

Water

Aside from air, the most important resource to have in a survival situation is water.

Once someone grasps the “knowledge” of what life might be like without electricity, they quickly realize that water is the first thing on the priority list and is an absolute necessity. A human being can go without food for as long as three weeks; under harsh environments, this figure is less. Without water, however, a human cannot survive more than three days. In high heat, even less time. ***Water should be your highest priority for survival. Without water, you will not survive!***

You must find a way to secure water, whether it is from a pond, stream, river, well, lake, swimming pool (use caution for pools – they may contain unacceptable levels of chemicals for treatment) or other sources. Storing large amounts of water is only a temporary respite. Eventually you will need a regular source of water. One immediate source people rarely think about is the hot water heater in their home. This can be accessed easily with a garden hose and can yield 20 to 200 gallons, depending on the size and number of hot water heaters.

Needs

Immediate:

Adults need around 3 quarts /day, just for consumption. For the issue of planning, we will round this up to one gallon/person/day. Remember, even more water will be needed for cooking, cleaning and sanitary use. Bottled water should suffice for this time frame. Another way to provide water is to fill tubs or containers with water while it is available.

Short-Term:

For those who live where there is adequate rainfall, some type of catch collection system should be considered, e.g., runoff from gutters into collection barrels. At this point the issue of purification comes into play. Filters such as Big Berkey filters (2 filters are good for 6,000 gallons) are excellent for this task. Smaller Berkey “sport bottles” can also be used on an individual basis. You can also make your own filtration system using the filters available for a Big Berkey and 5 gallon pails available from hardware stores. Berkey is not the only manufacturer – there are other who also make good equipment. Katadyn and Sawyer also offer a variety of water purification options that would allow you to survive by drinking from mud puddles for a long time. Popular brand water filters such as Brita and Zero Water are also great options. Perhaps one of the most affordable and internationally renowned brands of water purification systems are from LifeStraw by the Vestergaard brand. The individual LifeStraw (approximately \$20) is extremely light weight and can be stored in one’s “go bag” or vehicle at all times and can filter 1,000 liters or 264 gallons of water. The LifeStraw 1.0 is another very portable and relatively inexpensive (\$75) option that will purify water for groups of people (up to

18,000 liters or 4,755 gallons). ***This equipment must be obtained before an event – it will not be available after an event.***

If you have the space and the budget, you can purchase food-grade plastic drums designed for water storage. These typically hold 55 gallons of water and with the addition of proper purification chemicals, will keep the water safe for up to five years. Remember, this is not a long term solution. Chlorine dioxide is a commonly occurring chemical and is used in many brands of water purification tablets and can be purchased relatively cheaply. Bleach (unscented) is probably the cheapest way to purify water—mix ¼ teaspoon into 1 gallon of water (strain cloudy water first through a bandana or other cloth for better results), shake and let sit 1 hour. 20 gallons of bleach from your local dollar store, less than \$1.00 per gallon, will yield approximately 42 years (RIGHT, 42 YEARS) worth of purified water for a family of 4 assuming you have access to a water source. Boiling water for about 4-7 minutes will also purify water and distillation will purify both fresh and saltwater (two 2 liter bottles, some plastic tubing and a roll of black electrical tape and sunshine is all you need for a water still). If a water source is not an option you can dig a 2 X 2 foot hole in the ground, fill it halfway with grass, leaves or any plant material containing water, place a bowl in the center and cover it with clear plastic sheeting with a rock in the center above your bowl and the sun will cause the water in the plant material to evaporate onto the plastic and drip into your bowl (a container of salt water instead of plant material will yield the same result). Lining the hole first with a Mylar survival blanket will greatly increase the evaporation rate for this system. However, this is not a long term solution and will not work well in extremely arid climates.

<http://thesurvivalmom.com/wp-content/uploads/2010/08/Comprehensive-Preparedness-Manual.pdf>

As an example, if you have a family of five (assume all adults) and your needs are a gallon per day per person (for consumption only), this is only 450 gallons of water (90 days x 1 gallon/day x 5 people). This could be easily stored in eight 55-gallon drums (rounded). Storage could be in a garage or a basement, and would not take up much room

Note that if you live in a subdivision or are on municipal water, it will stop very quickly as the pumps shut down from loss of power. You do not want to be looking for water a week into a disaster like a grid down situation without prior planning. You will not survive.

Wells, if available, are an excellent water source, as long as you have power to run the pump. Beyond the regular utilities are generators, solar panels, and manual pumps. Some solar pumps and manual pumps have depth limitations, so plan ahead with these tools:

[Deep Well Double-Acting Force Pump](#)

[Stainless Steel Pump](#)

An alternative for wells shallower (to the static water level) than about 50 feet, is to install a hand pump. For static water levels of 23 to 50 feet, you still have to remove the submersible pump. You replace it with a hand lever connected to a rod that goes down the well to actuate a submersible piston pump. This is a moderate cost but involves some work. If you have a well dedicated to the use of a hand pump, you can pay a professional to do all this work before the onset of an emergency.

[EarthStraw “Code Red” 100 Foot Hand Well Pump System](#)

Another useful device if you have a well, but no power for the pump is a length of PVC (or galvanized metal), open on one end with a ball valve on the other end called a well bucket. It can be secured by a rope/chain at the top and lowered into the well by hand. Here is a link to several such devices:

[Lehman’s Own Galvanized Well Bucket](#)

[DIY Water Well Bucket With Pictures](#)

[Emergency Well Tube](#)

Generators will be useful as long as you have a fuel supply (assuming they are still functional). Remember, you will eventually run out of fuel for a generator, so must plan beyond that. If you decide to use solar power, you will need to obtain a solar pump capable of being powered by a solar panel (see prior comment re depth limitations on solar pumps). Typically, you will need a solar panel array, a solar charge controller and a battery system to power the pump and the solar panel/battery must be capable of powering the pump. There will be more on this under **Alternative Power Sources**. Having spare solar panels and spare charge controllers is also a good idea. An inverter should also be considered as part of a solar system. In most cases, it will not be necessary to run the pump for extended periods of time, only long enough to supply current needs, which could be running the pump for as little as 30 minutes/day. ***This equipment must be obtained before an event – it will not be available after an event.***

Medium to Long-term will have the same needs as the short-term periods. The difference is in the amount of resources required.

If your static water level is less than 23 feet deep, you don’t have to remove your nonfunctional electric submersible pump. Instead, you install a pitcher pump at the top.

This pump sucks water up through the unpowered submersible pump. You can install it yourself at moderate cost or you can pay a professional to do it for you. Being able to install an emergency system ahead of time is a real advantage over trying to do it after the onset of disaster.

Source: [EMP Blog](#)

Food

Immediate:

Unfortunately, most people do not have the means to stay in their homes with the food they have in their pantry for more than 3-5 days. Immediate food needs can be satisfied with various canned and dried goods. In an emergency without power, it would be prudent to use the foods in the refrigerator and freezer first, before they spoil, and then move on to the canned and dried foods. It would be prudent to choose foods that do not need to be heated or cooked initially in order to conserve fuel. Keep in mind that you may need to have some way of heating or cooking the food in the freezer. In the event you are caught on the road trying to get home (i.e., if you are caught at the office or away from home at the time of an event), a “bugout bag” would be useful to help you get to your home location. It can contain energy bars and trail mixes, as well as freeze dried food pouches of various types or staples such as tuna in foil packs and various other items helpful to assist you in getting home, such as minor first aid, extra socks, maps, knife, firearms, etc. Water bottles or a Berkey Sport Filter bottle would be a good addition to a bugout bag. . (See the transportation section for more information about bug out bags.)

Short-Term

When stockpiling food for your family, you’ll want to choose food items that require little to no heating and that your family is familiar with. Consider that cooking requires substantially more fuel than heating; therefore, canned foods that need only to be heated are a better choice than dried foods that will require boiling. Oversize cans are great if you feel your family can consume all the contents in one sitting, otherwise the leftovers will spoil in the absence of refrigeration. And, in a grid down scenario, you should try not have any waste of critical food items. When considering what to stock, remember, peanut butter (assuming no allergies) is a great protein source and lasts for a long time, as are beans. ***Make sure you have at least two mechanical can openers.*** Electric openers will not work. Remember, two is one, one is none.

One method of stockpiling a short-term food supply is to use 5-gallon buckets to store a variety of canned foods (canned meats, veggies, pastas, etc. for a quantity of balanced meals). You can tape an index card on the top of the bucket with the quantities and types of canned foods along with the expiration date of the earliest expiring item.

You can also put a small mechanical can opener in each bucket. You can then calculate about how many days' worth of food each bucket contains for your family so that you can quickly determine how much time you have with the numbers of buckets you have. As food is consumed the buckets can be used as a method of gathering and transporting water, etc. As the buckets approach the expiration date you can either consume the food or donate it to your church or local charity / food pantry as part of your tithe. (Note, when you fill these buckets, ensure that the canned food is the same temperature as the surrounding air so that you don't get condensation on the metal cans and cause them to rust while in storage).

Medium to Long-term

This timeframe will have the same needs as the short-term period, just different amounts of resources. An excellent food calculator is provided online by the LDS (Latter Day Saints). Their philosophy requires a year's supply of food for each family member, a good goal to seek. Here is a link to their calculator:

[Food Storage Calculator](#) (The Latter Day Saints)

[Food Storage Calculator \(The Food Guys\)](#)

Here is an Excel spreadsheet to calculate food requirements. This also has a timeframe feature:

[Long Term Food Storage Calculator](#)

It would be a good idea to print these charts out for use.

Other thoughts on food for a forward planning process are to use food dehydrators, vacuum packing, pressure or hot water canning (much like our forefathers used) and freeze drying. Food can also be stored in 5 gallon pails, using Mylar bags and oxygen absorbers, for as long as 25 years. Foods amenable to storing this way include beans, oats, other grains such as red and white wheat, sugar, salt, rice, flour and pastas. An online search will show vendors of equipment and techniques for this method. Bulk packages of the above can be found at stores like Sam's, Costco, Walmart, or your local grocery store.

Dehydrators can dehydrate food for storage in Mason jars and food stored like this can last for long periods. Vacuum packing can be done with a vacuum sealer. You can vacuum seal just about anything for long term storage. A vacuum sealer can also be used to vacuum seal Mason jars. Pressure canning uses a pressure vessel and boiling water. Foods so prepared can last for several years, properly stored. Storage should be in as cool and dark a place as is available, in any case, not exposed to sun and high

heat. After a year, they may lose some quality, but will remain safe to eat as long as the seal is intact and the top is not bulging. If you live in a relatively cool climate, a root cellar can be used for food storage since it maintains a cool temperature year around.

Freeze drying is possible at home. However, the basic investment is not cheap, typically around \$3,000-\$4,000.

It is also possible to seal #10 cans at home and then nitrogen purge them before sealing. A typical mechanical can sealer is around \$950+, plus the nitrogen equipment.

There are many vendors who sell freeze dried foods, vacuum sealed foods and MRE's (Meals Ready to Eat). Some vendors are Mountain House, Augason Farms, Wise Foods, Numanna, Provident Pantry and others.

A grain mill is a necessity if you store grains. This will allow you to mill it to produce flour. Mechanical and electric mills are available, but the electric mills will only work if you have power from a solar panel or generator, so try to get a mechanical mill.

Natural honey is another item to consider. It stores well and is an excellent sweetener. It also has medicinal uses. Nuts (pistachios, cashews, pecans, peanuts and brazil nuts are all packed with protein and a variety of vitamins and minerals needed to sustain proper nutrition) and peanut butter are also long-term food storage items you should consider and will last almost indefinitely if stored properly

Many communities have a local LDS food distribution center that will usually sell to non-LDS members. They are more limited than online vendors in selection, but cheaper and do not have shipping costs associated with them.

There are also small stoves available which use a minimal amount of fuel. However, a better choice is a solar oven. It uses sunlight and will cook bread, chicken or boil water. They are frequently used in undeveloped countries. You can buy or build one.

Best Solar Oven

How to Build a Solar Oven

Finally, there is the organic, or gardening approach. Many people have enough land to put in a small garden. It is surprising how much a small garden can produce for a family. Obviously, this is not a last minute thing. You will need to decide what to grow and where, and make a decision when to start. It can take weeks or months to get produce from your garden. Heirloom seeds are a must. Hybrid seeds will not germinate for successive growing seasons like heirloom seeds.

Check out the links below for heirloom seeds:

[Heirloom Seeds](#)

[Johnny's Heirloom Varieties](#)

Growing gardens in traditional rows will attract unwanted attention so planting stealth or circular gardens based around a fruit or nut tree with bushy plants and herbs next and ground vines or low growing plants next can yield a great amount of food and most people will not recognize this as a garden. Using perennials for this method will also yield food year after year without the need for replanting. Medicinal herbs can also be included which can aid in protecting your food plants from insects as well.

The one major issue here is water. If you live in an area with adequate rainfall, you should do well without having to water your garden. In an arid area, water may be more precious to drink rather than to use for watering. An excellent book on this topic is "Mini Farming – Self Sufficiency on ¼ Acre" by Brett Markham. There are many other equally good books on this subject. Plan ahead!

You should also consider a store of paper plates and plastic utensils. You may not have water to wash regular utensils or serving items.

Do not forget that hunting is always a way to supplement your food supplies. Many people, including your neighbors, may be occasional or avid hunters. If you decide to hunt, remember that other people may be doing the same. Depending on your locale, there may be a few or many other hunters competing for a limited amount of game. In this case, stealth is preferable to announcing your presence with a loud rifle shot and you may want to consider the use of a silencer. Learning to hunt with a bow is another way of harvesting game without any noise and if practiced can be used to take any large to medium sized game. Blowguns are a great option for small game as are traps and snares.

The Trappers Bible, by Dale Martin, is an excellent reference.

Fishing is also another source of food. If you are located by a stream, river, lake or larger body of water it will almost certainly have aquatic animals that you can harvest (the type and abundance depends on your geographic location and could range from oysters or clams to crawfish, crabs, shrimp, turtles and fish). An ample supply of fishing line and a variety of different size hooks should be an essential part of your food supply planning. Trot lines, crab traps, minnow traps, seine nets and cast nets can also be invaluable tools for harvesting seafood. Learning to construct fish traps from natural materials should also be part of your food supply plans.