WILDERNESS SURVIVAL – WATER

Water is very important to survival. If the entire world did not have water for 10 days, nothing would be left living. In a survival situation, it is important that a person never allow themselves to become dehydrated. Some of the symptoms of dehydration are dry mouth, headache, parched or chapped lips, dark urine, nausea, and difficulty thinking clearly. As you can imagine, one of the worst symptoms for humans who become dehydrated in a survival situation is that their decision making is greatly affected.

Feeling thirsty is not the first symptom of being dehydrated. You can actually loss about twenty five percent of your body moisture before you start to feel thirsty. The pinch test is one of the quickest ways to tell if you are becoming dehydrated. Take the skin on the back of your hand and pinch it then let go and see how quickly it flattens. The more water you have in your system, the quicker the skin will return to a flattened condition. The less water you have in your system, the longer it will take for your skin to flatten and sometimes it will remain at a peak. It is good to try the pinch test when you are not in a survival situation so you know what normal is for you. Then if you every become in one you will easily be able to tell when you are becoming dehydrate.

Water Borne Pathogens

These are the things that can make you sick if they are in the water. There are basically four kinds of pathogens – parasites, protozoa, bacteria and viruses. A lot of these pathogens are carried by animals that use these same water sources. When they use the water they will contaminate it. The lakes are the worst because as the animals use the water and defecate in the water, water borne pathogens build up. The streams tend to clean themselves by carrying away the contaminates but you do not know if in the process of cleaning it is bringing the pathogens directly to where you are. When using these sources of water, purification is necessary.

SOURCES OF WATER & COLLECTION TECHNIQUES

Lakes, Streams & Rivers: Everyone is familiar with lakes, streams and rivers. Out of these sources, some can be trusted ***but most cannot***. Very small streams (perhaps 1 – 1 ½ feet across) can be followed upstream to the source where the animals haven't had a chance to contaminate it yet. ***Springs:*** Springs can be trusted in all circumstances. If you are fortunate enough to come across a spring in a wilderness survival situation, hydrate yourself until you cannot possibly hold anymore and fill any container available with water for future use. There is one exception with springs. When you find a spring in a lake or pond, the water coming from the spring is clean but the water from the lake or pond may not be and you cannot trust it if it mixes with the surrounding water. If you can find a non-poisonous plant that has a hollow stalk or can be hollowed out you can use this as a straw

to stick down into the spring far enough to get the clean water and not the lake or pond water then you can trust it.

Run-off: Run-off is usually from rain, but can also be from thawing snow or ice. If you are close to the source of run-off, you can usually trust the water. If you are further away from the source and there is a chance that the water has become contaminated by wildlife, it is always better to use some type of purification method to assure that you can drink the water without becoming ill.

When you are in a survival situation where there are cliffs, look carefully at the cliffs because quite often you can find a cliff face that is wet. This wetness is coming from the channels of water that run through rocks. The technique for collection of this type of water is a wick and a bottle.

The wick is created by tying a string to a small stick and sliding the stick inside the bottle neck so the stick will wedge itself in the bottle. You want the knot to hang in the center so the string does not touch the bottle. You are then going to hang this on the cliff so that the string (wick) is touching the moisture and this will soak up the moisture and drip it into the bottle.

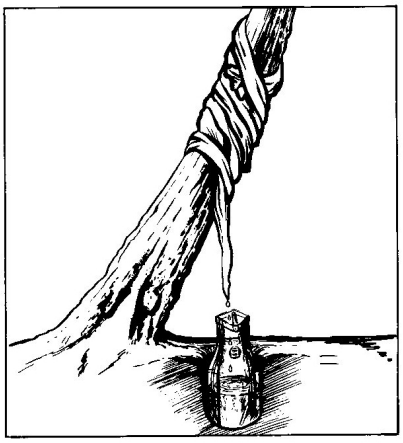








One way to gather rain run-off is to find a leaning tree and wrap whatever you can use (a rag, sock, shirt, etc.) wrapped around the bottom end of the tree as a wick and leave a portion of the wick dangling into a bottle below to wick the water directly into your bottle. This source of water can be trusted for drinking water.



Evaporation: Evaporation from trees and bushes can be used in survival situations, although it is not recommended unless you have perfected this skill before using as a water source.

To use this source correctly, grab a limb from a tree or bush and stuff it in a plastic bag and tie it off making sure that one of the bottom corners of the bag is the lowest point so that the water can collect away from the leaves. ***If this is not done correctly***, it will leech the leaves into your water which will cause a bad taste and could be poisonous!!!!!

Another technique called a solar still can also be used. I do not recommend this technique because the amount of water that you get versus the energy expended to make it does not make it worth it. Also in the hotter areas where you would use this technique you will sweating out more moisture making this then you get from it.

To use this technique you need to dig a pit with the top being about three feet across. Put a container in the very bottom of the pit and a tube in the container stretching from the container up out of the pit. Then stretch a piece of plastic over the pit anchoring with dirt or rocks. This plastic should have a little bit of slack left in it. Drop a stone on top of the plastic so that the plastic is weighed down over the top of your container. The water will collect on the bottom of the plastic and run down to the stone and then drip into the container. You will then use the tube to suck the water up out of the container. This technique is taught for desert survival and they do not produce much water.

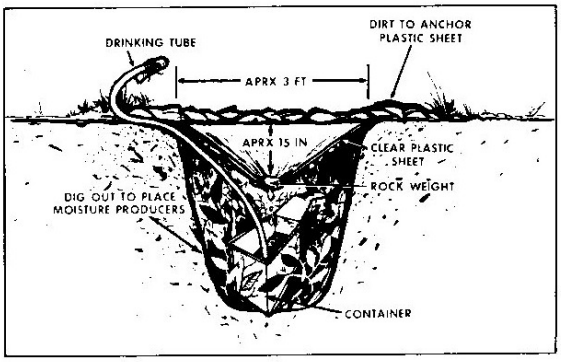


Figure 7-10. Solar Still.

Trees: Maple, White Birch, Black Walnut and Sycamore trees can be tapped, especially in spring. A tap can be made out of Elderberry stalk.

Melting snow and ice: Do not melt snow and ice with your body heat, it takes too much energy. Snow is mostly air and some water where ice is mostly water and some air so ice will produce more water but there are some drawbacks to using this as a water source in a survival situation.

Snow can be melted and the drinking water produced can be trusted for drinking without further purification. One of the simplest ways to melt snow is to make a snowball, put it on a stick near your fire and let it drip into a container. One thing to look for when gathering snow is it sometimes gets snow lice. These are always black. If you see these, scrape them off and use the snow underneath.

Another technique for melting snow is pictured below:

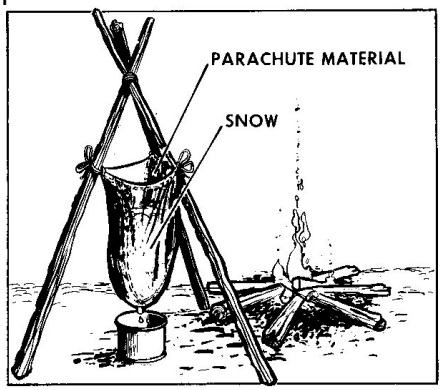
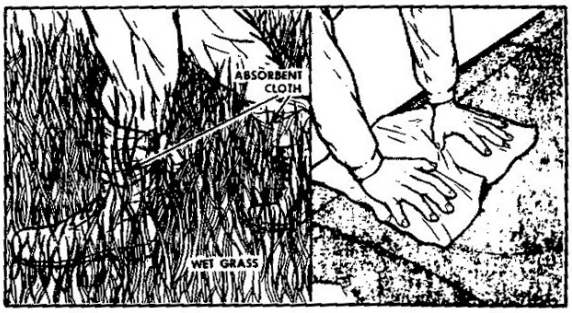


Figure 7-4. Snow Machine.

If you are using an icicle that formed from seepage through sand for your source, this water can be trusted. If you are using a lake or a stream for your ice source, this ice could carry water borne pathogens and must be purified.

Dew: Dew can be used and trusted for a water source. The Native Americans used to cross the desert by licking rocks in the early morning to get their moisture.

To collect dew you can use anything you can find (sock, shirt, shirtsleeve, etc.) to soak up the moisture and you can wring this into a container or directly into your mouth. One of the best techniques is to wrap cloth around your ankles and walk through the wet grass.



Water From Vines: This is used mostly in the jungle where there is a lot of vines. To use the water it must pass three tests first. The water must be clear. No color or cloudiness to it. Next put a little on your hand and see if it has a burning feeling to it. If it doesn't burn your hand try a little on your lip. If it doesn't burn your lip you can use it for a water source. These hold true in the jungle but in the US we have a form of poison ivy that is a vine. It is usually too small to be used for water but you do not want to come in contact with the sap of poison ivy because it is stronger than the leaves are at causing blisters on your skin.

Purification Techniques

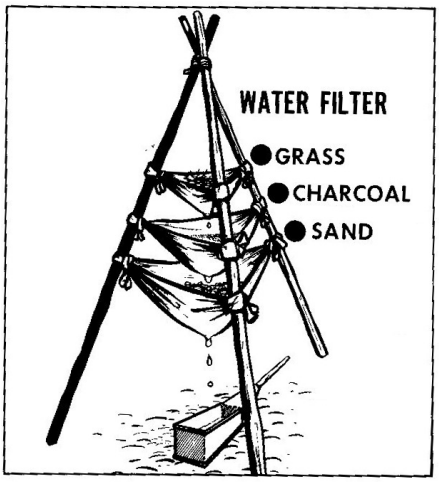
Chlorine: Chlorine does kill the basic four pathogens but its effectiveness is diminished in areas where limestone is present. Unfortunately limestone is prevalent in most areas.

Iodine: Iodine helps kill the basic four pathogens but there are certain times when this technique is not totally effective. Iodine also makes the water taste bad.

Boiling: Boiling is the best technique for purifying water because it is totally effective on all four pathogens. When boiling water, it must be at a rolling boil and the amount of boiling time necessary to purify water is dependent upon your location to sea level. At sea level, it is necessary to boil water for three minutes. On top of the highest mountain in the world, it is necessary to boil water for ten minutes. If you do not know where you are with respects to sea level, a good rule of thumb is to boil water for ten minutes.

There is one exception that can get through boiling water and that is small pieces of dead decaying animals. They contain enzymes that can make you

sick. A make sift filter can help here and can be made out of any cloth you can find. This will remove the small pieces and then you can boil the water making it safe to drink.



When boiling water, some of the oxygen is removed from the water making it taste different. If you pour the water back and forth between two containers, it will put the oxygen back into the water making it taste better. Another option is to use an additive such as those made especially for adding to bottled water, to flavor the boiled water.

In most survival situations you will not have a pan with you to boil water in. So how do you boil water without a pan? Rock boiling can be done when you do not have a pan. Gather some small to medium size rocks ***(WARNING: you have to gather your rocks from a dry area since these stones will be put in your fire and rocks that have been in wet areas for a period of time can explode just like a grenade and these can be fatal!!!)*** and put them in the red hot coals of your fire till they get red hot themselves. Using two sticks you then pick them out of your fire and blow the ash off. You would then drop these rocks into your water to make it boil. Because you do not have a pan, you would be putting this water into a hollowed out log or a burned wooden bowl. Gather enough rocks so you can rotate some in the water and some still in your fire. When the rocks in the water cool off put them back in the fire and put the hot ones in the water. NOTE: You can cook food this way as well.

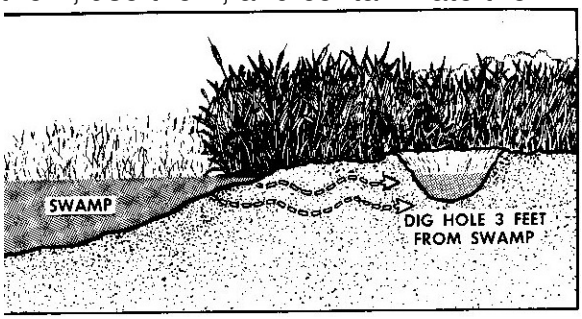
Ceramic Filter: Ceramic filters work for parasites, some bacteria and some protozoa. The way the filter accomplishes this is the holes in a ceramic filter are approximately two microns in size. Most parasites are five microns in size so they will not fit through the filter hole and are, therefore, eliminated. A lot of bacteria some protozoa and all the viruses will fit through the holes in a ceramic filter. A lot of backpackers use ceramic filters to filter their water and then drink the water immediately after filtering. I do not recommend this practice! It is a good idea to boil the water after filtering just to make sure all the bad guys are dead.

Sunshine: If you have clear water and a clear container such as a clear plastic bag you can fill the bag with water and set it in the sun for twenty minutes and the sun's ultra violet light will kill the pathogens that are in it**. NOTE:** This only works if the water is clear. If it has any cloudiness to it the pathogens can hide behind these small particles and not be killed.

Sand: Mother Nature has the best filter that there is. This filter is sand. If you can get water to filter through six feet of sand, it will purify it of all the water borne pathogens. The picture we are going to show comes from an old 1985 Air Force Survival Manual and indicates that three feet is adequate. Research has been done since then that indicates

six feet is what is needed. I recommend ten feet but I tend to err on the side of caution.

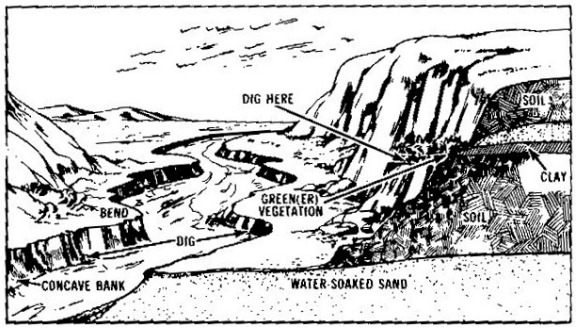
One of the best filters you can learn and use and you don't have to carry it with you is a Gypsy well. A gypsy well is basically made by digging a hole in the sand and letting the water come into it. The first fill is siphoned off because it is often filled with cloudiness caused by little pieces of dirt. You can throw this water back onto the ground because it will filter back through into you gypsy well. The second fill is usually pretty clear and you can drink this water directly. You must protect this well after it is created because wildlife will find them, use them, and contaminate them.



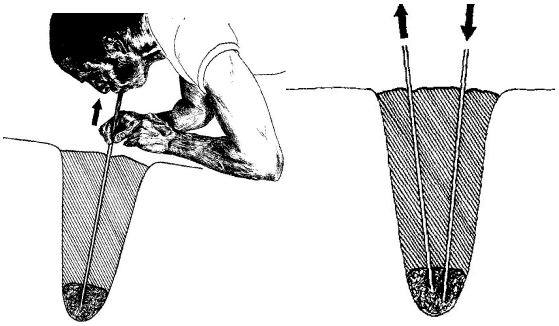
The picture below shows a good spot to create a gypsy well: The sand bank on the other side is a good spot.



In dry river or creek beds where the water had to make a corner is a good spot to make a gypsy well because the sand holds water long after it is dry on top. The below picture shows the good areas to look for water in dry locations:



A sip well is a lot like a gypsy well but it is usually created in an area that has mud but not standing water. If you try to dig a hole the sides just keep filling in. What you do is get a big wad of grass, dig your hole and shove the grass down into the bottom of the hole. You then stick a straw in the middle of the grass and cover the hole back up. There is a single straw sip well and a double straw sip well. The single straw is used when you plan to drink the water directly; the double is used when you want to use the water to fill a container.



With a double straw sip well, you blow through one straw and it will force water out the other straw and you can use this to fill your container. If you take a leaf and shove it down over the straw that the water is coming out of it will acted as a shelf and can direct the water over from the straw to the top of a container.

Straws for these wells must be carefully chosen to be sure they are not from a

poisonous plant. Reeds like to grow in the same conditions that you would make a sip well in. They work very nice for straws. Japanese Knot Weed and Elder from the elderberry plant are hollow. There are also plants that have a very soft center such as Mullen and Staghorn Sumac that can be made hollow by forcing a stick up through the center. When you make a sip well, plan on making more than one. You will get about a cup of water out of each one and then they will have to refill again.