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The Dakota Fire Hole

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A little known survival aid related to wilderness [fire making skills](#) is the Dakota Fire Hole, also known as the Dakota Fire Pit. This handy device is easy to construct and has marked advantages over other types of camp fire constructs. Once you make a Dakota fire hole and try it out, you may choose to use this method on a regular basis.

Making a Dakota Fire Hole is initially more labor intensive than simply building a fire on the surface of the ground. However the outlay in energy required to make a Dakota fire hole is more than offset by its efficient consumption of fuel; it greatly reduces the amount of firewood required to cook meals, [treat water to destroy pathogens](#), or warm your body.

The Dakota fire hole is a valuable wilderness survival aid because it burns fuel more efficiently, producing hotter fires with less wood. In many areas firewood is scarce or requires a large amount of time and expenditure of energy in foraging to obtain it. Once you build a fire, efforts are better spent attending to your other wilderness survival needs rather than in the constant gathering of firewood



Dakota Firehole

Other advantages of the Dakota fire hole are that it creates a kind of woodstove with a stable platform that is very convenient to cook over.

Should you need to conceal your fire, the fire hole will limit the amount of visible smoke that rises from the fire, since the fuel wood is burning hotter and more efficiently. The pit will also help conceal the light emitted from your fire, especially at night when even a single candle flame can be seen from miles away.

Where to Build a Dakota Fire Hole

Before you start to dig your Dakota fire hole you should scout out an area where soil conditions are conducive to its proper construction. You will want to avoid areas

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- that are rocky and difficult to dig.
- with thick tree roots that require cutting.
- that are wet or where a dug hole will fill with water.
- With soil conditions such as dry loose sand that will not hold shape as it is dug into.

The usual requirements related to general fire craft and care always apply. As always, treat the wilderness areas you enjoy and count on to survive with respect. Be sure you do not make a Dakota Fire Hole in conditions where out of control wild fires are a possibility and avoid ecologically sensitive areas. Try not to injure the roots of trees and plants.

Follow local ordinances regarding the making of fires; these rules are in place for good reason.

Making a Dakota Fire Hole

Now that we have the introduction taken care of, we can make a Dakota Fire Hole. As shown in the picture, I am using an army folding shovel to dig with. Many wilderness survivors carry a small hand trowel for the [burying of human wastes](#) and this also works well. A strong stick or part from your mess kit can also be utilized for digging holes in a pinch; survival experts are experts at innovation so use whatever means you have available.

Making the Fire Pit Chamber

Having selected a likely area in which to dig the fire hole, first remove a plug of soil and plant roots in the form of a circle about 10 or 12 inches in diameter. Continue digging straight down to a depth of about one-foot being sure to save the plug and the soil you removed for replacement later on.

This part of the Dakota fire hole will serve as the main chamber that contains the fire. I prefer to extend the base of the fire chamber outward a couple of inches in all directions so that it can accommodate longer pieces of firewood. This saves time and energy in breaking up firewood into suitable lengths, and also has the effect of allowing larger and therefore hotter fires.



Making a Dakota Fire Hole

To make a Dakota Fire Hole first remove a plug of soil about 12 inches in diameter and dig down one foot.

The effect is a jug-shaped hole at the base of which you place firewood. The neck of the jug will serve as a chimney of sorts the function of which is to increase the draft and concentrate the heat of the fire into the small opening.

Making the Fire Hole Airway

Now comes the key component of the Dakota hole that makes this fire making method so effective; the airway.

Before you start on the airway tunnel, determine the general direction of the wind. If the wind is too light to easily ascertain its

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Making the Airway

Starting about one-foot away from the edge of the fire pit, dig a 6-inch diameter air tunnel at an angle so that it intersects with the base of the fire pit.

The prevailing wind is moving from in back back of me in the upper left corner of the picture.

direction you can often lick a finger and hold it up, being sure it is away from any obstructions. Evaporative cooling on one side or the other of your appendage will be felt from which direction the wind, however light, is blowing. That is the side of the fire hole on which to construct the airway.

Dig a 6-inch diameter airway tunnel starting about one foot away from the edge of the fire hole. Angle its construction so that the tunnel intersects with the base of the fire chamber as shown in the diagram and picture. As when you made the fire hole section, be sure to save the plug containing the vegetation and roots as well

as the loose soil you remove.

Using the Dakota Fire Hole

Now that the Dakota Fire Hole is properly constructed, you can partially fill the fire pit chamber with dry combustible kindling materials and light the fire.

To start the fire I am using a [FireSteel](#), the kind Survival Topics highly recommends to be included in every survival kit. These firesteels from [FireSteel.com](#) work even when wet and will literally light thousands of fires before wearing out – try doing that with matches or a lighter! We sell high quality Firesteels at the lowest prices in the [Survival Supplies](#) section of this website. Help support this website and buy them here - I guarantee a quality product.

Once the flame is going strong, drop it into the fire pit so that it catches the kindling on fire; gradually add sticks so that a strong hot fire is maintained.

How a Dakota Fire Hole Works

The accompanying diagram shows the secret of what makes the Dakota Firehole so effective. As the fire burns, the hot air that is created goes up through the fire hole “chimney”. This creates a suction action that forcefully draws air down through the tunnel and into the base of the fire. The draft is increased even more by your having constructed the tunnel on the side



from which the prevailing wind is coming.

Acting as a kind of bellows, the flames are continuously fanned and the fire burns hotter and more efficiently than a fire that is simply made on the surface to the ground. Hotter fires mean less smoke. In addition, the heat of the fire is concentrated into an upward direction where you can better capture it for use. This allows you to do more with less wood – an excellent survival fire by any measure.

Light the Fire

Using a Survival Topics firesteel I am lighting the fire.

These firesteels always work, no matter how wet the conditions. Able to start thousands of fires, you can buy your own firesteels at the Survival Topics [Survival Supply](#) store.

Fire Hole Improvements

Once you have made the Dakota fire hole you can easily set up a cooking surface for pots and pans by laying several parallel green sticks across the fire pit as show in the picture. Lacking camp cooking gear you can also find a flat rock that only partially covers the hole – and use it as a sort of hobo frying pan.

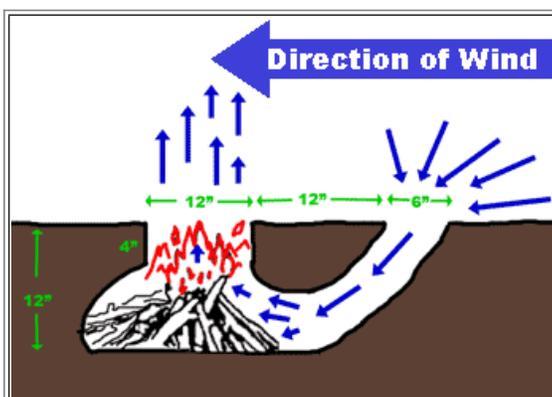
It is also an easy matter to set a “Y” shaped stick into the ground onto which is rested a green pole with bannock dough, fish, or other outdoor meal. For more information on the wilderness survival staple known as bannock read the Survival Topic on [How to Make Bannock](#).

Campfire Cleanup

When it is time to leave the area, be a responsible wilderness survivor who values the land you need for survival. Fill in the Dakota fire hole with the dirt you removed and saved when you were constructing it. Then replace the cap of vegetation. Doing so serves the double purpose of extinguishing the fire and leaving as little trace of your visit as possible.

In summary, the main advantages of using a Dakota Fire Hole include:

- burns hotter
- with less fuel
- producing less smoke
- less light visible to those you do not want to find you
- providing a stable cooking surface
- easy extinguishing of the fire
- and removal of evidence you have been there when you are preparing to leave.



Dakota Fire Pit Diagram

This is how a Dakota Fire Hole works.

As hot air from the fire exits through the top of the fire pit, a suction is created that draws fresh air down through the tunnel and into the base of the fire. This brings in plenty of fresh oxygen for combustion.

A cycle develops: The hotter the fire gets, the more air is drawn down into the fire pit - making the fire hotter.

There can be no doubt, making the Dakota Fire Hole one of the best types of survival fires you can make when surviving in the wilderness.

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Bob
Ga. USA

I use this method digging the hole on the upside of a slope then digging a horizontal trench level with the bottom of the hole then laying a four inch pipe in the trench then cover it with the end protruding from the slope. This allows me to burn trash during the no burn season.

Survival Topics - That would work and I have been experimenting with a similar setup but without a pipe. Not too keen on the burning trash issue though. But of course thats only because I value the earth we all need to survive; wish more people felt the same.

mike
toronto canada

Your web site is a great survival tool. This dakota fire pit is great information and well explained. Are you ever coming to Toronto in the near future? I am a wildlife artist and enjoy outdoor survival information. Thank You!

suburban bushwacker
the dreaded suburbs SE London, UK

Great post, as usual you got me thinking. I'd always imagined the main purpose of the Dakota fire to be conserving wood, I've been to the black hills and to the plains and those plains are windswept!

Niimki
Sault, MI

Placing a circle of fist sized rocks around the hole will help hold the heat and disperse it for warmth too.

lane trissel
yelm ,wa
You can make a grill for the Dakota Fire Hole using wire too.

Wesley Wade
Barberton, Ohio

I had heard about the Dakota Fire Hole from someone heavily involved with the Boy Scouts. Turns out the troupe has used this technique on several occasions while on camp trips. It works very well from what I understand. The fire is not only very efficient but keeps the ground dry around the fire. This area can become somewhat messy from trampling and water (from extended camp outs). The Dakota Fire Hole fire is easily maintained when a rain occurs. Simply cover the top and cover the vent so as to not let much air in to the fire and water stays out too. Good luck with your Dakota Hole fire!

S/SGT. DUKE
NC

OUTSTANDING!!GREAT WEBSITE!! Great content I really appreciate and respect you for doing this, survival is a lost art and needs to be learned.

If it wasnt for the first person to light a fire from sticks we wouldnt have cities or credit cards all these lost souls dont realize this.

Also as a survival instructor I tell my students that just going to the store can turn into a survival situation if the right conditions present themselves.

Once again , thank you for carrying the torch we need more people like you.

Survival Topics - thank you SGT for teaching survival skills, your work is very important especially in these troubled times.

O Smith
WA, USA

This is such a great invention. I think there are a good many survival tips and tricks that were developed long ago when every individual's well being depended upon his knowledge of his surroundings, and the skills he possessed to utilize what little resources he may have had available to him. Does anyone know the history of the Dakota Fire Hole?

brian
miami

Is there a variation of this method where you produce more smoke so that aircraft are able to spot you?

Survival Topics - yes, if you want to be found make as much smoke as possible. Simply build your fire on top of the ground. Once the fire is going well simply add a pile green material such as leaves or grass to the fire. This will produce a large amount of smoke that can be visible for quite a distance.

Bruce Harrison
McMinnville, Oregon

In our rain-forest woods the ground itself can be flammable for up to one foot deep. The forest floor can smolder all winter in some cases and start a nasty forest fire later on. Choose areas where the inert or mineral soil is nearer the surface or scrape away the forest duff.

Survival Topics - this is a good observation, Bruce. The Dakota Fire Hole, as all outdoor fires, should be built upon the mineral layer of soil NOT the forest duff which is, of course, burnable. In a future Survival Topic I will cover safe outdoor fire practices.

John
Minnesota

I learned how to make and cook with this type of fire at Camp Wilderness, a scout camp in Minnesota when taking the cooking merit badge 44 years ago. Now days they teach only cooking over portable stoves since fires are banned from many parks now.

Wil Rhys
Hong Kong

I like and use Dakota Fire Holes. As mentioned, suitable ground is essential.

Ric
South Africa

This seems very similar to the 'Rocket stove'.

Charles Vernon Thompson
Huntington, West Virginia

I had never heard of a Dakota fire pit until I read your article. I am going to use this method of making a fire the next time that I go camping!

Militiaguy
Beaver County, PA

Just tried out a dakota fire hole tonight. Family liked it well. Got em sitting outside instead of in front of the TV for a change.

tim
N.S ,Canada

I was first taught how to make a Dakota fire hole 20 years ago while an Airborne Pathfinder as a method of building an emergency fire while behind enemy lines and then on recce in Bosnia. It works well and hides very easily.

Jackie
Portland, Oregon

This is very useful information and a great survival technique. I am going to try this at my next opportunity.

lauren browning
school

i like the idea of the whole subject of the fire hole it is a good idea ill need to try it

Kolino
Oly WA

The dakota fire hole also seems to be a good way to prevent forest fires.

Shawn
Arizona

I ordered your fire steels - fast shipping and a great product at a fraction of the price of what others charge thank you!

Atomic Shrimp
UK

You should also avoid doing this in soils with a high proportion of organic matter - such as peat - as it is possible to set the ground on fire.

Jay
Ky

Excellent idea!!! The fire hole would be great for those in the military and hunters alike. Please keep the survival ideas coming.

Rick Little
Maryland

Have you ever tried digging into frozen soil? I would suggest trying an above ground rock pile to contain the fire and provide reflector and draft control for the winter camping advocates.

Tim R.
Cincinnati, OH

Great, easy to follow instructions. I'll use this from now on when camping.

swamprat
MS

I use this method whenever possible. Puts out plenty of heat and is easy to maintain. I have also found that if used long term, you can make the vent hole of the Dakota Fire Hole large enough you can use a stick to scrap out the ash.

Tristan
Texas

I have something similar built in my yard just slightly bigger it's about five feet deep. even has a vent similar to the one on the dakota fire hole.

James L.
Stanton, TX.

The Dakota fire pit is one of the best ways to build a fire. One twist I might include in the construction of the pit is much the same but I dig three vent holes into the pit. Place a flat rock over the two off wind sides so when the wind changes you won't be smoked out.

Spike
Californistan

I can't wait to practice this, but I'm a little worried that I won't be able to find the right kind of soil. I imagine this would take a while to dig without a smallish survival shovel.

Dutch
Illinois

wondering if you used another hole opposite of the intake would this act like a chimney so you could have it inside of a shelter?

You are welcome to share this Survival Topic with others. I only request that you use a short blurb (not the entire survival content) and this code to link to the original:

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