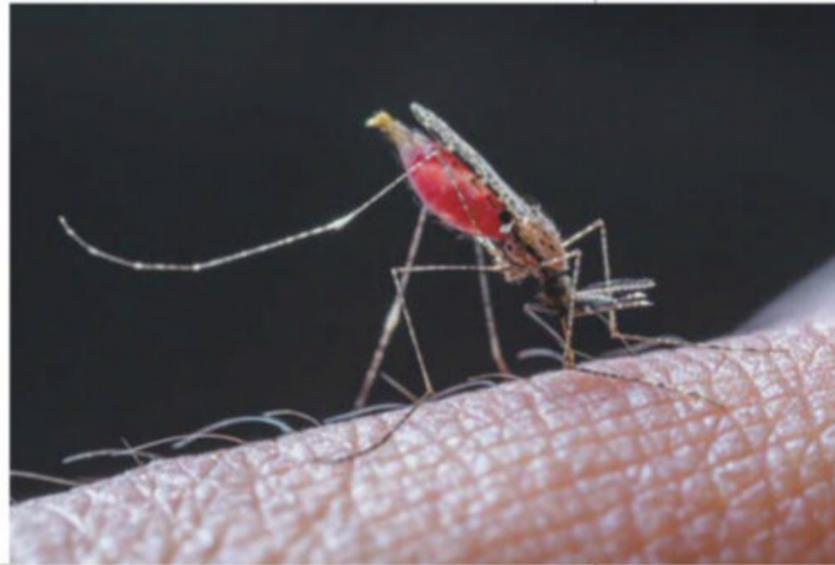
### **COLOR**

Believe it or not, the colors you wear make a significant difference in this area. If you are in bee territory, avoid dark colors and wear white if possible (notice that beekeepers wear white). Colors such as yellow, orange and blue attract bees, while dark colors make them more aggressive. Conversely, ticks seem to gravitate toward the color white, while mosquitoes tend to avoid light colors. In addition, striped clothing has been observed to distract and disorient biting flies.

If you know your area of travel, then you can choose the appropriate colors and patterns to avoid the interest of the local insects.

◀ *Above:* Insect repellent is a must when spending time near a body of stagnant water, such as a pond or lake.

➤ *Near right:* When removing ticks embedded under the skin, it's important to get the head out from under the skin level.



◀ *Above:* The body's natural reaction to insect bites includes redness and itching.

**“AFTER TIME SPENT OUTDOORS, WHETHER IN THE DEEP WOODS OR PLAYING IN YOUR OWN BACKYARD, IT’S VERY IMPORTANT THAT YOU EXAMINE YOUR BODY FOR SIGNS OF BITES (IF THE ITCHING DIDN’T GIVE THEM AWAY) AND ALSO FOR INSECTS STILL ATTACHED TO OR CRAWLING ON YOUR SKIN.”**

#### **FIT**

That depends again upon the bug. Loose fitting clothing can help to reduce bites from mosquitoes. The long proboscis of the mosquito will have trouble reaching the skin if the clothing is loose and fluffy. Alternately, pants tucked into boots, and arm cuffs closed off tight to the body help to keep ticks from accessing and embedding themselves under your skin.

#### **SCENT**

Mosquitoes are attracted to many different and somewhat surprising types of scents, so be cautious of what you spray on yourself before venturing outside. Floral scents, found in body spray or perfumes, give mosquitoes the come-get-me signal and your skin will soon be feasted upon. Leave the spray at home and your bites will likely be a lot fewer. As appealing as floral scents are, mosquitoes are also attracted to scents that would repel most humans. Sweat, stinky shoes and sneakers, and cotton socks invite mosquitoes by the busloads. This combination of odors is like an all-you-can eat buffet sign to the biting bugs. If possible, skip the socks and wear breathable sandals or flip-flops in the warm spring or summer days, unless, of course, you're hiking or working.

#### **PHYSICAL BARRIERS**

Physical barriers to keep insects out of your shelter or from reaching your bare skin should be used in conjunction with spray repellents to create the best possible defense against flies, mosquitoes, ticks, gnats and just about any biting bug.

A head net is a lifesaver from constant swatting of biting flies and mosquitoes around your face. Not only can this flying insect activity be annoying, but it can distract you as you navigate through the woods and raise your stress and anxiety levels; two things that can cause poor decisionmaking and unexpected accidents. Head nets are relatively inexpensive, so packing one in your gear bag, as well as in your jacket or pants pocket is a sound idea.

On a larger scale, a full-size mosquito net can mean the difference between a great night's sleep outdoors and eight hours of being plagued by blood-sucking predators. Netting comes in a variety of sizes and configurations, so choose the size that best fits your group's needs. In addition, be sure to carry cordage with you to secure the corners of your netting barrier. If the netting only drapes over you while you sleep, the proboscis of the mosquito can slip through the tiny screen openings and penetrate your skin.

#### **PROTECTION IN A BOTTLE**

One of the most popular and effective means to deter insects from feasting upon you is the use of insect repellents. These are available in many forms, such as sprays, lotions, and



## **THE DEADLIEST KILLER ON THE PLANET**

According to the World Health Organization, the deadliest animal on Earth is the mosquito, killing more than 1 million people every year. As a carrier of the parasite that causes malaria, which is responsible for about one-half of the total number of mosquito-related deaths, the female Anopheles mosquito is the harbinger of death in Africa, South America and parts of India and the South Pacific. It's a sad fact that a child dies from malaria every 30 seconds and unfortunately there is no malaria vaccine at this time.

The West Nile virus and dengue fever add to the mosquito's reputation of the deadliest killer on the planet. West Nile virus affects the nervous system and can become serious for people with weak immune systems, while dengue fever is often fatal if not treated properly or soon after contraction. Preventive measures such as spraying, using physical barriers and staying away from standing water that is a breeding ground for mosquitoes are just a few ways to reduce the transmission of disease. Unfortunately, the problem overall is huge as people are constantly fighting for their lives against these creatures.



◀ *Left:* Any activity, such as chopping wood or clearing brush, can disturb the inhabitants of a wasp's nest and make you a target for the swarm.

moistened treated wipes. The deterrent ingredients in these repellents also are diverse, from DEET (N,N-diethyl-m-toluamide), to picaridin, to oil of eucalyptus, to citronella to dozens of natural and home-made preparations.

DEET and picaridin are two of the most widely used ingredients in mainstream over-the-counter insect sprays and they are considered more effective than natural products. Both are applied directly to the skin. However, DEET is known to be damaging to some plastics such as eyewear frames and lenses, watch straps and components and other items commonly worn or handled while in the outdoors.

The Centers for Disease Control and Prevention (CDC) recommend both formulas to repel mosquitoes, specifically, due to that particular insect's ability to spread dangerous and, at times, deadly diseases. Overall, in a number of studies performed to grasp the effectiveness of natural and artificial repellents, DEET and picaridin scored the best with the greatest length of deterrence, while natural ingredients had a much shorter protection time.

Permethrin is an effective repellent treatment for clothing and gear but should not be applied to the skin. It has also been shown to kill ticks, mosquitoes, chiggers and dozens of other insects. It can withstand multiple launderings, and can last a number of weeks before retreatment is needed, making it a convenient option for those who go outdoors often.

Choosing which repellent is right for you and your family should be based upon a few important factors. If you have young children, the exposure to chemical repellents should be limited. Find ones that state "For Kids" or "Safe on Children" or something to that effect. Kids tend to touch their face, eyes, and mouth through-

▶ *Above:* Though technically not an insect, a spider is usually grouped like other bugs as a creepy-crawly.

▶ *Right:* A large campfire and its accompanying smoke help keep flying insects at bay while you're in the outdoors.



▶ *Right:* Be careful when walking through the woods. Stepping through a fire ant mound will cause you intense pain and nonstop itching.

out their day, so small amounts, applied by an adult, are recommended.

In addition, the location of your activities and the insects that you might encounter when outside should be taken into consideration. Some repellents are highly effective against certain insects but not others. You don't want to learn this fact when deep in the woods, for example, as a swarm of biting flies are completely unfazed by your insect spray and continue their attack on your body.

## ELECTRONIC DETERRENTS

There is much debate as to whether electronic devices placed throughout the home can



◀ Left: A simple mosquito net creates a barrier between you and biting bugs.

deter insect activity. The theory is that small electronic devices that produce an ultrasonic sound cause disruption in roaches, flying insects and even rats and mice. Lab tests show no conclusive evidence that this is an effective means of keeping pests from annoying you in your home. The overall suggestion is to skip the sound and stick with the methods proven to work effectively.

### PERSONAL BODY CHECKS

After time spent outdoors, whether in the deep woods or playing in your backyard, it's very important that you examine your body for signs of bites (if the itching didn't give them away) and also for insects still attached to or crawling on your skin. Ticks are experts at this game of hide and seek. They can crawl to areas unseen and often unfelt by their intended host. They can also become embedded under the skin without much, if any, pain and can begin to feed almost immediately. If ticks are left unnoticed, infection and disease (as mentioned earlier ticks are notorious for transmitting Lyme disease) can result. Biting flies also can evade notice by securing themselves to a human's clothing, hair or skin during mid-bite.

It's wise to take off jackets, boots and any other heavy exterior clothing prior to entering your home, to prevent hitchhiking bugs from spreading throughout your living areas. A

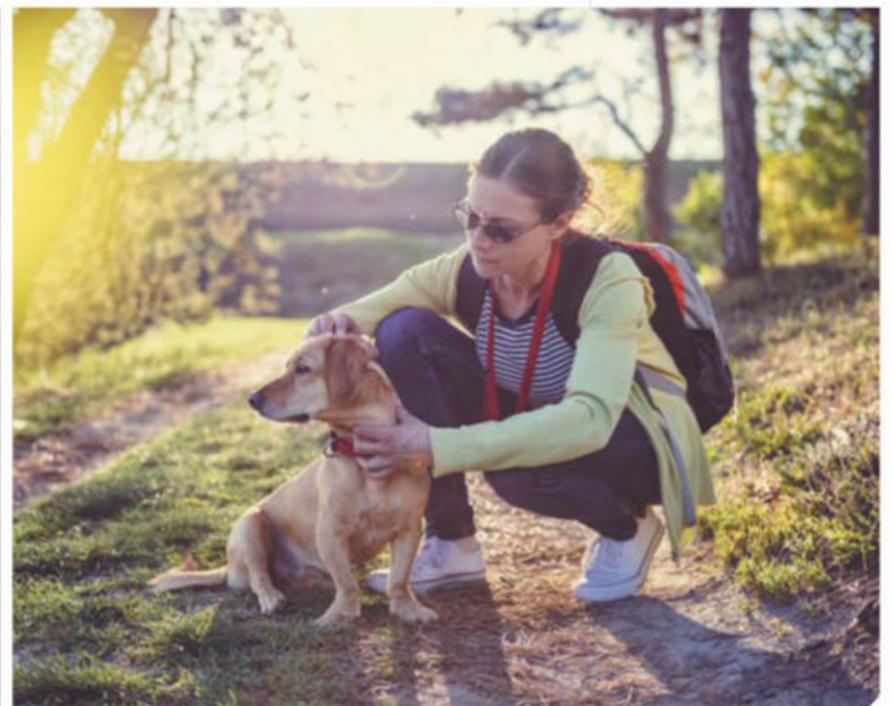
clothes dryer on its hottest setting will kill most insects that have made their way into the crevices, pockets and thick material of your clothing.

### A NONSTOP BATTLE

With an estimated 10 quintillion (10,000,000,000,000,000) insects alive on the planet at any given time, it is obvious that you can't avoid them. You can, however, use the best means to keep them away from your tasty, tender skin.

Whether you use physical, chemical or natural means to prevent them from biting you, the more you know about these creepy-crawlies the better armed you will be to stop their aggressive and persistent attacks. **ASG**

◀ Below: After walking in woods, humans and pets should be thoroughly checked for ticks and other hitchhikers before returning indoors.



# BUG BARRIERS



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## Coghlan's Head Net

### Overview

Don't go into the woods without this unless you want to swat bugs away from your head all day long. Protects against the tiniest gnats, along with mosquitoes, flies, bees and more. It's lightweight, best worn over a hat and it won't disrupt your vision.

### Specifications

- Easy to see through
- Constructed of soft polyester
- Easily fits into stuff sack when not in use
- 220 holes per square inch keeps small bugs out

### MSRP:

\$4.99

### URL

Coghlan's.com



## Sawyer Picaridin Insect Repellent Lotion

### Overview

This amazing lotion offers long-lasting protection from disease-carrying insects and is highly safe for all family members, as well as gear and clothing. When you're looking for an alternative to DEET, just rub the silky lotion on bare skin and enjoy hours of bite-free outdoor bliss.

### Specifications

- Repels ticks, mosquitoes and biting flies
- Mild citrus scent disappears when dry
- Effective for up to 14 hours
- Won't harm gear or equipment
- Box of 14 packets

### MSRP:

\$11.49

### URL

shop.BiteandStings.com



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## Coghlan's Citronella Candles

### Overview

Ideal for on-the-porch nighttime lighting and keeping bugs away, citronella offers a sweet, unique aroma as you enjoy a night under the stars. Simple yet effective, this candle can also be useful during power outages and blackouts.

### Specifications

- Repels irritating insects
- Pleasant citronella aroma
- 4- to 5-hour burn time per candle
- 6 candles per box

### MSRP:

\$6.99

### URL

Coghlan's.com

Be prepared to bite back with these useful deterrents! When you're out of the secured confines of your home you face the uncertainty of Mother Nature. However, the one thing you can be sure of when you venture into her domain is that you're on the menu of a plethora of tiny insects out for what lies beneath your skin. The only thing you can do is fight back, and these are the items that will help you do just that!.



## Sawyer Maxi DEET Insect Repellent

### Overview

When traveling to insect-infested territory, this item should definitely go with you. Sporting 98 percent DEET, this formula offers excellent repellency when facing an onslaught of biting bugs. Apply to skin, clothing, head net and more for safe, all-over protection.

### Specifications

- Protects from mosquitoes, chiggers, fleas, gnats and ticks
- Effective for up to 10 hours
- Low-odor formula
- 3-ounce size meets airline travel requirements

### MSRP:

\$10.99

### URL

Sawyer.com



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## Coghlan's Double Wide Mosquito Net

### Overview

You can't function if you can't sleep. This netting allows you a comfortable night's sleep so you're not constantly slapping biting bugs from your tender skin. Designed to protect two sleeping bags or cots, the netting will allow you and a companion to enjoy total protection all around you, held by a secure anchoring system. The rectangular net measures 78 x 63 x 59 inches.

### Specifications

- 240 ultra-fine mesh polyester netting
- 6 reinforced metal tie tabs
- Durable, mildew-resistant polyester construction
- Includes cord, anchors, hooks and nails for setup

### MSRP:

\$14.99

### URL

Coghlans.com



## Natrapel Lemon Eucalyptus Insect Repellent

### Overview

This plant-based spray repels mosquitoes for up to six hours using oil of lemon eucalyptus, the only naturally derived ingredient for bug protection that's recommended by the CDC. The pleasant scent and non-greasy formula make this ideal for children.

### Specifications

- 6-ounce continuous spray
- DEET-free
- Repels mosquitoes for up to 6 hours
- Won't harm synthetics or camping and fishing gear

### MSRP:

\$11.99

### URL

Natrapel.com

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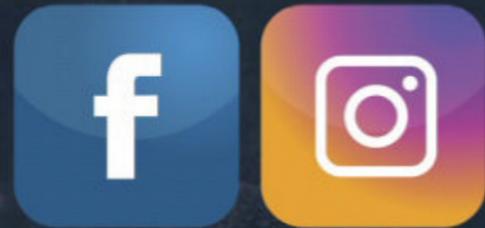
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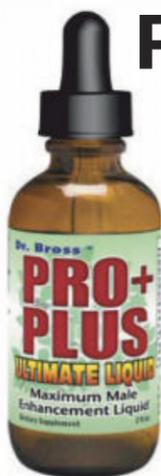
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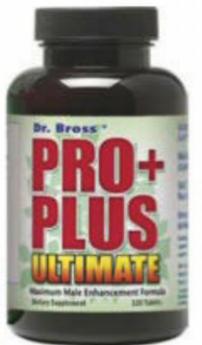
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# WORDS

LAST

## WHEN WILD WAS THE WAY OF LIFE

BY MIKE MCCOURT

**D**ana Benner's article about "re-wilding" ourselves to be ready for catastrophic changes to our way of life got me thinking, as I hope it did you. He makes a good point about the need and benefits of learning to do things without modern conveniences.

There's nothing really earth-shattering about what he suggests because, aside from our modern expectations and practices, we're not that far removed from what we consider a primitive lifestyle. In fact much of the rest of the world goes about their daily business having never known or experienced the benefits of many of the devices and conveniences most of us take for granted. Luxuries like being able to travel for hundreds of miles at a time, alone and in the quiet temperature-controlled comfort of a personal automobile are beyond imagination for hundreds of millions of our fellow humans. Yet, they get where they need to go and manage to survive the trip without the luxury of wheels.

In survival situations, one of the more profound adjustments will be to accept that our efforts will be expended to acquire things we need, not niceties we desire and that will increase or improve the enjoyment of our leisure time.

To Dana's point, however, life doesn't have to suck just because we give up some conveniences for the sake of being able and ready to take care of business when our machines cease to run. A little manual labor, using a bicycle or putting in a few more miles on our feet would probably benefit most of us, now and in the long run. One of the "benefits" of modern American life is that we have more time to do nothing and we're paying the physical price for it, which will ultimately make the sudden shock of being immersed in a survival situation that much more challenging and shocking,

both physically and emotionally.

Imagine how many trips to the creek or well and wood pile it would take to satisfy the requirement for just one of today's long hot showers. If our current source of water went down, whether it's a public utility or an electric pump that delivers it to the shower head, how long would it take before we realized we could get by without the 30-minute hot shower? We don't have to give all of that up now but it wouldn't be a bad idea to get acclimated to using less water and energy now so it's less of a jolt when it's no longer an option.

The same goes for many of the tools and devices we use around the house. I recently watched a video of a teenager who couldn't figure out how to use a manual can opener. That same kid has probably never swung a hammer, dug a ditch or changed a tire. This isn't entirely his fault; he's the product of a culture that generally doesn't value the knowledge and ability of doing manual work.

How many generations ago was it that someone in your family grew the bulk of their food, butchered livestock for meat, built, remodeled or repaired their home or handled tasks that we now pay others to do for us? It's probably just a few but, since then, we've become a nation of specialists who, typically, know little about how things work outside the requirements of our job. As long as we get a paycheck, we can get the things we need because we can hire others to process the chicken for tonight's dinner, light the house and make it possible for us to cook dinner.

It's a wonderful life, until it goes away in a collapse of services or civilization. Those who are unprepared are left without the knowledge and ability to make their way in the cold reality of a life without others doing everything for them.

Being able to do things for yourself doesn't make you wild – it makes you wise.

Thanks Dana. **ASG**

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