NEVER GO THIRSTY

DAMIAN CAMPBELL

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DIY Water Catchment System

Water. It is, without a doubt, one of the biggest hassles of long-term survival. There are simple reasons for this. You *need* water; you can't *not* have it. The old standby of water recommendations for long-term survival and even short-term survival scenarios is one gallon per person per day. Obviously, if you're bugging out or engaged in escape and evasion, you can't carry that amount of water for any distance, nor can you store that much in bottled water (unless you devote immense space and money to stockpiling it). For those survivors who want a long-term water solution — say, three to six months of water — the math breaks down to this:

1 gallon per person per day = 90 gallons for 3 months
1 gallon per person per day = 180 gallons for 6 months
Water supply for a family of 4 = 720 gallons for 6 months

Now, that's bare minimum, and if it sounds like a lot, it is — depending on how you look at it. It' a lot if you're trying to squirrel away bottled water or even larger containers of stored water, depending on how you acquire it. It's NOT a lot if you have your own at-home, ultra-low-cost system for collecting water FREE... in the quantities that you and your family will need.

We're talking about setting up your own rainwater catchment system, which is not only completely doable for what you require... but also happens to be both easy and inexpensive.

Why A Water Catchment System?

A water catchment system is a means of collecting rainwater. In other words, it takes advantage of the water that's *already falling out of the sky* at no cost to you. While there's a little expense associated with setting up your catchment system, they're extremely inexpensive overall. In other words, the reason why "Set up a water catchment system" is the answer to the question, "How do I provide for my family's long-term water needs?" is that the system is...

- Easy to set up
- Inexpensive to put together
- Low-cost to run and maintain
- Completely doable in terms of QUANTITY of water produced

But what do we mean by "doable" in terms of quantity? Well, it again, it comes down to numbers.

How "Doable" Is Your Water Catchment System?

The average rainfall in the United States is, to round it considerably, around 30 inches per year, or 2.5 inches per month. That will vary based on the season of the year and, obviously, if you live in the middle of Death Valley, relying on a water catchment system is probably not for you. For most of us, though, and that means those of us living in "average" areas with "average" rainfall, 2.5 inches of rainfall per month is more than enough.

The average roof (let's say, a thousand square feet) can produce up to 600 gallons (more than 2,270 liters) of rainwater as part of a one-inch rainfall. If your area sees 2.5 inches of rainfall per month, that means in one month you could potentially collect a whopping 1,500 gallons. Cut that number in half and you still have 750 gallons collected in one month — which is more than the one gallon per person per day amount needed for a family of four to survive for six months.

Do you see now why a rainwater catchment system is so powerful? Simply put, it is the easiest, simplest, and lowest-cost way to collect survival water without doing anything additional. Once the system is set up, it does its job whenever rain is falling. There is nothing else you need to do beyond basic maintenance and troubleshooting.

Water Catchment For Less Than $100

A little later in this booklet I'll give you some tips for simple systems you can construct. That includes my suggestions for how to put together a water catchment system for less than $100 (and sometimes far less than that). The fact is, you, me... everyone can afford to build a catchment system. It does NOT have to cost a fortune.

What This Booklet Is And Is Not

This booklet is a guide to how to design and set up your own rainwater catchment system. Using the information in this guide, you'll be able to put together a system that provides enough water for three to six months of long-term survival... possibly even more, depending on the size of your family and the size of your water storage facility.

Why No Diagrams?

A lot of booklets, webpages, PDF files, and other instructional materials about rainwater catchment systems include detailed diagrams. The problem with these diagrams is that they're *wrong* for almost everyone in almost every situation. Everyone's home, layout, available space, and resources, are different... which means anything but the most general concepts of how to design and implement this system wouldn't be right for you. Don't worry, though: The good news is that your water catchment system doesn't have to be complicated and it will be easy to set up. You have multiple options and, if you want, you can do a little more research to get specific recommendations for things like piping sizes and so on. What's important is that you follow the guidelines in this booklet so that you can create a system that is right for you and your family — all at very low cost, with the capacity you require.

Is It Legal To Collect Rainwater?

One of the first things that people ask when it comes to rainwater catchment systems is whether it is illegal to collect rainwater. Probably, they've seen articles (horror stories, really) and news pieces about individuals who've collected rainwater and been arrested for it. What most of those stories aren't really telling you is that the majority of cases like that include some other complication. For the overwhelming majority of people, collecting rainwater is completely legal.

In fact, most states don't have any regulations *at all* governing the collection of rainwater. If there are laws, they're state laws, because there are no federal regulations on collecting rainwater. (There may be local codes and regulations at the town, city, or county level where you are, so

you'll want to research those with your local government.) If you were to build an ambitious system that actually required the help of a contractor, you would want that contractor or handyman to be familiar with these codes and ordinances too... but, honestly, there is no need for this to be that complicated.

You may be in one of the states that is an exception, meaning there may actually be laws about collecting rainwater. Colorado and Utah make it difficult to collect rainwater, if not outright illegal; you need a permit in Utah (and you're limited to 2,500 gallons maximum) while it's pretty much completely illegal to harvest rainwater in Colorado. In Idaho, you can collect rainwater that isn't headed into a natural waterway; in New Mexico, you sometimes need a permit; in Oregon, you may only use rooftops as the catchment system.]

Ohio has state codes and regulations for harvesting rainwater, while states like North Carolina and Texas actually encourage property owners to collect rainwater because this helps with water conservation. Sometimes you can even get tax incentives for collecting rainwater in Texas.

The upshot is that in most of the United States, you can collect rainwater and it's completely legal to do so (or actively encouraged for stormwater management and water conservation). The majority of states recognize that when rainwater falls on property you own, you have the property right to that resource.

Better still, the legal climate for rainwater harvesting is getting better, not worse. More and more states are becoming aware of the benefits of rainwater harvesting and are encouraging it, sometimes with state incentives. Some states are moving to change their regulations to

improve them. There are multiple organizations devoted to rainwater harvesting, too, such as the American Rainwater Catchment Systems Association and the International Rainwater Catchment System Association.

The fact is, rainwater harvesting has many benefits, and not just in providing for a survival water supply for you and your family. Rainwater catchment helps keep rivers, lakes, and streams clean, benefits in water conservation efforts, and promotes water availability. Old regulations forbidding the collection of rainwater, such as those in Colorado, involve outdated attitudes asserting that collecting rainwater upstream of a neighbor could damage the neighbor's water supply. This simply is not a significant concern, and letting go of those old attitudes is part of the reason the climate for rainwater catchment systems is improving.

So, to sum up, in most states you don't have to worry. Check your local regulations and codes, double-check for state requirements, and then move on to build your water catchment system. You'll be very glad you did.

Building Your Catchment System

To keep costs down, we're going to go with a *passive* system. This collects rainwater, but doesn't need electricity (unless that's used for year-round operation in freezing temperatures, which we'll talk about). You're basically just funneling water out of the sky into a barrel or barrels where you store it for later use. It's that simple in concept, but there are some things to keep in mind.

At its simplest, a water catchment system consists of three parts:

1. Collecting The Water
2. Transporting The Water
3. Storing The Water

In very simple systems, there's no transporting. In slightly more complicated systems, the water is collected at the catchment (such as your roof), transported by gutters and/or pipes to a barrel or tank, and stored in the barrel or tank. Remember, no water catchment is 100% efficient; you'll lose water along the way, which means you'll end up storing roughly 80% of the water you collect at the catchment. This small amount of loss isn't significant to your purposes; it's not like this is meant to be a precision system. Just be aware that you'll lose a little bit of water along the way to evaporation, leakage, imprecise catchment, etc. (In other words, collecting rainwater is often messy and not exactly precise... but it is SIMPLE and EASY, which makes it worthwhile.)

Something else to consider: I'm recommending you build a water catchment system for survival, but if your water storage system ends up

bringing in MORE than you need (such as a system serving a single homeowner without dependents), it's also a great way to reduce your water costs. About 40% of the water use of an average household is used for what's classified as "irrigation" — watering your lawn, watering your garden, occasionally filling a swimming pool, etc. (We could argue about how to classify that last one, I guess.) What this means for you is that a water catchment system that brings in more water than you need or want to store can be used to water your lawn and for other non-drinking purposes, solely to reduce your water bill.

Some Dos and Don'ts Of Water Catchment

Before we get into how you'll choose to design and execute your water catchment system, let's talk about some basic tips when it comes to the system overall. In no particular order, these tips will help you with some of the "guideposts" of your system and will also serve as reminders of things to look out for.

Locate Your Storage Tanks

The first thing you need to do is plan the location of your system. For most of those reading this, that will mean determining where to stage one or more storage barrels. The location of your storage tank should take into account some practical considerations, but also some safety and property concerns.

First, if you're going to be using the water to, say, irrigate a garden, it makes sense to position the tank as close as possible to whatever this end goal might be. For example, if your garden is at the southwest corner of your house, you would position your tank under the gutter spout at the

southwest corner so that it's not farther away than needed. You might have to make some compromises, though. For example, you might want to make sure your storage tank is not visible from the road, which might dictate that it be located behind the house in a position that screens it from view, etc.

Why would you hide your storage tank? Well, assuming you're not doing anything illegal where you live when it comes to storing rainwater, this is a fundamental principle of survival. You don't want anyone to know about your survival preparations if they don't have to know about it. During the pandemic lockdowns of 2020, I know of at least one survivalist of my personal acquaintance who said he drove his local neighborhood during the lockdown, looking for clues as to who had survival stores and other gear that might be useful if things became truly desperate. Don't broadcast to the neighborhood that you have survival preps if you don't have to.

The big thing, when it comes to determining the location of your storage barrel(s) or tank(s), is to *avoid septic tanks and utility lines*. You want to stay well clear of both contaminants and possible maintenance problems. Even if there were no danger to your water collection from possible contamination, you don't want to position your system somewhere that future maintenance activities — yours, or those of your municipality — might require disrupting, changing, or even destroying the catchment system. If it's worth taking the time to install even a simple system, it's worth doing it in a way that won't require more work down the road.

Elevate and Level the Barrels

Once you've decided on a location for your barrels or tanks (your system could be one barrel, it could be many barrels, it could be a single large tank of some kind, etc.), you need to prepare the area. There are a few things to think about at the same time, all of which will make your life easier in the long run.

First, if it's at all possible, you're going to want to elevate the barrel(s) to get them up off the ground. This won't necessarily be something you can do with a very large, galvanized tank or other sizable storage system, but getting the tank up off ground level serves a few purposes. For one thing, it lets you monitor the condition of the tank or barrel all the way around, which is especially important when looking for cracks or signs of collapse (or, if you're using a metal tank, any sign of corrosion).

For another thing, elevating the barrel or tank makes it easier to collect water from it. You're typically going to have some means of putting the stored water into the top of the tank, and you may have an overflow or connector hose (when the tank gets full, it either releases the "extra" rainwater or starts filling a second barrel), but there will also be a spigot at the bottom of the barrel or tank that is where you get the water out to be used (to purify for drinking, to irrigate your garden, etc.). If that "use spigot" is up off the ground a bit, it's much easier to use it, get a bucket under it, etc.

There are a variety of ways to elevate the barrels. If you're using simple 55-gallon barrels or trashcans, some cinder blocks or two-by-fours on top of cinder blocks make a perfectly adequate platform. A more elaborate and sturdy platform can be constructed to your specifications

and for your needs, by you or by a contractor, for larger tanks. (Just remember that water is HEAVY, something we'll get to shortly.)

The goal is to make sure the tank is sitting up a bit for ease of access, and to get it off direct contact with the ground, so that it is sturdy and not likely to fall or tip over. If you can't elevate the tank and keep it sturdy, it's better not to elevate it at all.

Second, you want the barrel or tank to sit level. If it isn't level, you're basically wasting storage space, because the water will reach a point where it starts to leak out faster on the side that is lowest. Leveling the tank or barrel makes it more stable, too.

Leveling will typically be done by digging out a section beneath where the tanks will sit on their platform (such as their cinder blocks) and filling the area with pea gravel, then spreading that gravel out to level and grade it. This is a tiny version of what is done to install an above-ground swimming pool and it works on the same principle. You just need a rectangle big enough to accommodate your tanks with some area around it. But there's another reason you want a section of pea gravel under your tanks...

Pea Gravel And Overflow

Pea gravel is great for water overflow. You don't want just any gravel or crushed stone, though. You want pea gravel specifically. The pieces are about three eighths of an inch in size (whereas crushed stone can be much larger, ranging up to a few inches in size). Pea gravel is also relatively consistent in terms of shape, which is what you want for leveling and for absorbing water overflow, making it perfect for drainage of any "extra" water flowing out of your storage barrel or tank.

Now, you might be tempted to think, “I don’t need any provision for overflow. After all, I’m going to be collecting water at a relatively slow pace. I’ll use it long before I fill up my barrel(s) or tank(s).” Well, that’s true; you probably will. But what if you don’t? What if you get a particularly severe storm? What if your area sees enough rain to cause flooding? What if you’re called away for some length of time? There are any number of reasons that your catchment system might continue to passively gather water from your roof, which flows into gutters into a gutter or PVC pipe that leads to your barrels or tanks... and when those get filled, the water has to go somewhere.

Either you let the system back up (which isn’t good for anybody, and may damage the system itself) or you give that overflow water somewhere to go. A simple, filtered overflow spout at the top of a barrel would be enough to do this, so that water flowing into the barrel has somewhere to go out. Ideally, you want that overflow hole or spout to be BELOW the level at which water is introduced to the storage tank. That way, there’s always a gap between the top of the water level and the outlet of the incoming water pipe or gutter.

If you use a nice bed of pea gravel for drainage, the water can flow into that and then into the ground to be absorbed, and no damage is done. Obviously, this will be a consideration when you locate your barrels or tanks, too. Can you place drainage here? Will you be running the risk of flooding some part of your property if you do? Are you sitting on top of a slab of asphalt because you decided to position the barrels at the end of your driveway... meaning overflow and drainage has to go into another tube or pipe to be taken somewhere else? These are all considerations

when planning out your system. It isn't complicated, but you do have to think about these things.

Always Filter Debris

Another thing you need to remember to do when you plan out your system is always to FILTER that system. I'm not talking about filtering the water to make it safe to drink; that comes later. I'm talking about filtering the rainwater before it ever gets to your storage tank, to remove debris, vegetation, and insect life (among many other things) from making its way into the water storage.

Nylon pantyhose and even cheese cloth or muslin cloth will make a decent filter for debris. Landscape fabric is another option. You can go with a variety of commercial filters, too, if you want to spend money on them. What's important is that you filter out any debris that is going to end up in the stored water, which you don't want in there.

If your catchment system involves your rain gutters (and such systems often do), keeping your gutters nice and clean is one way to reduce the amount of work your filters will have to do. It will also prevent clogs that snarl up the system and reduce the amount of water flowing into the storage barrel or tank. Of course, there are any number of gutter protection services and products you can buy that will add a barrier on top of your gutters to keep leaves out while letting water in. Think of filtering out the big stuff, the major debris and other foreign material, as the first step in what has to be a multiple-step filter process if you're going to use this water for survival.

If you're just using the rainwater you collect to irrigate a garden, that's one thing. If you intend ever to drink it, you need to remember that

you cannot simply drink it. I know all of us have tasted rain before and, honestly, if you had to drink untested water to survive, drinking it right out of the air in the form of rain is a lot safer than, say, drinking out of a stream. But by the time the water has hit your roof, traveled through your gutters, and passed into the storage facility (be that a barrel, a tank, or whatever), it has had plenty of opportunities to pick up microorganisms and other contaminants that a strip of cheese cloth or landscape fabric simply isn't going to remove. That's why you need to remember...

The Stored Rainwater Is NOT Potable

Rainwater that is to be used for drinking has to be filtered in one of three ways. It can be passed through a physical filter that is rated for removing microorganisms. You've used this if you've used, say, one of those "Life Straw" style filters, or a water bottle with a microorganism filter built into it. Water can also be chemically treated, such as with bleach or chlorine (bleach is a solution of perhaps 5 or 6 percent chlorine) or with chemical water treatment tablets (sometimes called "Potable Aqua," one of multiple brand names). You'll need to do some homework if you intend to use chemical disinfection, because you have to use enough to sanitized the water without using so much that you poison yourself. That's a little beyond the scope of this booklet, but it's something to consider.

The foolproof method for making water safe to drink is always going to be boiling. To be extra safe, I would run the stored rainwater through a physical filter and then, for water kept on hand for drinking and cooking, I would boil it before use. This way you'll be doubly sure to remove any contaminants. In desperate situations, the sun can be used to purify drinking water, but I would not want to rely on that.

Keep in mind that water that has been contaminated with certain chemicals will not become safe to drink after it has been filtered or boiled, though. This usually won't be a problem with rainwater the way it would be with "found water" that is somewhere on the land (where it could pick up, say, gasoline contamination or any number of other chemicals), so it's a low-level concern, but you need to know what your filters can and cannot do.

Barrels And Tanks

The barrel or tank is the heart of your water catchment system. You might think it's the catchment and transportation, but those are useless if you don't have something to store your collected water in. Therefore, when setting up your catchment system, I would choose the barrel or tank you intend to use FIRST, then build the rest of the system around that.

The most common types of water storage used for catchment systems are probably 55-gallon drums or plastic barrels. You can use a larger plastic or galvanized metal tank, of course, depending on how large a system you are planning. I've even seen water catchment systems that make use of old metal drum-style barrels... but if you use non-galvanized, non-treated metal barrels, you need to worry about rust and corrosion. (Honestly, I would not use those to store rainwater for anything other than irrigation.)

In my opinion, plastic/PVC barrels are a much better choice for rainwater catchment, and if you need to install any piping to transport water (meaning you're not using your gutters, or you need a pipe to go from your gutters to somewhere else, or from the barrel to an overflow

point) I would use PVC. Polyvinylchloride piping is very easy to work with, can be heated and bent or shaped, is relatively inexpensive, and can be cut and connected without too much difficulty. It is more than enough to handle a passive water transportation system, even if rainwater is flowing heavily from a storm, and you'll never have to worry about rust or corrosion.

You can even use heavy-duty plastic trash cans as water storage barrels, or as self-contained small water catchment systems. (Galvanized metal trashcans can also be used and are usually water-tight, or can be made to be.) There's just one thing to watch out for, though, and that is that not all plastic trash cans are thick enough or strong enough to be used for water storage.

A gallon of water weighs about 8.34 pounds (3.785 kilograms). That means that a full 55 gallon barrel weighs over 450 pounds (well over 200 kilograms). That's a lot of weight, so you need to make sure you've chosen a container strong enough to handle that kind of weight without bending, cracking, or collapsing in on itself.

When you install your barrel, you'll create an opening in the top large enough for the downspout (the inflow from your roof catchment system/gutter system) to fit inside the barrel. You'll install a second opening for the "use spout," and a third opening below the downspout and near the top of the barrel to serve as overflow (or to connect to other barrels). What you DON'T want to do is have the top of the barrel open at any point.

This is where filters and landscape fabric come in handy. Keeping the top of the barrel closed, and filtering the area where water enters the barrel, prevents mosquitos and other insects from breeding in the water

(yuck). You absolutely don't want just an open rain barrel, either. The first time you come out to your rain barrel and find a dead squirrel in it, you'll understand why.

Never, ever leave your storage barrel or tank open and unfiltered. All that stored water just sitting there, "stagnant," is too great a temptation for mosquitos and other wildlife.

Maintenance

Maintenance is an important aspect of any water catchment system. It doesn't matter if the whole setup, while inexpensive and easy to put in place, was perfect on day one... if ten years later you haven't touched it. You should be performing annual inspections, even if that's just to see that everything is still intact, there are no cracks, and the storage system is accumulating and storing water.

You can use some sort of dipstick (a yard stick, for example(to check the water level in the tank if you can't see through the walls. For example, a blue plastic barrel would be impossible to see through; a large plastic storage tank for water could conceivably be clear enough so that you could view the water level. That way you'll have some idea of what you've accumulated, how your storage is going over time, how much water you're using from the storage tank, etc. If you have several heavy rains and the level in the storage tank doesn't increase (or doesn't keep pace with what you use), then there might be a problem.

It's also a good idea to drain and clean out the storage barrel or tank every 3 to 5 years. I know, I know; that's one of those chores that almost everybody thinks, "I don't know if I'm going to do that." But trust

me, if your tank were to start to develop mold or some other issue, you'd want to know.

If you're storing large quantities of water that you aren't using, treating the water with bleach (to keep it from growing anything nasty while it's sitting there) is a good idea. A teaspoon of bleach is enough to disinfect 5 gallons of water. However, if you're storing a lot of water that you're not then using for anything, you'll want to consider rotating it just to keep it fresh.

You might consider stepping up the process of draining and filling the tank. You could drain it just part of the way, for example, based on your average accumulation (which will vary based on where you live and how much rain fall you get). That way, you're never just out of survival water, waiting for the next rain to make a dent in the tank... but you're rotating the supply so you don't have a stagnant tank of 3-year-old water that you're not doing anything with.

Basic Catchment Systems: A Review

Based on what I've told you so far, you probably know enough to design and construct a water catchment system that meets your specific needs. If you'd like me to spell it out for you, though, I will. Let's talk about how, conceptually, you'd put together the simplest system, how to upgrade that to a more practical system, and what you might consider next to really take it to the next level.

Simplest: Trash Can Rain Barrel (Self-Contained)

Without a doubt, the simplest catchment system uses the barrel itself as both the catchment and the storage. What you'd do is simply get, say, a large heavy-duty plastic trash can. You could then cover the opening with landscape fabric, affix the lid (which you've made a hole in), and add a large funnel (the wider the better) connected to the opening in the lid. You'd also want to install a spigot near the bottom of the can, and an overflow opening (with its own landscape fabric filter) near the top but below the level of the hole where the rainwater comes in.

You are literally done. This is a self-contained water barrel that is screened from debris and that will collect whatever rainwater falls into the funnel and then into the can. You can move it around (when it's empty) to position it for the best rainwater capture, but of course, once filled, it will be very heavy. You could position this on a leveled, raised service if you wanted to, or just put it in the corner of a driveway to collect whatever rainwater it can.

The limitation on a self-contained water barrel or trash can like this is, of course, that the catchment system is *extremely* limited. Instead of the surface of an entire roof being funneled into the storage area, only what

falls into the funnel attached to the barrel will accumulate. Still, it would be enough to very simply collect a little bit of rainwater. The volume of rainwater, and the location where you stage the barrel, would make a lot of difference, In some climates and for some applications this might be all you need.

Simple But Better: Roof Gutter Rain Barrel Catchment System

The basic water catchment system — let's call it the "average" system — takes advantage of the "average" roof. Assuming your roof has gutters to channel the rainfall (you would need to install gutters if you don't have them), you would run the downspout gutter to the top of the water barrel (after making sure of the positioning of your barrel as we have previously described it).

Level the surface under the barrel position using the pea gravel for overflow drainage as described. Again, if you're positioning the barrel on a ribbon of asphalt, it may be level (or you can level it with shims or boards) but you'll need to run an overflow tube or hose to a different drainage location. Ideally, you would raise the barrel up off the ground using, say, a flat pad of pea gravel for drainage, on which is set a series of cinder blocks, on top of which are two-by-fours or other boards to make a nice, flat surface for your barrel(s).

Again as previously described, there are three holes in your first barrel. One is the downspout, where the gutter brings water into the barrel through a filter. Below the level of the downspout but almost at the top is the filtered overflow opening (with or without a hose) to channel overflow water so it doesn't back up once the barrel is full. This opening could also be used to attach a hose or pipe to a second barrel, and from

there a third or a fourth, to have multiple rain barrels in series. Your third hole is the “use spout,” which is positioned at the bottom of the barrel, and in which you would install some kind of spigot or valve that you can purchase at the hardware store.

From the use spout, you would raw water, which then must be physically filtered and, ideally, boiled if it is for drinking. Otherwise the water can simply be used for irrigation. This basic system, with a barrel connected to a downspout from the roof gutters, can provide more than enough rainwater collection for a family of four for three to six months, and more for fewer people. For most of us, it is as complicated as we need to get... but there ARE some enhancements and upgrades you might consider.

Options, Enhancements, And Level-Ups For Your Catchment System

Plastic garbage cans or PVC 55-gallon drums are fine, and easy to work with (especially when it comes to making holes in them). If you want to build a larger storage capacity into your water facility, you can always use a large tank. Farm supply stores and some hardware stores sell large plastic tanks that can be used for this purpose. A large galvanized metal tank is also an option (but again, with plastic there is no concern about corrosion).

When you have multiple tanks connected in series, as long as you make each connecting spout slightly lower than the next, the water will naturally move from one tank to another in series as the tanks fill up. You’ll lose a little capacity as you move the level of the connecting tank down, but physics will do the rest for you.

If you really want to get fancy, you could build a strong raised platform for your tanks or barrels, and run PVC pipes from the barrels to anywhere else (including additional basis, “use spouts,” or irrigation funnels. Most of those reading this will never get that far, but once you’ve gotten started building these extremely simple, passive systems, it’s not hard to keep going and get more elaborate.

Finally, as we discussed before, one of the worst things for your survival preps is to let people know you are prepared. If anyone in your neighborhood understands that you take precautions and make preparations like this, they’ll file that knowledge away for future use and treat you like a resource.

Also, if where you live the local authorities tend to hassle people for collecting rainwater (assuming it’s not illegal overall), keeping your catchment system out of sight just helps reduce attention paid to you and your property from all corners. It might be worth your while to build a wooden enclosure to conceal the barrels. Something that looks similar to the architecture of your house is ideal.

Another technique of camouflage would be to build a square enclosure around the barrel or barrels, out of some sort of decorative wood and/or lattice work, and then add planters to the top. You could add more decoy planters at other intervals around the property so that the tank completely blends in among the rest of your home improvements.

Concealing your preps is not just useful. It’s actually kind of fun, and the more you practice hiding things in plain sight, the more you will enjoy doing so. You are limited only to your imagination, as in so many things.

Keeping Your Budget Under $100

Obviously, you could spend as much as you're prepared to spend on an elaborate water catchment system... but you don't have to spend a fortune. In fact, a basic water catchment system can be made for $100 or less... sometimes MUCH less.

The simple standalone barrel with cover and landscape fabric filter costs around 80 dollars depending on the cost of the trashcan itself. A polyethylene 55 gallon drum costs around 70 dollars new. Add a few cinder blocks and some hose/tubing and you're easily under $100 bucks BRAND NEW if you're frugal... but if you don't mind shopping around and buying used, you can get more system for less money.

Used listings in sites like Craigslist, thrift shops (especially), junk yards... all of these are valuable sources for the materials you need... cheap. Even scrap lumber for a project can be less costly than buying new lumber (especially at a time when lumber prices are skyrocketing and international shipping is still catching up to demand). If you just shop around and take a little time, you can build very nearly as large a system as you want... all for $100 or less. In fact, you can almost make a game of it, seeing just how cheaply you can get the right components, as long as you have the time to look around a bit.

My point is, cost is NEVER a factor in building your water catchment system. It is never the case that this has to cost you more than five 20-dollar bills out of pocket... and you can probably get by with less.

When Temperatures Go Below Freezing

Simple rainwater catchment systems can ONLY be used when temperatures are above freezing. This should be obvious, but if it wasn't, it needs to be said. A passive rainwater catchment system cannot be used if water is frozen... and frozen water inside pipes and your storage tanks or barrels could damage them and the piping running between them.

You have two options. If you live somewhere that freezing temperatures occur, you could drain the system completely before the winter months and use it to store water only during the warmer months. This can be kind of a hassle, especially if you're storing large volumes of water and you now need to drain those tanks. There is very little more powerful than water expanding as it freezes, do you can't afford to do nothing and hope for the best. Freezing WILL wreck your system if you leave it full of water.

There are other options, though.

Warm Or Insulate the Storage Tank

One way to prevent the storage tank from freezing is to insulate it and/or heat it. There are a number of products available at farm supply stores that can be used for this purpose. Some of these products, for example, are meant to apply heat to a body of water so that water put out for livestock to drink does not freeze and prevent the animals from drinking. The exact product you buy will depend on how you've chosen to execute your system. I would not recommend throwing a heating element intended for galvanized steel livestock troughs into a plastic trash can

you're keeping your rainwater in, because the heating element could melt the plastic. There might be other ways to keep the water above freezing.

Remember, the tank doesn't have to be warm enough to bathe in. It just has to be warm enough to keep it from freezing (in which case the ice would expand and crack the tank).

If your winterization involves warming the tank but not doing anything with the pipes, you'll need valve installed to shut off the pipes and/or divert rainwater away from the storage tank. If you plan ahead, you can build these right into your system.

Insulate/Heat/Aerate The Pipes

Insulating the piping is another way to keep your rainwater catchment system going year-round. Simply applying insulation to the piping is simple enough; there are also pipe heating elements that are essentially warming cables you buy and run through pipes, which then keep the pipes from freezing down to many degrees below zero. If your system is relatively small and simple, keeping it from freezing might be as simple as running some of these waterproof heating cables through your piping system in conjunction with heating or insulating the storage tank.

Another way to keep pipes from freezing is to use an aerator. This keeps air (and therefore water) moving through the system so nothing stands still long enough to freeze. What you MUST avoid is standing water. Standing water will freeze when temperatures get low enough, and once it does, it will expand and cause damage.

There are even heat pumps on the market that can be used to circulate hot water through the system. This requires power, of course, as do most of these winterization solutions, which means your passive, low-

cost, low-maintenance system has just become more complicated. The “up side” to that is that you can collect water and make use of it year round, even if it gets cold in the winter.

Remember that in cold climates, even the equipment used to prevent freezing is ITSELF susceptible to freezing. Follow the manufacturer’s guidelines for whatever equipment you buy, and think ahead in terms of the conditions the equipment itself may face when extreme temperatures are involved.

Underground Construction

This will be a little more than most people are going to do in setting up a low-cost water catchment system, particularly a passive system, but there’s one other way to prevent your pipes from freezing. That’s to dig down below the frost line and position your pipes and other critical elements below that frost line. Go deep enough into a cave and you find that the area is more or less always at a comfortable temperature. This is the beauty of the Earth’s insulation, and it can work for you. Digging down below the frost line and burying pipes for a simple water catchment system is more work than almost anyone is willing to do... but if you’re thinking of planning a very elaborate system, this is one way to make that work for you.

How To Get Started

So: you now understand the basics, the least you need to know, to design and implement your own water catchment system. If you create a basic one-or-more- barrel system fed from the downspout of your gutters, and you have an average sized roof that gets average rainfall, you'll be able to collect more than enough survival water for three to six months for a family of four... and possibly more.

So how should you get started? Well, the steps are simple... but I would start with the storage. Determine what you are going to use for water storage. How big is the barrel? Will you use more than one? Would you rather have a bigger tank? What's it made out of? Nailing down this part of the equation will help you plan out the rest of your system, from where to position and level it while providing for drainage, to what sort of piping you're going to need to connect everything and transport the water, to how you'll end up using (or filtering, boiling, and drinking) the water. It really does all start with the storage and the rest of the system comes together from there.

Wrapping Your Head Around Water Catchment

There's one last thing I want to cover before I send you on your way. That is that a lot of people simply don't know how to wrap their heads around water catchment. They don't understand it because they've been incredibly fortunate all their lives. For as long as they've been alive, any time they wanted water, they just turned on a faucet in the bathroom or the kitchen and they got endless amounts of clean, drinkable water.

That isn't the case for a lot of people around the world. Heck, there are people in the United States for whom that isn't the case. And on

some level, every single human being knows two things: They know that water is life — that they absolutely have to have it, every day, to survive — and they know that in a major emergency, our water supply is vulnerable.

Why do you think it was that during the shortages caused by panic-buying during the 2020 COVID-19 pandemic, bottled water was one of the first things to sell out, and one of the first things stores put quantity limits on? It's because everybody understands, instinctively, that in a blackout, a storm emergency, a flood, or some other disaster, water supplies could be threatened and drinkable water could be in short supply. It doesn't matter that for most people during the pandemic, that bottled water wasn't needed. They understood that they *might* need it, and that's the mindset we have to get our heads around.

Every single one of us lived through the 2020 pandemic. If you're reading this now (and I'm assuming this booklet isn't an heirloom passed down by post-apocalyptic witch doctors decades from now), you remember the anxiety you felt about not being able to get the supplies you wanted... and the feeling of relief, of inner peace and reassurance, that stockpiling supplies gave you.

Much like older generations who lived through the Depression lived the rest of their lives extremely frugally, even hoarding things that you and I might think unnecessary, anyone who lived through 2020 remember what it felt like to stare at empty store shelves. For many of us, that was the first time we'd ever *seen* a store completely bare of things like toilet paper, hand sanitizer, and — after the initial panic buying turned to more informed panic buying — meat, pasta, and even bread, sugar, and flour. Remember how relieved you felt when you finally got your hands on the supplies you would need to get through the quarantines and

lockdowns... and remember how you *continued* stockpiling well after it was necessary?

I remember, and I'm here to tell you that you will experience the same feeling of relief, the same rush of calm and self-assurance, when you build a water catchment system. Water isn't like MREs or canned goods, which can be stacked up in a closet and forgotten. Water is much more immediate than that. It's heavy, it's difficult to store in quantity, and it's hard to move around with... which is why your best bet, in any long-term survival situation, is to be able to dig in and survive (unless and until bugging out becomes necessary). When you ARE surviving in place, having a water catchment system and a plentiful supply of stored rainwater ensures your survival and the well-being of your loved ones.

More importantly, a water catchment system is freedom. For most people, the idea of getting their basic "utilities" from the Earth instead of from some bureaucrat with an army of hard-hat-wearing technicians behind him is truly foreign. When you have a water catchment system, you take a step in the direction away from the bureaucrats and toward off-grid freedom. Even if you start small, that doesn't diminish how big the step itself can be. Any time you move away from dependence on government and the state, and toward independence and self-reliance for yourself and your family, you are moving in the right direction.

The Next Step

So, what's the next step? Where do you go from here? Well, just as I recommended, start by identifying potential storage solutions. What's available around you, and at what cost? Make some decisions. Plan out your system. Don't be afraid to get out a pen and paper and sketch it out

so you can visualize it. There's no rush, as such. You have time to plan. But you also can't afford to put this off. Get started now, because if you never take the steps toward putting together some kind of water catchment system, you'll never have the peace of mind that comes from knowing you've got your survival water needs covered.

It sounds simple, doesn't it? Well, it should. It's simple because it is. The system is simple. The concept is simple. The benefits are simple (and real). Nothing about this has to be complicated. It just has to be something you act on now, while there's time to design and implement a system. Don't wait until you actually have an emergency. Get started now so that when you DO need that survival water, it's there.

Good luck.

Back Of Booklet Blurb

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